OPALESQUE

Opalesque Roundtable Series '18

CHICAGO

Opalesque Roundtable Sponsor:

CME Group

Editor's Note

Equity Risk, Pseudo-Liquidity, ETF Fragility and The Managed Futures Conundrum

Equities are the biggest risk in most peoples' global portfolios with $100 trillion market cap. Let's add to that the fact that HFT, automated algorithmic trading, has moved up to probably 90%, 95% of all trading and there are failsafe switches programmed in these algos to pull their bids and offers in unfavorable environments.

This means that rather than piling into a down trending market, these players would rather just exit the market. People think there is liquidity, but then there isn't because the high frequency and algo traders will simply exit the market. The real risk isn't that they will start going massively short, but that there just won't be as much liquidity as people thought there was.

These automated trading algorithms have not actually been tested under real pressure, under a real adverse event, and markets could essentially implode. Find out why Emil van Essen is so vocal about this type of systemic risk. (page 14, 19).

From passive to active defense

Many investors were wondering why Managed Futures essentially mirrored stock market losses in February and October 2018, when they are non-correlated investments? In this Roundtable we are shedding light on this conundrum and a number of other **misconceptions on managed futures.**

Crisis alpha in the short run is still possible within the CTA industry, but for that, investors and consultants may have to look beyond the large firms that manage the lion share of the assets and research the wide range of talent and strategies available at the smaller outlets. The Roundtable participants also discussed increased interest from investors moving from passive to active defense and risk mitigation (page 14, 22, 33).

The Opalesque 2018 Chicago Roundtable, sponsored by the CME, took place in Chicago with:

1. Ernest Jaffarian, Founder, CEO & Co-CIO, Efficient Capital Management
2. David Klusendorf, CIO,Typhon Capital Management
3. Tom O'Donnell, Managing Director, 3D Capital Management
4. Emil van Essen, CEO and CIO, Emil van Essen, LLC
5. Jeff Malec, Managing Director, RCM Alternatives
6. Andrew Strasman, Principal, Totem Asset Group
7. Clint Cox, Co-CIO, Crypto Futura Fund

The group also discussed:

- **The Forgotten Basics:** Markets move in two directions (page 12,13,24,32). Dealing with equity risk as the biggest risk in most investors' portfolios today (page 13,14). The return of the 2007 exposure (page 17). The value of liquidity (page 19). Why hedge fund returns are down (page 31-33). Conflating non-correlation with negative correlation (page 6)

- **The trouble with today's modern electronic sub-second market-makers, payment for order flow, no-load funds, Robinhood:** A travesty with the SEC looking the other way (page 15-16). ETFs: An example of "fragility" (page 20)

- Have managed futures diversified models away from the classical trend following, or did they stay the same? (page 20-22). Discretion in systematic trading (page 23). Opportunities in China for proven standard trading models (page 26)

- Crypto Update: The backbone for a new generation of applications (page 26-29), Implications of a World Currency (page 30), Did the Bitcoin Cash fork cause the slump? (page 10). Tether breaking the buck and the rise of stablecoins. The 51% dilemma: Grinding Bitcoin to zero while being short the future? (page 11,12,28).

Enjoy!

Matthias Knab
Knab@Opalesque.com

Participant Profiles

(LEFT TO RIGHT):

Tom O'Donnell, David Klusendorf, Andrew Strasman, Jeff Malec

Clint Cox, Emil van Essen, Ernest Jaffarian

Introduction

Ernest Jaffarian
Efficient Capital Management

Ernest Jaffarian. I am the CEO and co-CIO of Efficient Capital Management. Efficient creates multi-manager CTA portfolios, ranging from a broadly diversified fund of funds to custom solutions on our platform, Efficient Access®, and is dedicated to maximizing the unique benefits available in CTA investments.

Emil van Essen
Emil van Essen, LLC

Emil van Essen, CEO of Emil van Essen, LLC. We are CTA that specializes in real alpha strategies that have a low to negative correlation with other alternative investment funds. We primarily trade relative value and commodities spreads focusing mainly on energy and agricultural sectors. We also run a MLP Yield Capture Fund, which combines managed futures with energy infrastructure equities with the goal of hedging out the beta risk of equity indexation and energy prices while harvesting yield.

Tom O'Donnell
3D Capital Management

Tom O'Donnell, I am a Principal and Managing Director of 3D Capital Management. I have 30 years of traditional and alternative investment experience. My investment career began in the late 80's working for the Virginia Retirement System (VRS). The VRS was a pioneer in the alternative investment industry. My two primary responsibilities at the VRS were running the $10 billon Global Equity Program, including the portable alpha program, and the $500 million Managed Futures Program.

3D Capital Management's president and portfolio manager, Eric Dugan, founded 3D Capital in 2010 to protect the long-only stock market investor. He started his 25-year investment career working for the legendary money manager Monroe Trout, and we have over 50 years of combined experience managing equity market risk. Our firm specializes in daily, dynamic, defense and active equity management. Our programs invest exclusively in the E-mini S&P 500 futures contract in an effort to provide profits and protection for the long-only stock market investor. We are passionate about helping investors achieve their financial goals with less fear and less downside volatility.

Clint Cox
Crypto Futura Fund, LLC

Clint Cox, Co-Chief Investment Officer of Crypto Futura Fund, LLC. I come from a family office background (3rd generation) and have started companies involved in the Internet and rare earth element industries. I began researching crypto in 2016 and formed Crypto Futura Fund LLC with Josh Rogers and Jeremy Epstein in 2017. Thank you for the invitation Matthias, I am really happy to be here.

Jeff Malec
RCM Alternatives

I'm Jeff Malec, one of the partners at RCM Alternatives and formerly the CEO of Attain Capital Management. RCM's core business is matching up investors and managers in the global macro and managed futures space, while other areas focus on providing services such as clearing, execution, and fund outsourcing. We have also added a professional trading group which caters to prop firms unique clearing and collateral needs, a group of quants focused on building execution algos in the futures space; and recently expanded into China.

I focus on business development and am active in educating and promoting the space via our popular alternative investment blog.

David Klusendorf
Typhon Capital Management, LLC

David Klusendorf, CIO Typhon Capital Management, LLC. We are a tactical trading shop. I have been in the commodities trading business for over 30 years. First with Timber Hill LLC, then my own trading group for 24 years before joining Typhon in 2015.

Andrew Strasman
Totem Asset Group

Andrew Strasman, I am the Principal for Totem Asset Group, a CTA based out of Evanston, IL. Our Orca Program is a Pure-Trend, Zero-Equity system designed to be a cost-effective complement to an investor's classic stock, bond and real estate portfolio.

I co-founded a networking group here in Chicago called "Traders Fulcrum" which organically grew to over 2,200 members of the local financial community and began an academic project called www.40in20out.com which publishes a transparent index of trend trading returns every minute of every trading day in an effort to educate investors and establish a useful benchmark.

Matthias Knab

Given that we're in Chicago and here at the CME, let's start with taking a look at the managed futures and CTA space. One of our panelists, Jeff Malec, recently wrote on the Attain Alternatives blog a post titled: “Where’s the Non Correlation”

There he asked why did Managed Futures essentially mirror stock market losses in early February this year, and again in October, when they are non-correlated investment? Isn’t this what we have them sitting around for – to perform during a down move in US stocks? Answering that non-correlations really just means sometimes positively correlated, sometimes negatively correlated; and it takes time for an alternative investment to transition between those two phases.

What is your view or your experience with CTAs in the current environment?

Jeff Malec: There is no doubt that CTAs and the managed futures space right now are in a very tough spot. Managed futures has typically been understood as synonymous with trend following, but we are seeing a lot of people trying to diversify away from it, and maybe even not fast enough, because we’ve just come through a period in both February and October of 2018 where Managed Futures/Global Macro didn’t provide the crisis period performance they have become known for.

In February, we saw the S&P down roughly 10 and managed futures down roughly 8. Then in October it was the S&P again down 8 or 9 and managed futures per the SocGen Index was down 7 or so. Everyone seems to be wondering what’s going on – why aren’t their alternatives going up when stocks go down? ***But these investors, even the most sophisticated ones, are once again conflating non-correlation with negative correlation.***

So, to me, non-correlation just means a bunch of periods where you are highly correlated and a bunch of periods where you are negatively correlated that average out to about 0.

An open question amongst investors, and one for everyone here: have managed futures just been lucky that in the past crises the portfolio happened to line up where we experienced that negative correlation? Or is it a case of there being two stages to the non correlation; one in the initial reversal where there are going to be losses; and two, where we see gains if that trend extends in the direction of the reversal?

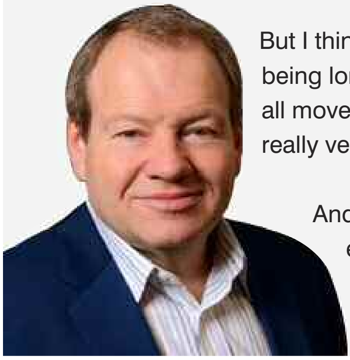
It’s not as easy as understanding a passive beta product. So I think a lot of investors are confused by the current environment, even though the academic and the education out there is showing them, hey, as I said, non-correlation doesn’t mean you are going to perform oppositely every time; it means sometimes yes, sometimes no. And more than likely no when we’re talking days or weeks.

I will finish with a thought that I think we are potentially seeing some unintended consequences from the ultra low volatility period over the 2009-2016 period. I think some managers may have cheated on their base models a little and added long equity exposure overall, more equity exposure. I don’t necessarily blame them, it was either door one, go out of business because there’s no volatility; or door two, choose to get some better returns with a little bit of long equity exposure, but a theory could be that we are seeing worse performance during a stock market downturn because they have tweaked the model a little and gotten more long equity exposure.

Emil van Essen: **Traditionally, managed futures have done their best when equities were in a bear market.** Why? Because equities in a bear market tend to be extremely volatile, and the volatility in equities is then always on the downside.

And when equities get extremely volatile, the whole market subsequently gets volatile. Managed futures tend to be a long vol instrument, whereas equities tend to be short vol, and so they tend to be very complementary.

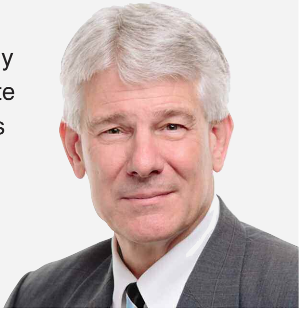
Now, it seems to me that even though equities were temporarily volatile in February and October, we really haven't seen any extreme volatility and the volatility hasn't leaked into other markets, which I think is what managed futures needs. In combination with your point that people have added long equity exposure into their managed futures program, essentially colluding the diversifying effect, I think that's also true.



But I think we also have to say that if you are going to have a diversified portfolio, you just can't get it by being long equities. There is not much diversification in equities themselves because of indexation, they all move together, and the key to investment success is diversification in non-correlated products. There is really very little you can do except to move into managed futures.

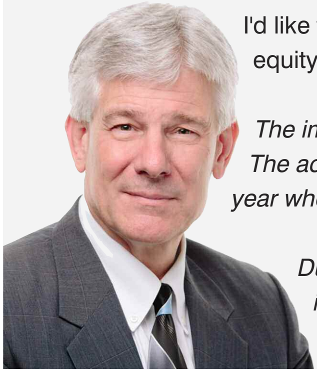
And maybe I will add the caveat that commodities are especially a non-correlated asset class to equities, so it's probably the part of managed futures which is most non-correlated.

Ernest Jaffarian: I would respectfully disagree with one comment. We allocate money to approximately 40 CTAs and because we have managed accounts with these managers, we have can see and evaluate their positions and trading. We do not see, among these traders that we know very well, a bias towards adding a long equity exposure.



Matthias Knab Also not historically?

Ernest Jaffarian: Also not historically.



I'd like to address a **misconception** people may have when CTAs have provided help during significant equity downturns.

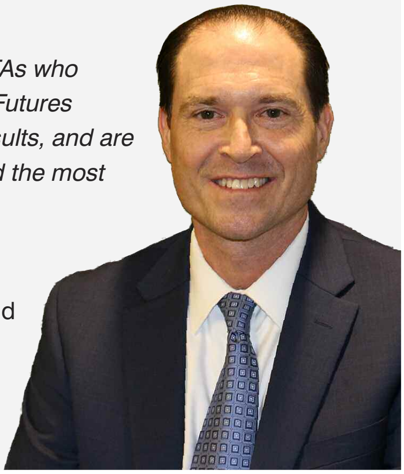
The implicit assumption is that CTAs were short equities and made their profits by being short equities. The actual reality is considerably more complex. As an example, let's think about the last quarter of 2008, a year where the value of CTAs during market crisis is well known.

During this period, it is true that CTAs made money being short equities, but they made more money in their fixed income and energy positions over that quarter, which is consistent with one of the things *that Emil was suggesting: It's not necessarily the volatility in the equity markets, but more about the that Emil was suggesting: It's not necessarily the volatility in the equity markets, but more about the expansive volatility across a number of markets.* ***CTA convexity often comes from a variety of sectors, not just from the equity markets.***

Tom O'Donnell: I would agree with Ernest and Jeff that many CTAs and the CTA indices have not provided the desired negative correlation during the trying periods from equities especially this year during the months of February and October.

And to Ernest's point, the historical evidence does show that CTAs often make more money in markets other than equities. Afterall, Investopedia's definition of Managed Futures says *Managed Futures provides portfolio diversification by offering exposure to asset classes to help mitigate portfolio risk in a way that is not possible in direct equity investments like stocks and bonds.* However, just because many of the CTAs don't provide this type of diversification doesn't mean they all don't, and just because an industry definition says something isn't possible doesn't mean it can't be done.

Our firm, 3D Capital Management, as an example, only trades the E-mini S&P 500 futures contract (equity only) and we have 'shorted' this historic bull market profitably and capital efficiently with no overnight positions. *There are strategies that had positive performance this year in February and October. Even though the benchmarks don't reflect this, crisis alpha in the short run is possible within the CTA industry. We've done it.*



Unfortunately, the Managed Futures industry is dominated by a relatively small number of CTAs who manage the lion share of the assets. There is tremendous diversity of talent in the Managed Futures industry. If the investors allocating the assets, and their consultants, aren't happy with the results, and are seeking negative correlation during the trying periods from equities, they should look beyond the most popular names in the industry.

My experience in the Managed Futures industry dates back to 1990. The way CTAs have become synonymous with trend following is also a concern. The diversity of trading styles and strategies within the industry is one of its greatest attributes. I hope to comment more on this later.

Andrew Strasman: I can confirm what Ernest says. It was not uncommon to find programs +48% during 2008, and for my part was able to do so without trading a single contract of equity futures. Short (or even better extended) periods where the absolute value of cross-market correlations approach 0.80 or higher are where trend programs tend to generate much of their profits. Identifying these periods with the beneficial perspective of hindsight is easy.

I crewed on a racing boat for many years, and in yacht racing we would use a maneuver called a **"roll-tack".** The goal here is to keep the weight of the crew on one side of the boat, then to quickly shift all the crew weight over to the other side of the vessel in concert with the boat's turn in order to lessen the drag on the keel and keep boat speed up. In effect, you would get people leaning one way, in order to go the other way.

We often see this pattern occur in markets.

While participants often cite the 2008 crisis experience, this was a tale in three acts. From around the fall of 2007 through spring of 2008, trend programs were quite comfortable being short the dollar and long commodities (and equities). This reached a natural terminus into the summer months creating a lengthy period of consolidation, long before the fireworks began in fall as a final act. Often gone unmentioned is that about 1/3 of our 2008 profits came from an earlier "not a crisis" environment before markets "roll-tacked" into the panic, triggering the Central Bank's response.

I like to think of the market encapsulating all the supply, demand, fear and greed factors into prices, and these prices sometime behave like the "moveable ballast" we find on the racing boat. Another great exemplar I will often use was when the Thai Baht actually got stronger in '97, right before becoming completely unhinged.

David Klusendorf: The thing that's most concerning and Emil touched on it, is the **spread of volatility from these recent equity market shocks,** if you want to define it in that way.

Will volatility spread into other sectors in a fundamental manner? From a tactical point of view you start to look at different sectors and formulate where we are at as far as this path is concerned. Is this a blip on the radar and we will continue with a bull market or are we really entering different regime? In a strict commodity point of view you like nothing more than volatility, it's what creates opportunity from a trade perspective to have outsized returns.

When you look across the interest rate markets and along with some of the agricultural products, you start to wonder, is this spreading the way you would think in a related historical manner? That's the real question in front of everyone. How do you deal with that and how do you provide that non-correlated asset from a purely commodity point of view?

I would really like to hear what Clint has to say about the dampening in the crypto space.

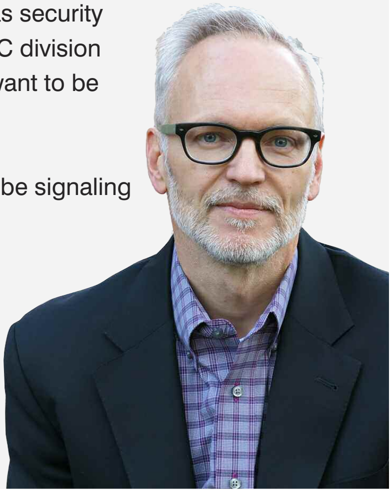
Jeff Malec: Just a quick point of clarification, we have seen crude oil down 20% from its highs, and the whole energy complex down pretty significantly. And rising interest rates are a main factor for the equity sell off. So we have seen the so called spill over and spread of volatility outside of just equities. They have just not been in the right directions, no?

The volatility has got to expand but it also needs to be in the right direction. A lot of investors are asking us if in previous crises periods it was luck that the portfolios were prepositioned for a flight to safety and consequently a lot of money was made in interest rates, to which I answered no, but still… it makes you wonder.

Clint Cox: To David's question, crypto prices have declined significantly over the course of 2018, dropping from over $19,000 per Bitcoin at the end of 2017 to a stable price of around $6500 for Bitcoin from June to mid-November. However, since mid-November it has dipped low as $3200. Much of this recent price drop is being attributed to a contentious Bitcoin Cash fork, recent regulatory actions, and capitulation by some investors.

I don't want to get too far into the weeds here, but the **Bitcoin Cash fork** concerned a lot of people in the crypto community, not necessarily because a large market cap crypto is forking, but because there is a lot of bad-blood between the two groups splitting, and there are a number of unknowns as to how the market will react and who will be supporting which fork. *People tend to get nervous when they don't know what will happen to their money.*

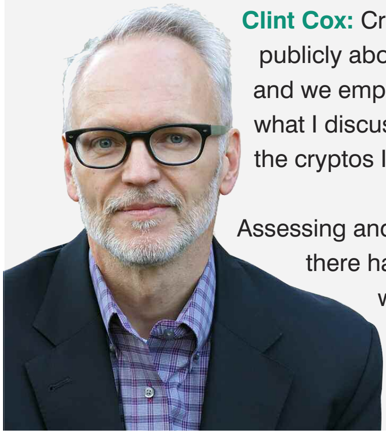
Recent regulatory actions have included the SEC charging the founder of crypto exchange EtherDelta with operating an unregistered securities exchange, forcing two ICOs to register their token sales as security offerings, the DOJ potentially looking into the Tether/Bitfinex situation, and the Treasury's OFAC division listing several crypto wallets on its Specially Designated Nationals list – this is NOT a list you want to be on!



In addition to this, Bitcoin has broken some long term technical trends that some believe may be signaling a bear market.

All of that said, the market does seem to be working this out, and after the recent drop there has been some stabilization of prices at these lower levels of around $3200 to $4200. Traders of volatility have enjoyed the drop, but it's been somewhat disconcerting for the buy and hold crowd.

Matthias Knab You want to tell us more details how you trade crypto, I assume long only?



Clint Cox: Crypto Futura Fund is a private fund, and as such we are restricted as to what we can say publicly about our assets or our strategies. In broad terms, I can say that we are focused on buy and hold, and we employ an algorithm that evaluates a wide range of criteria affecting cryptos. I will also add that what I discuss today is about the market in general and not related to our specific portfolio. In fact some the cryptos I will be discussing today are not held by our fund.

Assessing and analyzing cryptos has been a challenge for the sector, and because it's relatively new and there have been a lot of innovative methods employed to do this. This is incredibly exciting work, and we are constantly changing, redefining, and refining our methods as the market matures and develops.

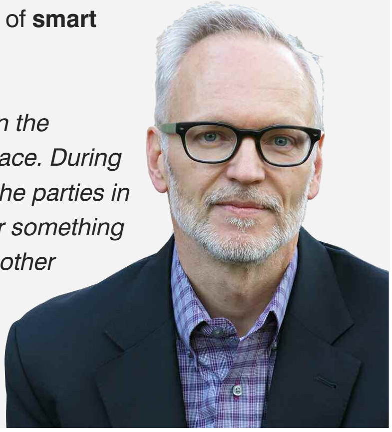
Andrew Strasman: Clint, can you tell us about Tether and what's going on there as it recently and momentarily "broke the buck"?

Clint Cox: The uncertainty surrounding **Tether** is definitely an issue hanging over the crypto market. Tether is supposed to be a stablecoin pegged at 1 US Dollar to each Tether, and there are said to be US Dollars in an account to back each Tether. It is also closely tied to the crypto exchange Bitfinex. However, there have been substantial price fluctuations away from this $1 peg, as doubts have arisen as to whether the money is actually in the accounts as stated. Adding to this, there has never been a full audit of all of the Tether accounts and they let go of one of their auditors. There is a significant sum involved here – well over $2 billion. Back in January, Bloomberg reported that the CFTC had sent subpoenas to both Tether and Bitfinex. There could be a number of concerns here, and regulators are doing what they can to make sure that the markets are fair and that the public is protected.

In the midst of this controversy, there are many other **stablecoins** beside Tether that have come into the market, as there is increasing market demand for cryptos that have low-to-zero price volatility.

The concept behind stablecoins is instead of trading in and out of fiat as different cryptos are traded, investors could stay in a crypto that is pegged to the US Dollar (or other currency or basket of currencies). This would make it easier to go between exchanges, trading in and out of different cryptos, and if the crypto market gets too crazy, investors can just go back into a stablecoin that allows them to stay in the crypto environment without having to go back in and out of the USD – because a lot of exchanges can't actually handle fiat trades at this point. But once the regulatory boundaries are more firmly establish, we get fully regulated exchanges, and the market matures, these issues may resolve a bit.

One more point to understand regarding the potential use of stablecoins is the increasing use of **smart contracts,** as they are a huge part of the upside of the blockchain.



With smart contracts, one of the problems is the volatility of the price of the crypto escrowed in the contract—which might be triggered at any time over the course that the smart contract is in place. During that time period, the crypto can fluctuate radically in value, potentially putting one or more of the parties in the contract at advantage or disadvantage. Big companies don't like instability and may prefer something that behaves more like a USD, that allows you to manage and predict cash flows. So that's another reason why these stablecoins might actually become more popular and useful, because big companies, if they are going to use smart contracts, want price stability.

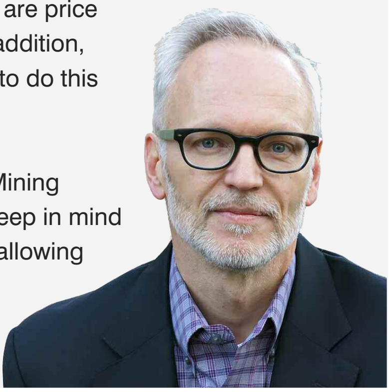
Emil van Essen: There is, among the people we consider experts, the talk of a few big miners in Bitcoin, and with the ability now to short Bitcoin and futures, if these large miners control over 50% of the mining, they can essentially take Bitcoin to zero, and this is a fear that some people have.

There are probably only four big miners in the world, and if two of them got together and made an effort, they can essentially **take Bitcoin to zero,** which would probably then also take the whole crypto space virtually to zero.

Jeff Malec: The argument until now has been it's not in their best interest because they hold all this crypto.

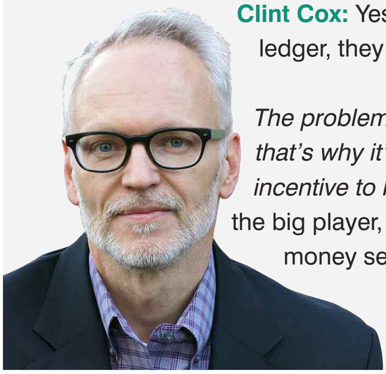
Emil van Essen: The profitability of mining Bitcoin has gone way down this year too. I know people who have mined it and they can't make any money. So now you can short it, take control over the mining, and then take it off to zero – that's what's I wanted to point out.

Clint Cox: Large miners have done pretty well in the market, and I'm not sure they would want to ruin that. If they did conspire to take short positions and then create a **51% attack** and take down the price of Bitcoin, there are price limits on many vehicles – such as the CME Bitcoin futures – that might inhibit such activity. In addition, regulators might step in. They would also have to get a bunch of these larger miners to agree to do this and coordinate it, which might be incredibly difficult.



Speaking to Emil and the profitability of mining, you are correct that it has declined this year. Mining profitability ranges widely depending on the processors in use and local energy costs. Also, keep in mind that the difficulty level for mining (or solving the complex algorithm) gets adjusted fairly often, allowing the market to stabilize over time, even in an environment with decreasing prices.

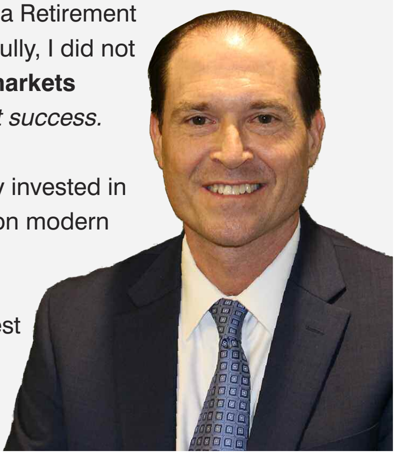
Jeff Malec: But can't they also with 51% edit the blockchain as they now are in control of the ledger, so they could also change the ledger, no?



Clint Cox: Yes, as long as 51% agree on the same thing, they can change the rules, they can change the ledger, they can change who owns what.

The problem is once they lose the confidence of the market, Bitcoin might go to zero in that case. But that's why it's safe at this point, because the miners are competing with each other and have a huge incentive to keep Bitcoin prices as high as possible. But keep in mind, a company like BitMain, which is the big player, they also sell processors to the mining community. They are in the unique position of making money selling picks and shovels and using picks and shovels.

Tom O'Donnell: It is fascinating to me that crypto has found its way into the alternative investment industry, and I still have a lot to learn about it. So, thank you Clint for sharing your knowledge.



Let me circle back for a moment to the start of my investment career as an intern at the Virginia Retirement System in 1987. I remember going back to school in October when the crash occurred. Truthfully, I did not know much about investing back then, but that month of that year solidified in my mind that **markets move in two directions.** *I believe that embracing this fact is essential to achieving investment success.*

And then when I became a full-time employee at the Virginia Retirement System, we ultimately invested in managed futures in May of 1991. There wasn't a lot of literature back then. We were focused on modern portfolio theory and the pursuit of the northwest corner. The only managed futures academic literature available then was the Lintner Study, and we didn't have anyone else to copy. Since our Roundtable conversation today is focused on alternatives, I'd like to reintroduce the biggest risk we were managing in the early 90's, which is an even bigger risk today for the vast majority of institutional investors. We are in one of the longest, if not the longest, bull markets in history, which prompts this question.

What is the biggest risk in most investor's portfolios today?

Jeff Malec: Equity?

Tom O'Donnell: Correct, **the biggest risk in most investor's portfolios today got to be equity market risk,** right?

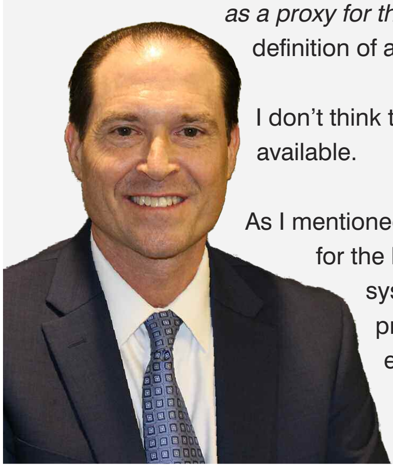
And so, in my mind, the lesson I learned at the start of my career – markets move in two directions – should be at the forefront of investors' minds as they attempt to minimize the risk of potentially large losses. When investigating the managed futures industry, they need to remember that this industry invests in the world's portfolio of exchange traded assets: stocks, bonds, currencies and commodities, it offers tremendous liquidity and transparency. There is all this talk about non and negative correlations – these are in essence the same things we were looking for and doing back in 1991 at the VRS.

Some of the strategies available in the industry are non-correlated and some are negatively correlated, but for some reason this message either isn't resonating or investors just prefer to allocate to the managers who have the most money. As a reminder, studies show that AUM is not a good screening criteria for identifying the best performing managers. That would be one observation.

And secondly, I also have to express a frustration about the way trend following has become a sort of a risk premia.

At the Virginia Retirement System, one of the risk premia they identified in the 80s, many years before I started working there, was small cap. The idea being that there is more risk associated with owning small cap stocks, risk equals return, and exposure to small cap results in a risk premia. The VRS capitalized on this risk premia by creating an equal weighted S&P 500 portfolio, which resulted in a greater exposure to small cap stocks and ultimately achieved a higher return over time than the cap weighted S&P 500.

It's unfortunate that CTAs and trend following is viewed unfavorably because the larger asset managers are experiencing challenging times. Investors need to understand that there is a lot of diversification within the trend-following style category especially when you factor in the different markets and time frames managers can utilize. I'm not saying there isn't a risk premium associated with trend following, but it is an injustice to use the performance of the largest trend following managers as a proxy for the whole style category. It is easier for equity market managers and investors to agree on the definition of a small cap stock than it is to agree on a definition for trend following.



I don't think the managed futures industry gets as much credit as it should for the diversity of talent that is available.

As I mentioned in my introduction, Eric Dugan of 3D Capital started his 25-year investment career working for the legendary hedge fund manager Monroe Trout. Eric could have taken what he learned in the systematic, short-term, global macro space and created another broadly diversified hedge fund product, but he didn't. He identified a product that was missing. His observation was that everybody has long-only equity market risk and is vulnerable to declines in the equity market. Long-only equity market investors are guaranteed to make money when the stock market goes up, but they are also guaranteed to lose money when it goes down. He decided to address this downside risk head on.

Eric created a program that is designed to identify and profit from daily weakness in the S&P 500 and respond to stock market volatility in an effort to provide the defense so many equity market investors are missing. Our systematic, global macro approach enables 3D to remain nimble and adapt to the daily narrative of the market.

He approached me nearly two years ago identifying himself as a CTA. After learning that he only trades the E-mini S&P, and has a program that does so with a short-bias, I told him he is also a defensive active equity manager.

When I was running global equities and managed futures at the VRS I could have used a strategy like this as an alternative investment or as a capital efficient overlay to my equity portfolio. We all know that investors draw boxes for their asset classes and style categories, and then they try to fit managers into a box. I don't know if they have drawn the crypto box yet –

Clint Cox: So far it's been a very difficult to get crypto to fit any particular shape…

Tom O'Donnell: Right, and the hedge fund industry is already a crowded space.
Investors and consultants who attempt to identify the best programs have their work cut out for them.

I know the risk disclaimer says, past performance is not indicative of future performance, but I think understanding the investment objective of the managers' program and the net performance results the manager has achieved is still a great barometer for identifying talented managers. *In my view, managed futures still works, it's just a matter of how you implement it and whether you are selecting the best talent that's available in the industry.*

But again, I think the biggest risk in the investors' portfolios is equity market risk, and I think that's what they are trying to manage. Profitable strategies that help investors mitigate equity market risk should be in demand.

Emil van Essen: Equities are the biggest risk in most peoples' global portfolios with $100 trillion market cap. Let's add to that the fact that HFT, automated algorithmic trading, has moved up to probably 90%, 95% of all trading and there are failsafe switches programmed in these algos to pull their bids and offers in unfavorable environments for these systems.

In 2010 we experienced the Flash Crash where all of a sudden this sudden drop came out of nowhere, but now we have a dramatically higher percentage of trading being dominated by computers who are thinking for themselves, who all have a failsafe, who don't care about adding or making liquidity in the markets. So now the question is what will happen if a real event happens that triggers a down move and all these computers not only pull all their bids, but start hitting any bids that are left, you could have a catastrophic situation, and I am not sure how it would even unwind itself.

Markets could essentially implode, really implode to close to zero, just because computers will drive the whole thing down into oblivion. Eventually it will come back, but it would be like the 2008 banking crisis only that it would unfold so much faster.

Matthias Knab But don't the exchanges have their circuit breakers when trading and prices collapse, and then market can then pause and reconfigure?

Emil van Essen: Okay, so even if you have a circuit breaker for 15 minutes, then what happens? The liquidity will still be gone, and nobody will be making any markets.

Andrew Strasman: In no small part, I think the real issue here is that so-called market makers are not providing a true market-maker function.

I think Ernest can back me up on this, but back in the day at the CBOE if you were making a market, a bid implied an offer and an offer implied a bid. So, if you were "1/2 bid for 100", the guy next to you could turn and say "paid even on 100." Now, you may not have been looking to sell more, but rather seeking to buy in some shorts. Yet, rules were rules.

Today's modern electronic sub-second "market-makers" are not exactly held to similar standards, and this could easily exacerbate moves. So basically, I don't know why this isn't really apparent what's actually happening, they are basically bribing the purchasing agent. So when there is payment for order flow and they are trading these sub-pennies in between the bid mask, this is a complete dereliction of duty, in my opinion.

And when you see like I think I saw in TD Ameritrade,"75% better fills", every time it's a better fill, it's because Citadel or Two Sigma or Renaissance is on the other side gaining your order. So I don't know why this isn't apparent.

I think it's starting to come up a little bit right now. You are seeing that Robinhood, if you guys are aware, that free trading thing for the millennials, it has come come out now where they are making all of their money – from payment for order flow.

You go a little bit further down the rabbit hole here and you see **Vanguard no-load funds,** yes, they are doing it for your benefit, that's how nice they are, they are getting paid for order flow.

This **payment for order flow is a travesty** with the SEC just kind of looking the other way on it. And the real issue here is because they are not providing a true market maker function.

Ernest, you will back me up on this, on the CBOE, if you half bid for 200, somebody would be like you half bid 200, somebody would pay even on 50 and you would be like damn, because the bid implied an offer and they have rules around it, but if you are bidding you are implying an offer.

So if you are opening your mouth and you are bidding on something, that's not the case with these guys, the computers. First, they are front running your order, they are mismanaging on the agent basis, and then they are not really providing a true market intra-function, because you are right, they will pull the trigger.

Matthias Knab Can you explain how payment for order flow works?

Andrew Strasman: Bribing of the purchasing agent? A captured regulatory body permitting front-running and an abuse of customer orders? [laughs]

Emil van Essen: Essentially the HFT guys want to see the order flow. They have the fastest connectivity to all the exchanges and when they see the retail order flow, they know what's going to go on at the exchanges and they can essentially race to the exchange before you.

They used to do it so they would support the New Jersey Exchange, because if somebody was trying to execute an order and it would go out from New York and it would hit the New Jersey Exchange first, they need to see that order flow, because they know a big order is coming and they are going to hit all the other exchanges before you can get there. So your time to that exchange is slower than them, so they know you are trading and then they race you to the other exchange and they take the order before you can get it.

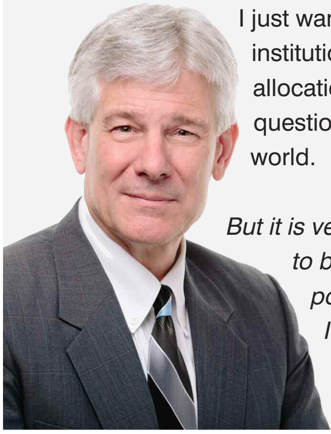
Andrew Strasman: Front-running is one aspect, there is also "leaning on the customer order" in a game of hot potato. I feel like investors should be incensed every time they get a so-called "price improvement".

Emil van Essen: Well, there are all kinds of algos that are running. So Robinhood, where I have an account, and several of my family members have accounts, I advise them never put in a market order, because they are selling that order flow to hedge funds who are going to give you horrible executions, so only place limit orders. You are going to get good fills and decent pricing on limit orders.

But the pirates are out there and they sell this and they know they can make money. But I think the real point I was trying to get across earlier is that *these automated trading algorithms have not actually been tested under real pressure, under a real adverse event, and I am wondering whether the market can really survive a sudden event, which then triggers all these programs/algos to do things that are adverse to people's best interests.*

Ernest Jaffarian: I felt pretty good coming here and now the whole world has gone to zero.

[laughter]



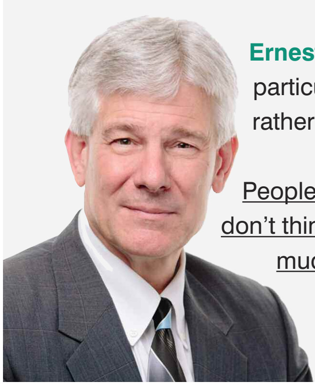
I just want to add a comment to the discussion about stock exposure. Our clients are almost all very large institutions and we regularly talk with large institutions, both clients and prospects, about the strategic allocation in their portfolios. Almost universally we are seeing a reduction in exposure to equities. The big question is - where is that money going? The answer to that question varies in various different parts of the world.

But it is very shocking to me to see in this close to zero interest rate environment that people are going back to buying low quality debt and lower quality sovereigns for higher yield. They are leveraging their portfolio exposure to get a higher yield, and I am thinking to myself, I have seen this before, haven't I? Some portfolios are really gravitating to a 2007 kind of exposure, which is stunning to me.

Jeff Malec: I think that also on the crypto world we may see order flow or arbitrage-type trading, so buying one at one price and then selling it at a higher price on another exchange, so here we have the same concept.

But just to throw a thought out there, perhaps we will see groups like the CME or some of the other futures exchanges actually adopt payment for order flow before we see the SEC gets rid of it. So maybe this goes the other way. All the exchanges are for-profit institutions, and they could pursue this as a way to make more money.

And then to Emil's point, at least in the futures world there are also increasingly algorithmic executions that in theory should lessen the effect of what you are talking about. Should we have a situation where bids will be disappearing at an increasing rate, in theory the computer is going to do a better job than the humans at capturing those bids on the way down, except of course for the complete worst case scenario of a complete market collapse.



Ernest Jaffarian: Well, the people that I know that trade in a high frequency way in various markets, and particularly in foreign exchange, they don't say they will pile into a down trending market. They would rather just exit the market, and this is what's called **"pseudo-liquidity".**

People think there is liquidity, but then there isn't because the high frequency guys will exit the market. So I don't think the real risk is that they will start going massively short, the real risk is that there just won't be as much liquidity as people thought there was.

Andrew Strasman: I can't help but think of when the 1.20 peg in Euro-Swiss Frank failed in Jan '15. Before this occurred, I had teased some others that their 1.1980 sell stop was going to get filled around 1.17 with slippage. Try 1.06!

I think what happened – because they are so saintly in the OTC FX markets – was that at around the 1.15-1.17 range, the banks were in some trouble too because some had been caught leaning off this peg themselves. But, if you go ahead and fill a customer at 1.06, hey, all of a sudden you are golden.

Emil van Essen: Just to add to Ernest's point, the **Flash Crash of 2010**, the issue was exactly what you said, so all of a sudden somebody started selling massive amounts of futures and the guys in the prop shops running algorithmic trading are looking at this not knowing what's going on and they say, shut it down, quick! That's what they do, shut it down.

Now, I am saying what happens if you have a real crisis where actually there is a real reason to sell and so it's not just one big seller hitting a bunch of bids and unloading his positions, but a bunch of people coming in and selling at the very time when everybody cancels their bids, and now, it's not 2010 and it's not 70% of volume, it's 95% of active trading unplugging from the market. With all those participants gone, all of a sudden there are no bids anymore and markets will be left in a vacuum.

Ernest Jaffarian: Let me also add that the scenario Emil describes cannot be contrasted with 1987 either. In 1987 there were a lot of portfolio insurance programs in the market, and they in fact did jump on the short side of the trade. This is a major difference.

Emil van Essen: 1987 was one of my first few years, and right, a lot was portfolio insurance where people were simulating puts and they kept trying to sell futures, and all of a sudden the futures went to a bigger and bigger discount to the cash...

David Klusendorf: The only real concern is there is no incentive to make a market in those situations, and liquidity flies away like a bird. As more and more firms are able trade at the speed of light, they should be able to react quicker, but what happens really when the plug is pulled first, and they don't want to participate? They have no incentive to participate because they are not providing a market making function. So, in the end liquidity is an illusion? You don't know what's going to be down the pike for it, especially in the managed futures space.

Looking at some of the sizes of those programs causes pause, wondering what is an optimal size for an investor? Is it a smaller guy that trades $50-100 million because he can be more nimble than someone that trades a billion dollars that are just locked into a trend following program? It's hard to steer a bigger ship than a smaller one.

Andrew Strasman: As a small guy, I can assure you I am a lot more nimble than my bigger brethren, David, and agree there are significant advantages available. For trend strategies, I think that it is probably somewhere between $500-800M as the upper limit before one becomes capacity-constrained, begins to cannibalize their own trades, and is forced into a multi-strat approach.

To your other point, investors should seriously reflect on just **what is the value of liquidity.** In 2008, for example, many hedge funds enforced their gates and you couldn't get out of your down 50% investment – even if you wanted to.

This should be good news for anyone who enlists CTAs in a separately managed account format. Embedded within this investment format is essentially top-day liquidity. An investor can close their own account whenever they wish.

The value of this intangible must be somewhere between 200 and 500 basis points per annum. Of course, you don't need to pay for this; the value just exists in there naturally.

Emil van Essen: You are right, as a trader of commodity spreads you really get to know the value of liquidity. So investors ask me how scalable is my market liquidity, and I say, *"Well, it's not the liquidity you have when you are entering the trade, it's the liquidity you have when something goes very wrong and you are trying to get out of the trade."*

For example, I was in a situation in 2012 where we were in a drought in the United States and I had a big soybean spread on, and all of a sudden the soybean spreads were moving. Everybody got afraid of the market, nobody wanted to make markets and then somebody put in a massive order to get out of their position – as there was really no liquidity in the first place, this person absolutely destroyed the market and took everybody out. The market went from being 500 up on the bid to being 3 up, and that was really a crisis situation for the people trading in that market and so I have some reference points what happens when there is no liquidity in markets. **This is why I am so vocal about this type of systemic risk.** This is also why we have changed the way that we trade and manage risk within our portfolios because we have been through and survived these types of catastrophic liquidity events before.

Maybe people think that they are on the safe side trading the bigger markets. Ernest called it pseudo-liquidity, so you get the illusion that liquidity is there, but wait till the thing rips 100 big figures, and then let's see what the liquidity is.

In the Flash Crash, the E-mini was trading 2s and 3s when it went to the extreme of that market low. So there was really no liquidity once it really started ripping.

Andrew Strasman: Can we talk about the burgeoning ETF markets as well?

The massive shift in investor preference from active into passive strategies is well documented by now. As this disintermediation process continues and compresses margins, it may be wise to consider that often you get what you pay for and ETFs may only as good as the custodian behind them in the creation and redemption process.

What if Deutsche Bank were to have its "Lehman" moment, TARGET2 fails and resulting catastrophic cascading defaults infect a custody bank like BNY Mellon? Can they continue to support the underlying holdings of their ETF's? A lack of liquidity and massive swings in the discount/premium model as Authorized Participants dry up will leave investors questioning the value of liquidity, as we just discussed.

We saw this during the Monday, August 24, 2015 **Flash Crash** when the Dow dropped roughly 1,100 points in the first five minutes of trading. *That evening, some 300+ closed-end mutual funds and ETFs could not compute their VAMI, so on one of the bigger down days in market history, they just used the previous Friday's close.*

I think Taleb would probably call this an example of "fragility".

Jeff Malec: *I would say in such a case they will fail in concept, but they won't fail technically, as we saw with the inverse VIX ETF, they will stop them before they fail. So they won't let it take down all of Bank of New York; they will say this ETF no longer exists, it's down 98%, we throw in the towel, and this is in all the prospectuses that they can unwind and kill it.*

So it's a real problem when you think an ETF would be tied to a certain asset or index, and now, whoop, the ETF was taken out but the actual asset kept going up or down. This is exactly what we saw with XIV, which was CBOE's largest customer. CBOE just reported their revenues are like 38% revenues down, so you can see such events can trickle through the whole system.

Emil van Essen: I have wondered about the **GLD ETF** a lot. I think it got up to $70 billion in gold, and it's supposed to be backed by physical gold. Somewhere on their website they state the exact amount of physical gold they have. My question here is if say we have a crisis and people buy $5 billion or more of this ETF in one day, how is the ETF possibly going to buy $5 billion worth of actual spot gold in a crisis when there is no liquidity? They can't do it and they would be turning the market into a zoo.

Gold could go to $5,000 because they are obligated to buy the physical gold – I don't know if they can declare force majeure, but they have to buy the physical gold to meet the requirements of the purchasers of the ETF but they can't possibly do that in extremely large amounts because of the restrictions of that market. There is a lot of these things where people didn't think through and extrapolate to the extreme situations.

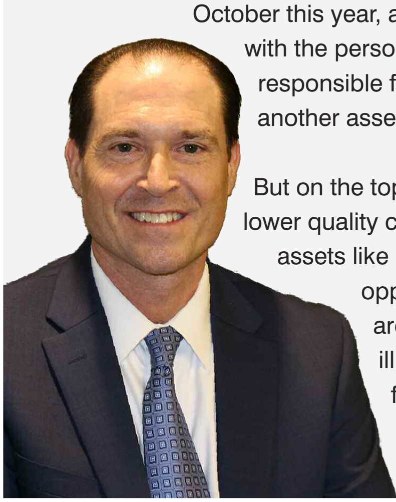
Matthias Knab Jeff, you mentioned earlier that managed futures have started to diversify their models away from the classical trend following. Can you add more color here? How is the industry essentially innovating?

Jeff Malec: OK, a few observations there. Tying back to volatility, we see a lot of volatility-based programs, whether that be outright VIX futures, VIX options, VIX spreads, so volatility is on its way to become a dedicated asset class. A lot of that is option selling, repackaging, but inside there can also be some advanced relative value VIX plays.

AI is another trend or buzzword, and we could probably spend three hours just talking about that alone. People are looking for AI applications in trading and investing.

And then thirdly we also see some activity in the field that Tom had described, so a sort of convexity protection of my beta portfolio, so a more direct protection instead of trend following which is going to protect you over the long-term, but maybe not this week or month. People now also want to know exactly when a program is going to protect them, and the quicker it can protect a portfolio, the better.

Tom O'Donnell: The investor definitely needs a reasonable expectation about when the strategy is expected to help them. Our strategy is short-term, it doesn't use options; it can be long, short or flat (no position) in the E-mini S&P futures contract daily. The short-term nature of our strategy makes it reasonable to expect our strategy to do its job in months like February and October this year, and it did. Interestingly, when we speak with prospective investors, we occasionally speak with the person in charge of alternative investments, but more frequently we speak with the person who is responsible for equity market risk. So what we are doing can be viewed as a way to take alternatives into another asset class, if you will.



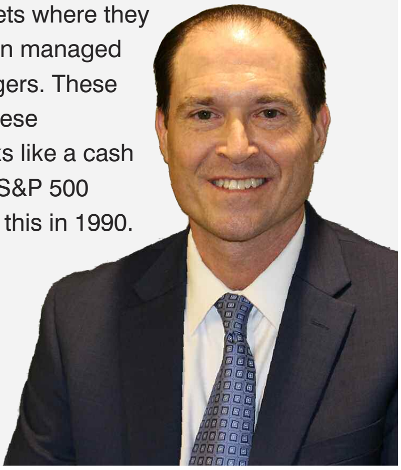
But on the topic of liquidity, and Ernest's comment about institutions getting out of equities, in addition to lower quality credit, I've been reading about institutional investors increasing their investments in less liquid assets like private equity and infrastructure. I don't know if now is the right time to invest in those opportunities, but illiquid investments should pay a premium for how illiquid these investments are. After-all, the beneficiaries expect their checks every month and you can't pay benefits with illiquid investments. Investors have to manage liquidity risk and strategies like managed futures, with daily liquidity and transparency, can help.

Jeff Malec: Do you see the investors moving into portable alpha or are they outright selling equity exposure and then going into something negatively or non-correlated?

Would they be treating your program, Tom, as portable alpha and basically adding that without subtracting any equity exposure or are they subtracting it to add alternatives?

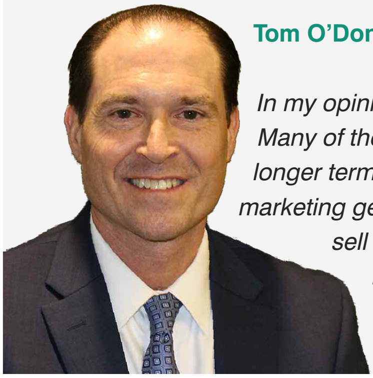
Tom O'Donnell: It's a combination. At 3D Capital, our defensive, short-bias program is 100% equity (E-mini S&P). It seeks to extract value from the S&P 500 by playing defense. Our strategy is also capital efficient with a 3% margin to equity. Investors can use it as portable alpha or a stand-alone.

I think its constructive to look under the hood of the managers strategy and identify the markets where they invest. This helps determine the types of risk they manage. For instance, before we invested in managed futures at the Virginia Retirement System in 1991, we invested in equity market-neutral managers. These managers invested equal dollars long and short in stocks and had a beta of zero. Because these managers invested in stocks, you'd assume it is an equity investment, but with no beta it looks like a cash investment. Our investment policy required us to be fully invested; no cash. So, we used the S&P 500 futures to equitize the market-neutral program and included it in our equity allocation. We did this in 1990. The term portable alpha didn't exist then, but the concept is the same.



The capital efficiency of futures, and futures-based strategies, make them ideal for portable alpha and standalone.

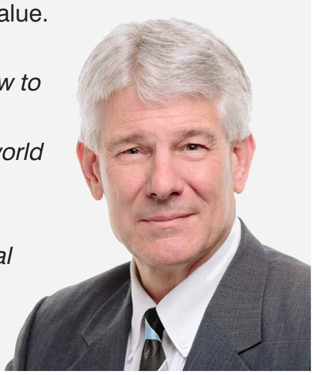
Jeff Malec: Were you also at one time doing 130/30?



Tom O'Donnell: No. At least not while I was there.

In my opinion, investments like 130/30, risk parity, and the like, make it even more difficult for investors. Many of the things that have been created over the last three decades are just lacking usefulness over the longer term in my opinion. Some of these things may have worked at one moment in time, and then marketing gets a hold of it, and they change the name of it to something really fancy, repackage it and they sell it again, just look at smart beta. So, there is a lot of interesting marketing, but investors need to look through that.

Ernest Jaffarian: You are right. And actually, in the CTA space, investors have become far more sophisticated about paying for what they want to buy. So if they want a core momentum position, they pay a very low cost fee. They still will pay management and incentive for uniquely diversifying strategies and for approaches that offer unique value.

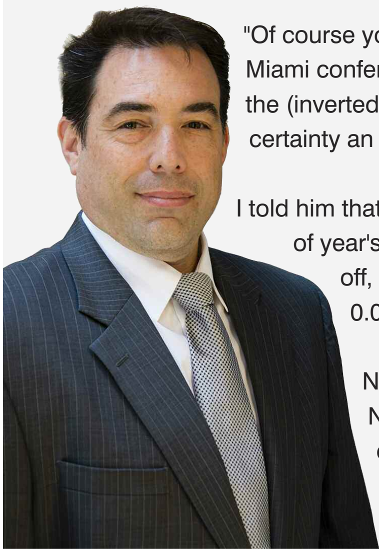


But, to make a slightly contrarian comment, even though top-tier CTAs are constantly researching how to improve what they do – they actually rarely end up making significant changes. It's instructive to understand from that perspective that the best minds in the trading industry do not believe that the world has fundamentally changed.

They do believe this is an unusual period of time in economic cycles, but they believe the fundamental concepts are still sound and because of this, they have the discipline to stick with them.

Andrew Strasman: We were using optimization algorithms and early machine learning techniques back at DRW in the late 90s, often because we had to when large numbers of iterations on big datasets would take days to process – the kids have it so good now! But, at the end of the day, much of the ML garnering attention these days boil down to really good linear regression analysis. If you are only using the data forged from a decade-long Central Bank experiment, then you should probably be aware that nobody has a clue what will happen at the outset.

This past summer I had lunch with a new colleague, Dmitri Alexeev of AlphaBot and the former CIO at Dearborn Capital. When he asked how trading has been going, I explained that it was difficult battling against the invisible forces of the Central Banks.

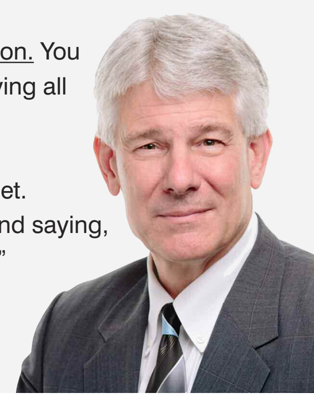


"Of course you are!" he said and asked if I had seen his 2015 Research Note presented at the 2015 MFA Miami conference. I had not, but in it he plotted the CTA drawdown curve of the Barclay CTA Index against the (inverted) growth of the Fed's balance sheet. This PhD's work showed with a very high level of statistical certainty an explanation for both ongoing CTA woes and equity market success.

I told him that if were to append his chart with the ECB's efforts, this would probably explain the next couple of year's price action. Did it ever! His updated work showed how the ECB took over where the Fed left off, keeping a lid on volatility and supporting the stock market. For you statisticians, the p-score of 0.01 should hold strong meaning.

Now that balance sheets have shifted into reverse, equity market price action in October and November starts to take on interesting meaning and I can't help but wonder if this portends an excellent environment for trend strategies.

Ernest Jaffarian: Regardless of what people think about systematic trading, there is always discretion. You are deciding which models to use, which markets to use, you are making discretionary calls underlying all of the systematic trading rule-implementation.



And we are hearing people saying that the last few years of data may not be the more reliable dataset. Traders who tended to put heavier weight on shorter term price information are extending that out and saying, "I think the longer term history is probably more reflective of the future than the shorter term history."

David Klusendorf: And then, what is that **data?** If you want to compare data from 1987 to 2018, those datasets are vastly different. It's a hard goal to work with longer, continuous datasets that cover 20+ years. And you are right, there is way too much emphasis put on what's happened yesterday instead of having a further back view of something.

It would be an interesting question for Tom to talk about it from an institutional perspective: *when you start to look at a lot of these systematic traders and the math that they are applying to what they are doing, do you have a preference for how far that look back is or should be compared to their live trading record?*

Tom O'Donnell: In addition to working for a public pension fund, I also was a partner in a multi-manager CTA firm, with a track record dating back to 1986. The more data and track record you can get your hands on, the better. You want to be able to analyze the performance during different volatility regimes.

As I stated earlier, comparing the strategies investment objective to what it has actually achieved is key. This also helps the investor determine if the strategy is in fact what they are looking for. Understanding the evolution of a manager's strategy is also important.

Ernest mentioned **fees** before, which is of course another huge topic especially in the alternative investment industry. It is very important that investors get what they pay for.

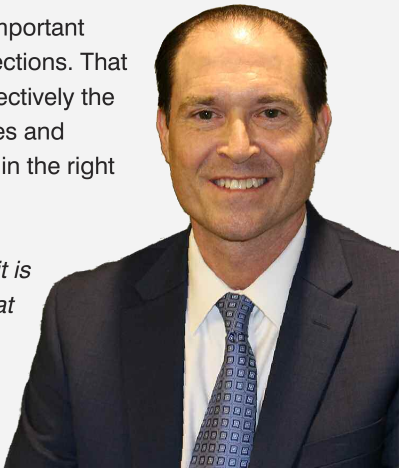
When I was a plan sponsor, I negotiated fees with managers. There is a sense of accomplishment when you are able to strike a great deal. Still, it is important to remember that you get what you pay for. Negotiating the lowest fees doesn't mean you are going to get the best performance. For example, at the VRS in the early 90s, we paid one basis point to the managers who managed our Russell 3000 Index fund exposures. I'm sure everyone would agree that one basis point is a very competitive fee structure. In fact, when you factored in the securities lending income we received, these equity market index funds were essentially free.

Negotiating fees is a worthy pursuit, but ironically the riskiest investment in many investor's portfolios, namely their long-only index funds, actually present the greatest amount of risk. After-all, the stock market did suffer two 50% drawdowns in seven years: '02 and '08. Does paying one basis point for an investment that loses half your money sound like a good negotiation? Or how about paying 40 or 60 basis points for long-only active equity management? When the benchmark is down 50% and the manager is down 49% it is difficult to claim overall victory. The truth is lower fees are associated with products that deliver Beta, and higher fees are associated with products that deliver Alpha.

I have never met an investor who said, "Here is some money, it's okay to give me back less." Every investor wants to make more money. We are all absolute return driven investors. The actuarial rate of return target for a pension fund is a positive number. By definition this makes them an absolute return investor and managing downside risk is vital.

Historical evidence shows that approximately two-thirds of the time the equity market is going up (good for long-only equity strategies), but one-third of the time it is going down (bad for long-only equity strategies). So, markets move in two directions. Managing the guaranteed loss associated with your long-only equity market investments, possibly the largest risk in your portfolio, is paramount. It is prudent to be prepared.

The asset allocation decision that these institutional investors are making is truly their most important decision, and they should embrace the fact that every market they invest in moves in two directions. That was our main attraction to the managed futures industry back in the early days, because collectively the CTAs are long/short the world's portfolio of exchange traded assets: stocks, bonds, currencies and commodities. Investors need to choose the right asset classes, in the right percentages, and in the right direction. Employing managers who identify the direction of the market correctly is essential.



As Ernest can tell you, since he's picking CTAs, the skill of the managers does vary. And so, it is about identifying the managers that have the best skill. My experience as an allocator was that the manager either has the skills or doesn't. I don't think a lot of these strategies can just be easily implemented by anybody. Discipline is an important attribute.

Emil van Essen: I'd also like to share some thoughts about developing strategies and David's question on how far to look back when evaluating a manager.

I think it's important to notice that trend following is a different animal – it is basically a long vol strategy where you are aware that there are outliers involved that happen from time to time, and by waiting for those you were going to make money over time, making a long vol return which is a good offset to investment portfolios that have a short vol bias.

<u>In the commodities side we have effects that structurally change the actual commodities themselves and can establish an entirely new paradigm</u>. So you might have commodity that behaves in a particular way for a period of years and years, and all of a sudden it structurally changes permanently and it goes in a completely different direction for many years to come.

For example, crude oil may have a behavioral pattern for 10, 15 or 20 years and then suddenly there is a huge change in technology that abruptly disrupts the whole behavior of the crude oil market. This was certainly the case with the Energy Renaissance and shale revolution in North America where the whole market behavior changes. This doesn't affect what a trend follower looks at, but if you are actually looking at that individual commodity, a sector or sub sector can go through an entire structural change. It is our job as portfolio mangers to identify these changes and stay ahead of the curve.

Another example would be the commodity roll arbitrage trade which at some point structurally changed forever. Here, everybody was essentially front-running the behavior of the long-only commodity funds, and all of a sudden the long-only commodity funds permanently changed their behavior and that trade just went completely away after ten years of being very profitable.

Therefore, if all you did was run an algo to take advantage of something like that and you don't have your eye on the ball in terms of how the market is changing, you would essentially get ground down to zero because of permanent structural changes. This is why particularly in commodities managers need to be constantly aware of market dynamics.

David Klusendorf: I think that goes back to what Ernest was saying when he described how the top firms operate. The systematic trader is using a series of tools but there always is a human or a team of humans putting that structure together and then what to implement, what tool at what time to best move your program along.

It's one of my frustrations with doing due diligence on traders when they come to us with a systematic program of some sort and we ask them what they really think the nuts and bolts are. And at that point, we don't want to hear the marketing ploy of "Oh, we are systematic, we have a bunch of algos running."

How do they run? What do they run on, what tells you to deploy a certain algo at what time? Those are questions that a lot of systematic traders have problems with.

Jeff Malec: Circling back to innovation, we are seeing a lot of innovation around execution algorithms, basically getting alpha out of the execution part. That has happened in the equity space and with some of the biggest CTAs for a while but not necessarily in the small to midsize CTAs. It used to be that creating the signal was enough, but now people are not only looking to test their model but also how are they going to produce the orders and put it in the market.

Today the signals may be 50% to 70% of the game and the actual execution of that order has become a big source of generating extra alpha, or at least a best practice. I think investors, also driven by Basel III and all that, are starting to have to ask what your execution strategy is to make sure you are doing the best practice also.

Beyond that, we are doing a lot of things in China. **We are seeing a lot of innovation in China.** People have likened those markets to the 1980s in the US with a lot of directional volatility, and so many US and European managers are showing interest in taking their existing models, porting them over, testing them out, and see how they look on the Chinese market data.

You can't have US investors trading over there, so we are talking Chinese firms trading Chinese money. The initial testing and many of the things we have seen look great, but these markets are, relatively speaking, in their infancy. What's important to notice is that they are not creating models from scratch, these are proven models on US markets that are now just being ported over to another market. Talk about out of sample testing!

And then lastly, I will add some comments on **alternative data.** I don't know what the latest stats are, but as we know there are gigabytes upon gigabytes of data created every second or minute or whatever the number is, and a lot of that is getting into hedge funds. The traditional managed futures space has been a little late to that game, I think, but we are starting to see a lot more unique managers that are diving into alternative data source when systematizing a fundamental strategy, putting that data into their systems to help making decisions on it.

One trader we work with has also issued a kind of warning not to take this too far. As we know, a lot of hedge funds were buying satellite data to measure oil storage, but there has been talk about an oil company buying a paint company to paint their tanks with an infrared paint or something like that so that the satellite couldn't see through the tank and measure what's in there.

Before we leave, I would just like to ask Clint, what's the delta on if this whole crypto thing is going to be around in two years?

Clint Cox: Just a little background: when I had the discussion with my wife about going into crypto, I said it had to be a 10-year horizon, so I am hoping that this has a long time horizon.

So here the question is, will crypto and blockchain – which are two separate, but closely related technologies – will these get absorbed into other technologies, other sectors? Will cryptos and blockchain become a part of a greater whole and disappear as their own sector or asset class? I don't think they will. Because they provide entirely new and unique ways to organize and distribute data and value, I think they will develop and mature in ways that we can't even imagine today. Indeed, they may provide the backbone for a new generation of applications utilizing this new technology.

We talk about the FAANGs, but what we are really talking about is the effect and impact that these companies have on our culture and our economy. Each of these companies use the Internet to collect, disseminate, or exchange data. Blockchain and cryptos represent the next iteration in technology—the power to exchange value.

So is this going to last? Yes, this is going to change the world. This is a new way for humanity to organize. It is peer-to-peer, decentralized, borderless, and governed by agreed-upon code. I know it sounds big, but I believe history will be kind to cryptos and blockchain.

What the Internet did was allow us to exchange information globally. With blockchain we will be able to exchange value, through smart contracts, through cryptos, through tokenization. It's going to allow us to ***exchange value*** *in a way that absolutely transforms supply chains – and that is an easy one, they are already doing that. They are already tracking things and making supply chains more transparent and efficient. This technology is also going to change identity, how we keep track of each other. It's going to change how we keep track of commodities, and how we trade. Instead of T+3, we are going to be at T+0.*

When you look at cross-border exchange, remittances, transactions and wire transfers, all of that, all of those payment systems are going to be completely transformed. When global payments are put into the system today we know where it goes in, but we don't know when it's going to come out the other side or where it is during transit, necessarily. But when you can do global payments using crypto, you can do it in seconds or minutes. Boom! Any amount, it's gone and done. That's why there is so much talk about it.

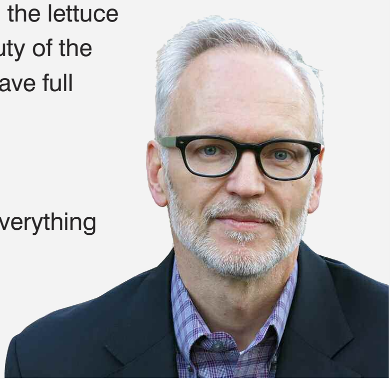
Emil van Essen: Can you explain to me, for example how in shipping industry it has been stated that blockchain helps them to move containers around the world in an immensely more efficient manner, but I don't understand exactly how?

Clint Cox: Currently, the most prominent example of using blockchain in shipping is the TradeLens project run by Maersk and IBM. Some of the largest port and terminal operators in the world are involved. Using smart contracts on a blockchain, trading partners and government authorities are able to get the information they need to access while protecting privacy. Things like container temperature, weight, contents, and other data can be tracked and updated in real time. Now the location and status of containers can be tracked by one person with access to the blockchain instead of multiple people and processes. The efficiencies created have cut some transit times by as much as 40%.

Jeff Malec: But doesn't all this technology already exist? I mean, Maersk is already now scanning and documenting their containers in a central database?

Clint Cox: Right! So here is the beauty of blockchain. While the same data might have gone into a database previously, now this happens on a blockchain which allows each interested party instant access to the data they have permission to see. The status of each container can now be scanned, tracked, and audited in real time.

To use an example, you scan a box of lettuce, and that lettuce is now on the blockchain. Next, the lettuce arrives somewhere to get made into various products, and it also get scanned there. The beauty of the blockchain is – and Walmart is working on this – they now know where all that lettuce is and have full transparency on each step, because it was all in the blockchain from start to finish.

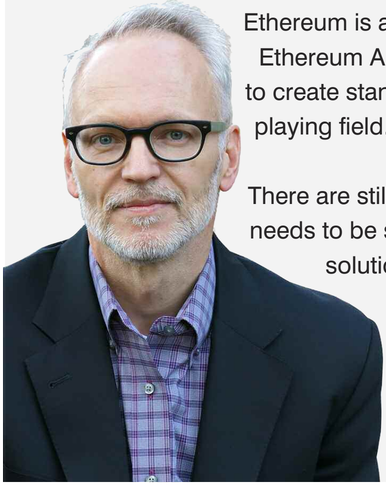


Now, let's say there's some kind of E. coli breakout that has to do with the lettuce. They know automatically where each of the products are, where they were shipped, and they can recall everything almost instantaneously. What used to take a week to trace now takes seconds.

Jeff Malec: Do you have the same 51% problem on any blockchain? It's immutable unless someone controls 51%?

Clint Cox: The short answer is that 51% attacks generally occur on blockchains that use mining and proof of work in their consensus protocol. There are many blockchains that use other protocols or that have mechanisms to prevent such hacks.

Corporations often use blockchains such as Hyperledger Fabric, which does not utilize mining at all, and therefore does not fall prey to the risk of a 51% attack. Blockchains like this are public, but each business can tweak their usage and allow their transactions to be private and inaccessible to the public. Hyperledger is hosted by the Linux Foundation, is available publicly and open source, but can behave like a private blockchain. The public can't see into the blockchain ecosystems of Maersk or Walmart.



Ethereum is another blockchain being used by businesses. There is an organization called the Enterprise Ethereum Alliance which includes hundreds of companies that are enterprise scale. They have all agreed to create standards for Ethereum so that when we are trying to put together smart contracts, there is a level playing field.

There are still plenty of issues with Ethereum, but they are trying to fix these things along the way. So there needs to be something that's public and something that's private, but we haven't fully figured out the final solution. This is still developing.

A lot is going on right now – there are hundreds of blockchain use cases, and while many of these are still in early days, there are very specific use cases developed which can over time mature into large adaptations and businesses.

Matthias Knab Bringing it back to an investment space, if anyone is actually interested in putting money here, many advocates of cryptocurrencies say, “Once it gets institutionalized, once we figure out the custody piece, and once we can centralize things....” - but isn't centralization and even giving up your private key where you directly hold your digital assets to some custodian – and well all know what happened in the financial crisis when investors were afraid that banks weren't the trusted custodians of assets and cash accounts any more – isn't all of this a contradiction to let's call it the Satoshi principles of cryptocurrencies?

Clint Cox: That’s spot on. You are right, the whole cryptosphere is looking at and hoping that we have all these institutions jump in and push prices up. But as more institutions become involved, there is definitely a tendency toward centralization and regulation – the very things Satoshi was trying to break free from.

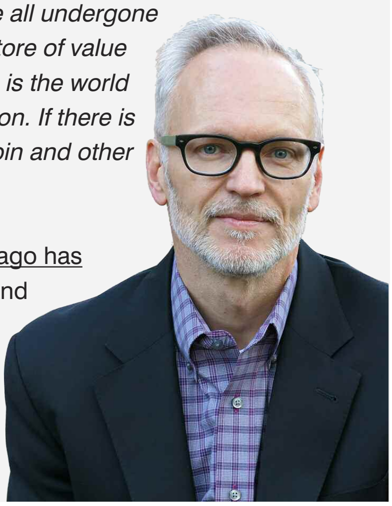
Let's keep in mind that this “revolution” was created by a bunch of really smart developers outside of the system. We are a decade into this, with the birthday of Satoshi Nakamoto’s White Paper on Halloween 2008. But there is more to the infrastructure piece, it's not only the custody question. We need qualified custodians, for sure, but we also need regulated exchanges that provide transparent pricing that is less subject to manipulation. I mean, the CME has been a pioneer here, starting with the Bitcoin Reference Rate which they ran for about a year. And once they had that data from four underlying trading platforms and felt comfortable with that, they then decided to launch a futures product.

The industry needs institutional-level custody that institutions can trust. That’s coming. You have Goldman Sachs investing in BitGo, a crypto wallet provider. Fidelity just announced that they will be getting into providing crypto custody. So this is coming.

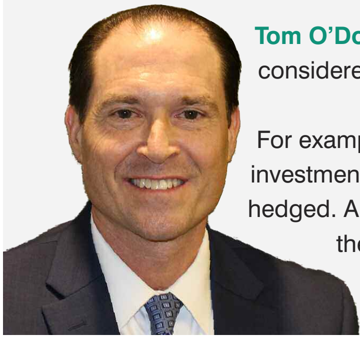
What would happen if institutions started buying into crypto in a major way, what would that do to this market? That would certainly put some serious demand on the current supply and might move prices in some exciting ways.

The statistics are out there, and institutions are stepping into the space. Bitcoin and Ethereum are the obvious initial investment targets, but as investment products – such as futures and options – expand, there are many other cryptos to look at. Not all cryptos are going to be legit, but at least 20, 30, 40, 50 may become legitimized and as those come on to exchanges, those prices will spike. Security Tokens are also emerging. These are cryptos that plan to register as securities and toe the regulatory line from the get-go.

Another thing to keep in mind is that Satoshi Nakamoto released his whitepaper in the midst of the largest economic crisis we had seen in a very long time. Since then, places like Cyprus, Zimbabwe, Venezuela, etc., have all undergone crises, and each time there was a local spike in Bitcoin prices. Bitcoin has clearly become a store of value during currency crises. We have a difficult time understanding that here in the US, as the USD is the world reserve currency, but currency risk is a real issue to a significant portion of the global population. If there is another global economic crisis on the scale of 2008, it will be very interesting to see how Bitcoin and other cryptos react. For the record, even as a crypto fan, I am not looking forward to such a crisis!



On a local note, while there is a lot of activity around the globe in crypto and blockchain, Chicago has great potential to become a leading hub in that space. Chicago has futures exchanges CME and the CBOE. It has trading with Cumberland and Jump. It has CMT Digital. It has ErisX. It has Coinbase Pro. So I don’t know if we are actually going to end up being a center of crypto, but Chicago’s definitely in the game.



Tom O'Donnell: Let's assume we had some form of a **world currency,** be it digital or other, has anyone considered the unintended consequences?

For example, the diversification benefit associated with international equity and international fixed income investments comes from the foreign currency. For this reason, many investors leave the currency risk un-hedged. A world currency would remove currency risk. Investor would need to revisit how they manage their traditional stock and bond portfolios.

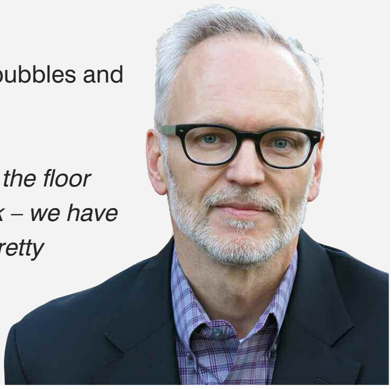
Clint Cox: *We do know that Central Banks are looking at crypto or digital assets. I think we may have a sovereign cryptocurrency in the very near future. So it is really possible that we end up with a Central Bank crypto before we have the next major crisis, and then that would be really interesting to watch.*

While we would not want to let go the USD, we should also keep in mind as we look at economic history, that there is a changing of the guard for reserve currencies every 80 to 110 years. This started back with Portugal in the 1400s, then Spain, the Netherlands, France, the UK, and then the US Dollar.

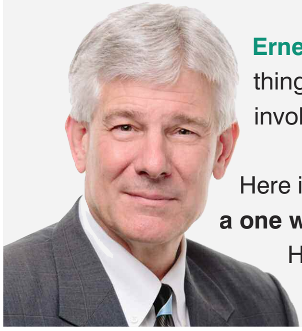
We may now well be at one of these **inflection points** with all these new forms of mobile payments becoming more prevalent and the nascent cryptocurrencies. Will all of that now lead to a crypto-based system? This is interesting from monetary history perspective.

I want to add a comment on **bubbles and Bitcoin.** Bitcoin has actually experienced multiple bubbles and declines – several more pronounced in percentage terms than what we are experiencing now.

It's not the same as the old tulip bubble, which just had a one way run and then fell straight to the floor again. With Bitcoin it appears more of a cycle than a bubble. Each peak is above the last peak – we have had seven of them – and the average price gain between the peaks is about 880%, which is pretty significant from my point of view.



Matthias Knab Ernest, there are now hundreds of crypto hedge funds set up and we have derivatives like futures, do you see CTAs making money with cryptocurrencies or experimenting with them?



Ernest Jaffarian: The very short answer is no. I do know people in the CTA space that are doing some things in crypto, but these tend to be very small firms. The serious players in CTA space are not yet involved in crypto.

Here is my one crypto comment: **This is the first time in my life that I actually visualize the potential for a one world currency and thus a one world government.** This is scary and has eschatological implications. However, this concern is outside of this discussion.

Jeff Malec: We did a blog-post a little while ago called The Great Hedge Fund Investor Reset, and the concept was that you see all this press talking about how hedge funds are under-performing, and not keeping pace with the market.

We agree that the performance is down, but no one is talking about the risk. What people do not seem to understand is that the returns are down but that's most likely on purpose because the investors have demanded it.

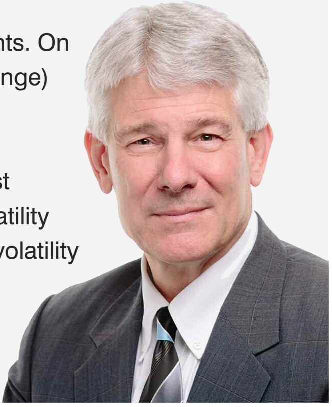
As investors put more-and-more money into hedge funds and into alternatives, especially managed futures where you can target a vol, you almost get lower returns by definition. So investors say I want 10 vol or I want 12 vol, and hedge funds are also coming up with unique access structures where they are delivering exactly what the investors want, lower vol and the corresponding lower returns.

I was wondering what's everyone's view on this: Do you think it's the investors driving lower returns because they are giving lower risk or do you think it's the market environment?

Emil van Essen: I think the market environment is always changing and it doesn't always repeat itself exactly the same. There is always a different nuance. But at the end of the day, I think the business we are in is trying to generate alpha and non-correlated streams of alpha that we and investors can then combine together. That is the name of the game, and if you can do that, I think you can conquer the world without undue risk, and it's always been that way, irrespective of volatility.

Jeff Malec: To be for sure, but if you bring out John Henry's track record today, it would be too volatile. Like, if you're at a 25 vol and 50% of returns, whatever, they had 40% returns versus first few years, do you think billions of institutional money is going into that program? I don't think it would fly in today's world.

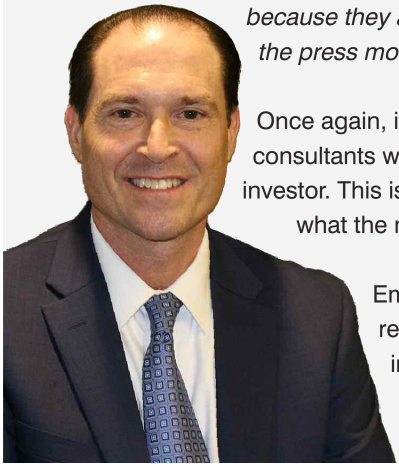
Ernest Jaffarian: CTAs are very adept at customizing the volatility return profile that an investor wants. On the *Efficient Access®* platform, you can assess a manager and target a specific volatility (within a range) and can customize a portfolio to an investor's specific objective without any borrowing.



Investors are playing a much bigger role in determining the profile they desire. Some like the highest possible volatility profile (the greatest degree of cash efficiency) and others have a board-driven volatility target that is likely lower. The beauty of managed futures is that it is possible to have a full range of volatility available.

Tom O'Donnell: *In addition to targeting different volatility profiles, investors have also shortened the time window for when they expect diversification to work. Investors' patience is changing. Alternatives that provide a positive return and zero or negative correlation over a five or ten-year period were in high demand.*

For many investors now, the discussion is, "What did you do in October? What did you do in February?", because they are meeting with their Board and investment committee frequently, or perhaps responding to the press more frequently.



Once again, it is important to have reasonable investment expectations. Investors, advisors and consultants write investment policies and guidelines, that's what we did when I was an institutional investor. This is related to the concept of stress testing an investor's portfolio. What the investor is seeking, what the manager is attempting to do, and what the manager actual does are intertwined.

Emil said it, institutional investors are looking to alternatives to provide a unique source of return, Alpha, and non-correlation. Managers who deliver alpha and diversification tend to be in high demand.

Jeff Malec: Again, Tom, allow me to come back to the question if you think there is a reason why hedge funds – which is a rather large umbrella – have generally underperformed?

Tom O'Donnell: I think we are in an environment now where the equity market is the only game in town. Investors need to generate returns and the equity market has been a great source.

Unfortunately, interest rates are at all-time lows, and this is really a pivotal moment for all investors, because for the past 30 years the 'safe investment', fixed income, has been a dependable source of returns and diversification. It was easier to rebalance their portfolios between equities and fixed income.

But now, the likelihood of experiencing negative returns in their fixed income holdings has increased and this coincides with the equity market experiencing the longest bull market in history. The historically dependable 60/40 portfolio is under the microscope. Equity market risk and interest rate risk are at the forefront of investors decision making. If your investment policy statement includes the phrase "achieve the best risk adjusted returns, while minimizing the risk of large losses", embracing the fact that markets move in two directions is essential.

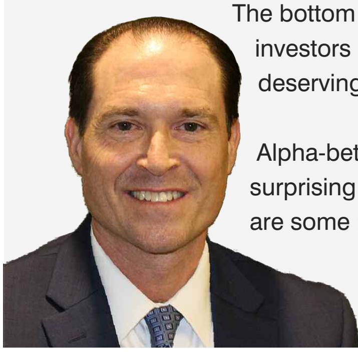
Identifying investment strategies that take advantage of markets moving in two directions, and have a history of delivering an attractive risk adjusted returns within the investor's time horizon, should be in high demand.

Jeff Malec: Maybe there are also too many hedge funds out there. I think it was Ray Dalio from Bridgewater who said there is 10,000 planes in the air, but there are only maybe 50 good pilots. So the whole hedge fund industry may be watered down basically.

Tom O'Donnell: Skill does vary, and there is a survival of the fittest element to the hedge fund manager population. However, investment strategies that produce the most attractive results should be capacity constrained. And when you consider the low correlations that exist among different types of hedge fund strategies, strategy diversification and manager diversification is attractive. Perhaps the 50 good pilots are garnering most of the attention, but if one assumes the investors have allocated to those 50 firms, then why aren't the investors happy with the results?

Studies show that using AUM as screening criteria doesn't help you identify the best hedge fund talent.

There are a lot of hardworking, deserving beneficiaries who are depending on these institutions to remain viable. Many of these beneficiaries also use a financial advisor to help them manage other portions of their savings. Low cost, long-only, beta-oriented investments have their place in a portfolio, but the risks associated with long-only investments need to be managed. Individual investors, and for that matter many institutional investors (*depending on their funding status*), do not have an infinite amount of time to recover from large losses.



The bottom line is that there is a lot of money out there that is at risk. Apart from having a great offense, investors should also think about having an effective defense. Profitable **risk mitigating strategies** play a deserving role in portfolio management.

Alpha-beta separation has also become a popular exercise among investors, and I suppose it's not surprising that some have suggested that trend following is beta as well. Perhaps some of it is, but there are some really good trend following strategies out there that investors would be hard pressed to replicate.

Jeff Malec: I think you are seeing that the investors think they can pull out the beta component of the trend following, which maybe they can a good portion of it. But interestingly, we highlighted some bank trend risk premia products on our blog this year and they have vastly underperformed the index. So to your point, not as easy as it looks.

To me, what Tom and his team at 3D Capital are offering is very interesting as it represents a shift of the traditional alternatives that mostly has been kind of a passive defense. Like, "I am going to give you defense, but it's passive, it's somewhere on the side, and it's going to work over the long-term."

I actually do see more and more that investors want **active defense.** They want it there when they need to count on it, and also, they don't want to pay for it for example by just buying puts.

OPALESQUE TV

DON'T MISS OUT

ACTION REQUIRED

Business decision makers LOVE online video because it gives them the most amount of information in the shortest amount of time.
– Bob Wies / President MV Digital

When done correctly, all you need is one video to build up highly targeted traffic for a really long time.
– Carey Lowe / Marketing Consultant

Video marketing is the most effective way for you to get someone's attention and engage them for a substantial period of time. Keeping someone engaged is the best and quickest way to gain their trust. Gaining trust is the only way to convert your audience into happy, long-term clients and customers.
– David Grimes / Marketing Manager

Video solidifies your online presence while building deep and meaningful relationships with your customers. It adds a personal touch to your brand while increasing your conversions ! Videos are now an expected component of any website.
– Lilach Bullock / Marketing Consultant – Forbes top 20 women power influencers

It's more effective:

Video attracts two to three times as many monthly visitors, doubles their time spent on the site and has a 157% increase in organic traffic from search engines like Google.
– Marketing Sherpa

And more *cost effective*:

Video promotion is 600% more effective than print and direct mail combined.
– Diode Digital

One minute of video is worth 1.8 million words.
– Forrester Research

Video content can increase the chances of front page Google ranking by 53 times
– Cisco

And did you know that:

Online video is shared 1200% more times than links and text combined.
– Simply Measured

75% of executives watch videos while working.
– Forbes

"The Opalesque videos are a clever solution to the persistent problem of getting to know managers' style and philosophy within a dizzyingly large universe of possibilities and with increasingly limited time. More managers would be wise to step out of their 20th century shells to embrace the new economy of communication technology to find more efficient ways to convey their story and message to existing and prospective investors."

Adam Choppin, Manager Research & Investment Strategy of FIS Group

Opalesque videos are regularly featured among the best in any top 10 or top 20 hedge fund / investor video ranking, such as this one which lists 4 Opalesque videos out of a total recommended of 19 videos.

Opalesque started shooting manager videos in 2009 - you will probably know that **Julian Robertson, Izzy Englander, Jim Chanos, Jeffrey Ubben, Danny Yong, Elena Ambrosiadou,** and **many other hedge fund legends** have produced videos with Opalesque. We have also produced videos for some of the **biggest institutions** as well, such as **Morgan Stanley, State Street Global Advisors, M&G Investments.**

Save up to 50% in travel costs by making your first meeting the second one

Have you ever spent time and money to take a trip to present your fund, only to hear, *"Thank you for coming to our office, and please keep sending me your reports …"?*

What if you had known before that the investor is looking for something else?

By sending their video to prospects **before the meeting,** the manager wins twice. Should the investor be looking for something else, the manager can focus his efforts on those investors who watched the video **and liked** what they saw.

In these cases, managers tell us that the first real meeting becomes more like a 2nd meeting (the 1st one being the video) as the groundwork has been laid and the meeting will be much more successful and achieve much more compared to a regular first meeting. By better **qualifying your leads**, you can basically halve your travel budget and raise more assets quicker.

Compliant

- Opalesque.TV videos are produced to comply with your regulatory requirements
- Allow for true reverse solicitation

You're in control

When you're doing a custom Opalesque.TV video, you have full control about any aspect of your message. This is not a given in any other regular media coverage.

A manager portrait on Opalesque.TV is generally designed to simulate a first time meeting with a prospective investor, meaning that questions like the following will be discussed:

- Please introduce yourself and your firm
- What is special about your strategy?
- How are you different from your competitors?
- What else is important regarding the asset class?
- Opportunities you focus on

Working with a trusted partner

Over 1.3 million people have watched one or more Opalesque.TV videos, which means that the people you may be targeting will already be familiar with Opalesque.TV videos.

Managers like **Julian Robertson, Izzy Englander, Jim Chanos, Jeffrey Ubben, Elena Ambrosiadou, Anthony Scaramucci,** and many others have done Opalesque videos, as well as institutions like **Morgan Stanley, State Street Global Advisors, M&G Investments.**

Broad distribution

You can either produce a private video with us, which will only be hosted on the non-public part of your website, or we can offer you the broadest possible multi-channel distribution on Opalesque.TV and our partners like Reuters and other leading platforms. Contact us to discuss your custom distribution package.

Managers have **quadrupled assets** thanks to our video ($700m to $2.4bn in 1 year) and also received a book contract or **invitation to speak at the World Economic Forum or at TED** through our video:

- View count: Over 1.5 million views (hundreds of thousands of people)
- Thousands of investors will view your presentations
- Longterm effect: Views do not drop significantly over time
- Without investing a single additional minute of your time - time required to record a video is approximately 90 minutes.

Costs

For a 10 minute video the all-inclusive package price is US$10,000 which includes: travel (Europe and NY tristate), full production at your office, multiple edits (cuts), provision of the final video file, and a global, multi channel distribution package. A 15 minute video is $15,000, so $1,000 will be billed for each additional 2.5 minute above 10 minutes. The client determines the final length of the video.

Links

Opalesque.TV video which got 104 views over 2016 Christmas:
http://www.opalesque.tv/hedge-fund-videos/patrick-stutz/

Opalesque.TV videos sorted by number of views:
http://www.opalesque.tv/most-viewed-hedge-fund-videos/

Opalesque.TV videos sorted by number of social media shares:
http://www.opalesque.tv/most-shared-hedge-fund-videos/

Contact

Matthias Knab
Founder
Opalesque Ltd.
www.opalesque.com
Email: knab@opalesque.com
Tel: +49-89-2351-3055
Mobile: +49-170-189-0077