2018 Annual Investment Forum

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Bob Cluck: Good morning and welcome to Canterbury's 10th annual investor conference. We decided to push the date out to the 3rd week of January so you could all settle in the New Year before heading out to yet another event after the Christmas holiday. Given the increase in attendance, I think that made sense. We actually have two individuals attending this morning that have been to all 9 conferences and are here for their 10th.

For those of you who were not in attendance our first year, the tone was a little different back in 2009. In fact, we named the conference "The 2008 Financial Storm". Over the course of 9 years, our titles give you a pretty clear description of where we were and at least, where we thought, we might be headed. Recovering and readjusting, uncovering opportunities, Is there Light at the end of the Tunnel? Global Uncertainty/Targeted Opportunities, and Resetting Expectations – as you can tell, not exactly "eye poppingly bullish". –We've gone title free the last 2 years, perhaps we could have been clever this year with: "who needs stocks and bonds when there's Bitcoin". I may live to regret I just said that.

We've tried to tailor these conferences on what's been relevant for the year ahead, both economically and politically, along with introducing interesting topics presented by distinguished speakers that are of the non-investment /political variety and this year will be no exception.

The economic and capital market mood captured in our conference titles over the years certainly would not lead you to conclude that Global Equities are up 240% since March of 2009, that global bonds are up 38%, and global inflation has been well below central bank targets.

From the March 2009 lows, the US stock market is up 295%. Non-US Equities including emerging markets are up 127%. Today, the world is in a global synchronies expansion; somewhat of a rare phenomenon historically, with global rates as low as they are, inflation below central bank targets, and Europe, China and Japan accelerating along with the US. As a result, investors risk appetites are increasing by the day. The fundamentals are real – the question for us all is valuation. Non-US Equities in developed countries, and developing markets came to life in 2017 propelled by strength in local currencies and improving fundamentals. While the S&P 500 was up 22% last year, EAFE (Europe, Australasia and Far East) was up 25% and the MSCI Emerging Market index was up 37%.

So the question on so many of our minds is: Is this Bull Market over, and even if it is, what are you going to do about it? The stock market is a discounting mechanism. The move last year is consistent with a global economy that is doing much better. Do prices today properly reflect fundamentals or are markets ahead of themselves and therefore fundamentals need to catch-up to avoid a market break.

Most of you have seen our Heat Map exhibit in our global positioning statement when your consultant has taken you through our capital markets outlook during a quarterly performance review. The four boxes that characterize environments of economic Panic, Contraction, Normal Growth and Manic Growth.

After 9 years we're still largely in the normal growth box and have not pushed into manic growth; typically characterized by stronger GDP above 4%, earnings exceeding optimistic forecasts, a steepening yield curve and investor psychology eager to purchase risky assets at any price. – Now, we may be entering this phase as we head into 2018. So we'll just see how this year unfolds.

If you assume the S&P 500 earns $150 this year after the new tax laws have been implemented, that would put the S&P 500 at roughly 18x, or an earnings yield of 6% - not cheap, but compared to a 10-year US Treasury of 2.5% not so bad..... There is a level at which bonds compete with stocks but, it would seem were a ways away from that. Two weeks ago, famed stock investor, Bill Miller stated higher yields could push investors more into equities for a so called "melt up".

I said earlier that global bonds are up over the last 9 years. Even with global synchronous growth last year, you made money in bonds. The Barclays Aggregate was up 3.4% - Investment grade corporates were up 6% - high yield 7-1/2%. Global Bonds had an outstanding year up over 8%. Spreads are tight, defaults are at historic lows, issuance has increased dramatically and loan covenants increasingly lighter. We know how this story ends; but when?

In general, Long/Short Equity, multi-strategy and credit hedge funds had solid years in 2017– as an asset class, hedge funds doubled bond returns – so this was a welcome reprieve after a number of challenging years.

Private Equity continues to perform well –but let's put some hard facts out on the table. Private equity globally is valued at approximately $5 Trillion. $706B of new capital was raised through Q3 2017. 2,000 funds are raising capital as I stand here this morning. The five largest funds raised $95B in the third quarter of 2017. There is close to $1 trillion in dry powder - $100B more than at the beginning of the year. As we have discussed with all of you, this is the time to be picky in selecting with whom you make 10 year commitments. Too many asset allocation decisions are being driven with simple arithmetic solving for 5%. If bonds are 3, equities 6 – how do you get to 5% real - Answer: Increase your Private Capital commitment. - If only it were that easy.

The laggards last year are the usual suspects: Natural Resources, commodities, MLPs and REITs. Should the global economy continue its synchronous expansion, inflation pick up, hard to imagine that natural resources and commodities won't have some life, especially if we have an inflation scare; which you're just beginning to hear coming out of several strategists. – Remember emerging markets two years ago – given up for dead.

The pendulum does swing back and forth. Inflation's lack of acceleration has even confounded the Federal Reserve, and Janet Yellen admits it has been stuck below 2% longer than she would have predicted.

As you look around the world, it's hard to make a case that anything on the planet is cheap – weather its stocks, bonds, real estate – maybe commodities – maybe natural resources. It is all about relative value. Remember, a 10-year treasury with a yield of 2.5% is selling at a PE ratio of 40x. A 10-year German Bond at 40%basis points has a PE equivalent of 250x.

Earlier I painted a relatively sanguine backdrop for investors as we start 2018. Let's go over a global check list:

1) Earnings Expectations – Positive
2) Valuations – Above average / not excessive/ 18x for the US / 16x for Non-US/ 12x for Emerging Markets – These are forward multiples – not trailing.
3) Yield Curve – positively sloped – but flattening
4) Global Growth – Positive and expanding
5) Inflation – not a problem… yet? Below Central Bank targets
6) Interest Rates – markets have discounted 3 - 4 rate hikes here in the US and have discounted the pivot from Quantitative Easing to Quantitative Tightening
7) There is less regulation in the banking system
8) We're experiencing the highest profit and free cash flow margins since 1952
9) Sentiment is not yet irrationally optimistic
10) We have lower corporate tax rates and greater economic certainty

So what could upset this goldilocks apple cart – well:

1) Central Banks have added 11 trillion to their balance sheets – is the great unwind going to come off without a hitch?
2) How do markets ultimately react to tighter monetary policy in Europe?
3) US Politics – November will be here in a flash – Greg Valiere, a past conference speaker, thinks it could be a blood bath for republicans
4) Wage/price inflation. Employment may overheat as we burn through "pent-up wage deflation" from the last recession.
5) Monetary accommodation is coming to an end
6) Moody's Covenant Quality Index is at 4.51, 1 basis point off its worst score reached in August 2015. In English, this means there is some really junky junk in the high yield markets.
7) The potential for an inverted yield curve
8) And of course, North Korea – Need I say more?

The last year or so, markets haven't been worried much – Remember 2011, 2012, how about the first 6 weeks of 2016 – that was the year that Jeff Gundlach put a picture of Pete Carrol and Janet Yellen up for who made the worst play of 2015 – You will recall, Janet Yellen raised rates for the first time in December of 2015.

Markets have viewed the glass as half-full for a while now – Volatility is sure to increase at some point – you just don't know when.

We're going to hear a number of experts weighing in on their views as we begin the day. The good news for me this morning, as usual, is I don't have to make any predictions – just set the stage.

This year we welcome back for the third time, Jim Paulsen. I really think the only reason Jim agrees so readily to pay us a visit is that he's headquartered in Minneapolis and this is January. My spies have told me that we shouldn't expect the same perma bull that we have come to expect – stay tuned.

I've had the pleasure of hearing Dr. Howard Federoff discuss the challenges facing us in healthcare both on the delivery and disease fronts several times and have always come away thoroughly impressed with his perspective and insights. Since healthcare makes up 1/5 of our economy, it only makes sense to introduce this topic at an investment conference.

As everyone in this room knows the debate between active and passive investing will never die. When active managers underperform, they'll argue for investor patience; – It's just a matter of time. The indexers argue, markets are efficient and that after fees, you can't beat the market. So we've decided to put three fund managers in the ring and let them duke it out. Chris Wallis – a truly great active manager. His small cap value strategy has doubled the benchmark since inception as many of you in the room know who utilize this fund. Also presenting is Michael Hunstad. Mike is Senior VP and director of quantitative research at Northern Trust. Also joining the panel is Paul Bouchey. Paul is CIO of Parametric's Portfolio Associates.

Our luncheon speaker this year is Paul Schulz. Paul is VP of Development at the California Community Foundation. Paul & his team have raised over $500mm in the last few years and Paul will discuss trends he sees in Philanthropy both here in Southern California as well as nationally.

Finally, to wrap the day, what would a conference be without a discussion on bonds, interest rates, credit and currencies?

We've assembled a fabulous panel to provide their insights to this sector. Timely, as the US is transitioning from quantitative easing to quantitative tightening and we begin the process of unwinding the massive asset purchases Central Banks around the world have put on their balance sheet since the financial crisis.

Jeff Aronson of Centerbridge Partners, John Fekete of Crescent Capital Group and Tad Rivelle of the TCW Group who co-manages the MET West Total Return Bond Fund.

Should be a great day.

We'll take a quick 30 minute break at 10:15 and then at 11:45 to let the staff prepare for lunch at 12:15.

Before I introduce Jim, I wanted to take a minute to thank all of you who are here today and to especially thank all the Canterbury clients who are in attendance and those who could not be here for their support. While this is our 10th investor conference, it is also the start of our 30th year in business.

What started as 4 individuals, 2 assistants, a fold out card table, an AST 286 Computer in December of 1988 and has grown to a 57 person organization with 15 partners and $17 billion under advisement.

This would not have happened without your support, your confidence, and most importantly, your trust– and for that we are truly grateful. Thank you.

At this time, it gives me great pleasure to introduce Jim Paulsen to the stage for his 3rd appearance. By way of background, Jim is Chief Investment Strategist at the Leuthold Group. He is nationally recognized for his views on the economy and frequently appears on CNBC and Bloomberg Television. He has been named a top economic forecaster by Business Week, and Money Magazine called his newsletter one of "101 Things Every Investor Should Know." Mr. Paulsen previously served as chief investment strategist at Wells Capital Management. Prior to that, he was senior managing director and chief investment strategist for Investors Management Group and also served as president of SCI Capital Management. He earned a B.S. and a Ph.D. in economics at Iowa State University.

Ladies and gentlemen, Jim Paulsen.....

Jim Paulsen: (problem with audio recording) ever in U.S. history and will probably surpass the old length by a few years. So ten years is the longest recovery. I think the odds favor that we go past that. Now, I hate a forecast like that, because we'll probably recess this year. But I'm going on the over, and I still think that's the case.

I do think, however, and with that I think the bull market will continue beyond this year. But I think it's going to be a heck of a gut check here this year for financial assets. Doesn't feel like it at the moment, but I think we're going to have a pretty good gut check on both interest rates or yields and on stock prices before the year is out. That's my guess.

And several things, and we'll visit through those. But the thing that probably sticks out the most to me as we start this year is optimism. And it only sticks out because who in the heck has seen this for ten years? I mean, this is the first time ever in this recovery where it's pretty blatantly obvious. It's obvious in the corporations, it's obvious among consumers, it's obvious among investors. Heck, it's even obvious among policy officials who finally have the guts to raise interest rates for the first time because they are confident in the future. And it's a wonderful deal, but I've got to tell you, I think that optimism is a signal of more difficult times, at least for a period here on Wall Street.

One of the founding foundations and persistent benefits of this bull has been climbing and chronic wall of worry. This is a bull market that went up for nine years without hardly anyone thinking it would go up. And now that most people think it will, I'm just worried about what that might mean. It's often true that when it gets good on Main Street, it goes tough on Wall. And a lot of time when it wasn't too good on Main, it was awful good on Wall. So I do think there is a challenge, but I think it's not going to be an ending challenge, I think it's just going to be a good gut check and probably a whale of a buying opportunity for yet another leg of the bull. So that's kind of where I'm going.

So now you guys can go, you know, restroom, go get a drink. Rehash.

Well, let's start with the economy here. I think there's a few issues. Can we grow? How fast can we grow? And Trump and the republicans now say we can do four, five, six percent growth. Do we have capacity to grow yet nine years into this recovery? And the biggest thing that has changed I think isn't that we've sped up growth; it's that we've broadened it out. And then lastly, and the big thing, is when is the next recession? And we'll talk a little bit about that again with recession risk. And then we'll turn a little bit to what I do think is going to be more of a challenge this year, and that's inflation. Which Bob kind of introduced here earlier that people were talking about. I am too.

So let's start out with growth. I think we are still stuck – and I've been talking about this chart for years – I think we're still stuck in slow growth mode in the United States, and really around the G7. And the reason to me is laid out by these charts. The chart on the left looks at the annual rate or growth recovery by recovery in the working-age population in the United States. That's just the raw, available supply of labor. We don't have any. And the chart on the right looks at how productive that labor is. And the problem that we've had in this recovery, and still have today, is you guys are old and you're lazy. And that's what's going on in America. We have working-age population growing three-quarters of one percent. Clearly lower than it's ever been in the postwar period. And of that working group, its productivity is off the charts on the low end. Just barely above one percent.

If you've got three-quarters percent raw resource growth and they're a little over one percent productive, how fast can you grow? Around two. How fast have we grown in this recovery? Around two.

Now we have gone – I think just posted the third quarter, back to back to back in a row where we've done three percent-plus in real GDP. That's a huge accomplishment when that's what you've got to work with. Okay? And I don't think we're going to do much better than that. I think we're maxing out where we can grow on a sustained basis. I'm not saying you can't have a quarter better than that, but I'm saying sustainable growth.

The reason, there's no hope that we're going to lift this chart on the left. That's going to take immigration. And the longer it takes – you guys are aging right in front of my eyes. So this is getting worse as we're speaking unless we do something. But the hope for the rest of this recovery would be that productivity can be lifted on the right-hand chart. Maybe it has a little bit. It might be up around two percent right now, which is why we're growing at three. But I don't think it's going to go a lot higher than that. And the reason is because we haven't invested in productivity.

This is the level of public sector investment as a percent of GDP. It just went to a postwar low, just a little over three percent. We started this recovery, we were given four-and-a-half percent public investment. And that's just dropped off the map. That's not what leads to a productivity bubble, if you will. There's been some private sector investment. That's the hope. Capital goods orders have started to pick up here in the last 18 months. But that generally takes some time to fill through productivity. Maybe it hits later in the recovery, but I don't think it's going to be this year or next year given what support we've had.

So I do think we've got an undertow of like two-and-a-half percent growth, maybe doing three. That's not bad, but I don't buy the idea that we're going to do four or five on a sustained basis overall.

The big thing that's really happened in the last couple of years is not that the world growth rate has sped up. It really hasn't. Okay? We've grown a little bit, parts of the world have grown. But what's really happened is the recovery has broadened out. And that's been hugely important. We've spent most of this recovery with the United States the only thing growing in the world. And within the United States it was mostly an upper-crust recovery that never reached middle America or Main Street. That's changed. This thing has now broadened out globally. As Bob said, we're in a synchronized global expansion for the first time ever, where everyone is simultaneously growing. And, more importantly really in some respects, this thing has finally reached Main Street America. We're back to four percent unemployment and with that has come a big rise in real median incomes on Main Street.

We spent the whole first seven years of this recovery where Main Street did not participate at all. We had a profit recovery, an upper-crust recovery, and no recovery at Main Street. Now in the last maybe two years we've had a surge in median incomes. And when the '17 comes out it will be another all-time record high. That's why consumer confidence is up, that's why consumer spending has been stronger, and that's why this is a much more supportable recover than it's maybe ever been. It's firing on more cylinders than ever before. Rather than getting more fragile, it's getting in some sense more robust as a result of that.

It's also happened globally, as I mentioned. This is the economic surprise index for the whole globe. So every month it looks at all the data releases from China, Europe, here, and it compares them to how did they come out relative to what was expected. And if it came out better than expected, that chart goes up. If they come out worse than expected, it goes down. If you look at this, this is how we spent this recovery, with basically economic surprises AWOL throughout the entire recovery. Because there wasn't much of the world doing much. Europe, with fiscal austerity went back to recession, Japan has been scratching its head for 20 years trying to figure out what they should do. China decided to slow itself down, with success. You know, we were it. But, boy, we got them all cranking now. This is a new world recovery operating in this world as a CEO for example than if you're operating in this world looking at your markets. And you want to know why confidence is up? Because that's what they're looking at now. A much better situation.

I don't think it's going to go away. I think this recovery now is broadening, staying in. It's also we're passing the baton from U.S. leadership to foreign leadership. We're no longer going to lead the rest of this recovery. We're going to participate, but we're not going to be the leader. Because these recoveries basically that have emerged, basically they were in recession off and on during this recovery. They're in an earlier recovery mode again. They have more room to recover than the United States does. But I think it's a decent thing.

The question is – and what this has led to, just real quickly, is finally a confidence boost. We spent the entire recovery, both consumer and business down here in conference levels. And now just since late '16 we've shot up to really postwar high levels across the board. I think that reflects the broadness reaching all parts of the world and all parts of the economy that's created this situation.

I don't really think this is that much to do with Trump or the election. Maybe somewhat with rolling back the regulatory train. But I think it has more to do with the broadening out of economic activity that's occurred. It was coming anyway.

Now, the question is what I find interesting too is there's still quite a bit of capacity to grow here, which is exciting. You think we've been nine years into a recovery, we would have used up every lever we basically had to grow. We're at full employment, there's not much more we can do. But because of the weirdness of this recovery, a very sluggish-growing deal where we didn't use a lot of the levers we normally use – we have not used much leverage in this recovery. We still could. Balance sheets are in really good shape, they're liquid. And if we start using a little bit of that, that could really make this growth rate feel better too. We've done a really good number on restoring household sector. We came into this recovery with the household facing one of the highest unemployment rates in postwar history, with postwar-low confidence levels, with a one-third drop in their net worth, with their housing prices down, with no job prospects. I mean, it was nasty. That's all been reversed at this point.

We also have never really had an accurate nationwide housing cycle or aggregate cap spending cycle. We haven't really had where the global growth rate was growing along with us. So there's a lot of aspects that are just emerging I think that can help this recovery to continue.

Just show you a couple of these. Look at just real quick a balance sheet. Normally nine years into a recovery – heck, four years into a recovery – we would have wrecked our balance sheets by now. Normally you guys behave very badly very quickly in a recovery. This time you've really been on your best behavior.

So if I look at household debt to total assets, this is as low today as it first was in the 1980s. Corporate debt as a percent of profits is as low today as it first was in the 1960s. Liquidity ratios in both sectors are amazingly strong yet. That service ratios with low interest rates are still very low. It's as though we are coming out of recession from a balance sheet standpoint rather than being nine years in. Now, there's certainly pockets of problems here or there, but aggregately there's not a lot.

I would like to talk about one aspect coming out of the consumer household area that is starting to play a very dominant role, and will for years, but also in the balance of this recovery. And that's a group called the millennials.

Now, I've got three of these animals myself. So I know a little bit about this set. And I keep telling them that baby boomers are where it's at, but they keep telling me that there's a new sheriff in town, the millennials.

Now, the story on the millennials throughout this recovery has been the same almost throughout. This is a bunch of young people that are indebted up to their eyeballs with student loan debt. They have absolutely no job prospects, and they're all living in their parents' basements. That's the end of the story.

Then you look at these charts, and it couldn't be more different, what flies off that page. It might have been that way. You can see in much of this recovery that story held a lot of water. Okay? But it hasn't in the last 18 to 24 months. This group has experienced the fastest rate of job creation of any group of the population by a wide margin over the last 12 to 24 months. And if you ask them how they're feeling about it, they feel pretty darn good. If I put baby boomer confidence up, we're down here. It could be that arthritic knee, I don't know. But we don't feel near as good as these young bucks. Okay?

And why this is so important is they have had a mighty big impact on this recovery to begin with. This is the only recover in postwar history where we have had a falling household formation rate going on throughout the recovery. And it's because of this group. This group has got this weird cultural thing where they've delayed marriage and household formation. You know, baby boomers got out, found a mate, got on with it, man. These guys, I don't know, they're having a little trouble. I don't know if they swiped left when they should have swiped right, I don't know what it is. But a big delay. Okay? So household formation fell.

But here's the deal. They're finally getting close to 30 years of age. And as they do, guess what? They're finally starting to link up and they're going in and forming new households. And lo and behold, household formation has now been rising over the last 18 months roughly on a regular basis, adding an element that was totally missing.

And not only that, but this group is becoming the largest part of the population and will be for the next several years. And they're not only just forming households, they're now going to go right into peak spending years right after that. This is going to be a major asset for the U.S. economy for the next several years. And they're finally economically getting their act together, if you will. So I do think we are going to hear more about this in this recovery, but more about it for the next few recoveries with this group.

One last thing is I think we're starting to be led more by capital spending or business spending than consumer spending. There's always been the capability for corporations to spend and lead the economy. They've had great profitability. They've had incredible liquidity, reserve. They've just never had the need to do it. Because when they looked around the globe, none of their markets were growing. Why would they spend to expand operations? Not only that, but resource cost, capital and labor costs, weren't a pressure or rising, so there was no need to do capital investment to promote productivity, to hold costs down, because cost pressures weren't an issue. Today it couldn't be more different. Today they see expanding markets abroad and within the United States in a way they didn't earlier. And they're starting to see resource costs, both wages and interest rates, labor and capital costs rise, which means there's a need to provide productivity to hold those costs down. And they still have the capability to do it. The ratio of liquidity or cashflow to cap spending still remains close to postwar highs. And I think you're starting to see this shift. I'm not saying it's going to blow through the roof, but I think it's going to lead the economy over the balance of this recovery. It's already happening. We've had steady gains in capital good orders in the last 18 months. If you look in the stock market, this stock market, as good as it is this year, really since last year, is not what led your father's stock market earlier in this recovery. This year it's being led by stuff that is so foreign from what was leading it. It was led by consumer steady Eddies and bond surrogates and dividend aristocrats and steady Eddie growth. This year it's like industrial materials, energy stocks, new era tech as well, all of which are in capital goods sector. And that's what's already starting to lead. You're starting to see emerging markets more responsive to that as well. So I think that's going to be another theme that's going to ride through this marketplace.

Real quick on recession risk. I've kind of covered this already. But I think that of all the things I look at, leading indicators are going up around the globe, economic policies in much of the world are still accommodative. I know we're thinking we're going to quantitative tightening, but United States still has a negative real funds rate that's 70 basis points below the rate of inflation. We've still got massive, $4 trillion balance sheet hanging out there. And then we've just added a fiscal stimulus on a fully-employed economy. That's a lot of stimulus. And then it even gets more stimulating when you go to see DRAGE or ABBE or the PBOC in China. So I don't think that's changed.

I think the biggest one is right here. There just simply is not enough bad behavior that we need to purge. We are still on our best economic behavior. Now, this year I can start to see the seeds, as the smile widens with optimism, people are thinking about doing bad stuff from an economic standpoint that's going to put you out over your skis. But it's just beginning. You will blow us up. I know you will. I have confidence. It's in your DNA. But I think it's going to take you a few more years is my point. So I do think the recession is a way off. And the yield curve is not inverted, nor do I think it's going to this year. If the ten-year yield does not go up this year, the Fed is going to stop raising the short yield. If it goes up, the Fed will keep raising, but they'll both go up. So I think it's not going to be an aversion thing going on overall.

This is big though. Because if you think a recession is inside two years or if you think it's three years or more, I've got a very different investment recommendation for you. So where you come down on this issue is probably the biggest decision you have to make. Okay? And it certainly is ours, but it's certainly yours as well. I'm betting on the over, but I'm also betting on the Vikings. So take that with a grain of salt.

All right, let's turn a little bit to inflation. Because I do think this is the risk coming. And I am not suggesting at all that we have a runaway inflation problem. This is not the 1970s or anything close to that. We've got too much deflationary force in the world. We've got new era tech and things that will keep that down. But here is the deal; we have just given birth, a 25-year, quarter century birth, if not longer, to a generation of players in the investment markets and the business that basically have never, ever seen any inflation to speak of. And I've got to tell you, if we were to get inflation above three percent, it would be shocking to most of these young buck millennials for example. What is that?

We certainly don't have markets priced for that. You don't have a two-and-a-half percent treasury priced for three-something inflation on a sustained basis for example. And I think that's what we're going to get. We're going to move the inflation indicators up into the threes, and it's going to be an adjustment for Wall Street, among business as well to that assessment. It doesn't mean runaway, out of control, but that's a big sea change from where we are.

Clearly since we've hit sic percent unemployment and then gone to five and now four, and this year headed to three, there has definitely been a Phillips curve impact on the jobs market. People say the Phillips curve is dead. This chart begs to say otherwise. We were running two or less and now we're running two-and-a-half or more. This year I think we're going to break three, and as we go into the three handle.

If I look at what's happening on the chart on the left with producer and consumer inflation, we've gone from consumer infuriation to zero to over two percent. Two years we've reduced our inflation from minus four to plus four in two years. WE now have low stage producer prices growing faster than high stage consumer prices, putting upward pressure on the pricing structure which wasn't there earlier.

And this is a new series put out by the New York Fed that incorporates both price and non-price variables in the inflation (*missing audio*), and it has been steadily rising now up over three percent. I want you to get a sense that this is beyond the jobs market or wages. You are seeing a sea change in inflation pressure in many areas. If I look at the chart on the left, this is the industrial commodity price index. That's a sea change from what it was doing to what it's now doing.

If I look at ten-year embedded inflation expectations in the ten-year tip, just this morning this went to 2.7 percent. It is not at a three-and-a-half year high. The highest level of inflation expectations in the bond market in three-and-a-half years, here. If I go to West Texas crude, it's 65 almost this morning. That's already at a three-year high. Brent just went to 70.

And then far right. If I take the surveys from ISM manufacturing and ISM service sector surveys on prices and the economy, both service officials and manufacturing officials say that pricing pressures are quite high, above 60. Some of the highest levels of this entire recovery. There's a lot of inflation evidence. It's just that it's all low, like everything else in this recovery.

Wage inflation has gone from two to two-and-a-half. And it seems like, well, that's not a problem. But that's a 25 percent increase in the rate of wage inflation that we just experienced while everyone is yawning. So my point is, I think there's quite a bit of evidence growing that the sand under your feat is changing, at least enough to change ten-year bond yields and also to challenge price earnings (*missing audio*) levels enough to do that.

Might also (*missing audio*) how tight labor markets are not just here, but globally. The blue line on this chart on the left is the G7 unemployment rate. A lot of that is the U.S., but not only the U.S. Much of the G7 world is pretty tight, as you can see with unemployment. But what really shocks me is the dotted line is the unemployment rate in the OECD countries. And that's 40 countries around the world. And they're getting pretty tight in their labor markets as well.

So I think we're going to see inflation pressures building not only in the United States, but globally at the same time. You're talking about a synchronized recovery, we're going to have a synchronized pricing recovery as well. We've got right now of those 40 OECD countries, two-thirds of them have experienced year-on-year accelerations in core inflation right now. Highest level of the recovery. So I do think it's kind of shifting under our feet.

Let's turn – tax cut, that's old news. Let's turn to the markets. Let me give myself enough time to get through some of these markets.

And we'll start with the dollar. For the most part in the last few years, everyone has thought that the dollar is going to keep going up. And they're thinking the dollar is going to go up because the Fed is going to raise interest rates. And if they raise interest rates, certainly that would track foreign capital to dollars. But the reality is I have been thinking the dollar is going to go down because I think the Fed is going to raise interest rates. So somebody is going to be wrong on that case.

This is that chart. The blue line is the trade-weighted U.S. dollar. And actually right now if I update this chart, it's down to just about 90. It just broke to a new three-year low. A lot of things are breaking to three-year you-know-what's, including the dollar here where we sit. And what I put on top of there in the brown dotted is the Fed funds interest rate. Let's look at this relationship that everyone thinks they know what it is. Every day you hear the Wall Street Journal say if the rates go up, the dollar goes up.

Here's the situation. If I go back to the early seventies, Fed funds rates soared and the dollar collapsed. Late seventies, the funds rates soared and the dollar collapsed. Mid-eighties, the funds rate went up, the dollar collapsed. Mid-nineties, funds rate went up, the dollar came down. Mid-2000s, the funds rate went up and the dollar came down. I see a relationship. But it's not the one I hear about on CNBC every day; it's exactly the opposite of that.

If you think the Fed is going to keep raising the funds rate, you should definitely think the dollar is going to keep weakening. And I think both is going to occur. I think we're going to see back into the low eighties on this trade weighted dollar index, which probably even could put a shocking euro level up around 130 or something, or in the high twenties. It's already 122 and a fraction this morning. So why is this? If rates went up and that's all there was, it would definitely raise the value of the dollar. But it isn't so much about rates going up as it is about why rates are going up. And the why is because of inflation. Every time the Fed raises rates, it's because there's concern about inflation. And inflation destroys the value of the dollar. It just erodes the real competitive value of the dollar. And they are raising rates today why? Because they are concerned about inflation. So is the bond market with three year high inflation expectations. And that's what's driving the dollar down.

That shows up here. Solid line just in this recovery. The blue line here is the U.S. trade weighted dollar index. And again, as I said, it's come down to about right here, at 90 right now. And the dotted line is that embedded ten-year inflation expectation in the bond market on an inverted scale over here. So it's been climbing here. And it's now, as I said, 207 this morning. And it's been down about here coming down.

If you go back to '14, the dollar soared in 2014. But it wasn't because the Fed lifted rates. The Fed didn't do anything with interest rates in '14. It started because inflation expectations went from 2.3 percent down to 1.2 percent. And when inflation went down, dollar went up. And now that inflation expectations are coming up, the dollar is coming back down.

I think if wage inflation goes over three and the CPI goes up towards three, we're going to see inflation expectations in the bond market head down here to like 2.4 percent again, keeping downward pressure on the dollar.

Crude oil, 65 bucks or there about right now. It was 42 in the summer. There's a lot of powerful energy coming through the CPI in the next several months just off energy movement alone. So I do think there will be some pressure there.

What I did in this chart just to show you that the commodity prices are tied to the hip with the dollar. In this chart the blue line is the trade weighted dollar index on an inverted scale. So you can see with the blue line going up, that means the dollar is weakening. And the dotted line here is commodity prices. If the dollar is going down, commodities are going up. And it's already starting to happen. Commodities I think make a really good case for this year or for the next couple of years in a portfolio if you can find a good way to do it, whether it's with an ETF or some diversification or commodity stocks or something. I think real assets have a play here that they maybe haven't more recently.

So then let's turn to the stock and bond markets on this basis. Now don't get me wrong – I'll talk about this in a minute – I'm thinking inflation, wages, CPI both go above three percent. PPI is already over four. And I think core inflation heads towards three percent. And those aren't runaway. I'm not talking four or five percent inflation, six, seven. I'm talking mid-threes to four max. But it's enough to create some real havoc on mindsets on Wall Street. And that's what I'm thinking about over a period of time.

For Wall Street as a whole of stocks and bones, I think the biggest thing is we definitely have moved from slack to tightness. The promise of this bull up until about 18 months ago was you could grow the economy as much as you possibly could do it, and you wouldn't aggravate inflation or interest rate pressures at all. Because there was so much slack, all growth did was reemploy unemployed resources without pressuring anything else. That's a great gig; grow without any negative consequence for the financial markets. That's what we did. But now we don't any longer have that gig. Because now growth still does good things. It raises earnings, but it also raises pressures. And this is a new list of issues that we are reading more about every day that we are now facing. Most of these issues didn't exist if you go back two years ago. Now they do. And they're going to get more intense I think as we go along.

To show you the dichotomy between Wall Street and Main Street – and I talked about this earlier just a bit. But there's always kind of a conflict between Wall Street and Main Street. A lot of media hashing between them darn Wall Street people and why are they doing so good when everybody on the street is not. And my response to that, it's absolutely true. Normally when Wall Street is doing great, Main Street stinks. And when Main Street finally gets going good, Wall Street suffers. They both do good over time. They just don't do good together very often. They just don't play in the same sandbox well. Over time they both benefit. They just don't do it at the same time.

So I think as we see that – we can see it up here. For stock returns since 1950 on this left chart, if I look at the highest unemployment quartiles and look at what stocks annualize from high unemployment rates, they do really well. When Main Street sinks, Wall Street is doing great. The media loves those stories.

But the flip side of that is when you get the lowest quartile unemployment rates, Wall Street returns are a third of what they were earlier. And from a 4.1 percent unemployment rate or less, they are half of even that. And that's where we are today. If I adjust unemployment rates for valuation as well, multiples, it's even worse from these quartiles.

So I don't think the bull is over, but there is no way this bull on financial markets is going to be near as good as it's already been or even close. It's very much reduced. And certainly what's happened of late is probably an overstatement by a long shot of what we're headed into in the balance overall.

If I look at the bond market charts for these same things, that's what they look like. Same kind of – bond market does not like full employment. You know? Over time they're both going to come out. Consumers are back doing well again, and Wall Street is too. But they just don't do it at the same time. And I think we are headed into the more difficult period for Main. And in fact, the elation on Main means probably tougher on Wall. At least for a period.

If we look at bonds real quick, this is a construct I've used for years, like everything else, with mixed success over time. But I'm looking at the ten-year yield here less the core consumer price inflation rate. So it's like the real ten-year yield. And I'm doing that only to look at valuation of yields. So yields when they are in equilibrium trade about two-and-a-half percent above core. If they are cheap, they're priced higher. If they're expensive, they're priced lower. Today we are 70 basis points over core. We are fairly expensive. We're not as expensive as we've been, but we're pretty expensive. And the problem, I don't think we're going to go back to two-and-a-half above core. But we're probably going to go back to one-and-a-half above core or something. If inflation comes back, the bond market is not only going to raise yields to reflect that, it's going to raise yields even more to put in a bigger buffer for something that's starting to emerge. So the bone market has more risk than just the rate of inflation going up, it has the risk of rate of inflation going up and putting a buffer for inflation back into the bond yield. And I think we're going to see a little bit of both of that.

So ultimately if you think about core inflation going somewhere into the threes – three, three-and-a-half – and maybe you get a one-and-a-half percent buffer, you're talking about yields somewhere in the fours to five at the peak of this recovery probably. And that's a double from where we are on the ten-year. And that's painful on an eight duration security if you do that (*missing audio*). That's not all this year. I think this year we might see yields get up to the three-and-a-quarter, maybe briefly three-and-a-half, something like that. But breach three enough to capture one's attention and to feel scared. I think there will be more of a buying opportunity in the short run at that point than anything else. But between that's pretty painful.

So I do think you want to focus on putting yourself in your bond portfolio – you know, minimize your exposure to it. Also minimize your bond-like surrogates and stock portfolio for right now. And put some kind of yield buffer in there, whether it's credit or structure.

I agree with Bob that spreads are tight on credit for example. If I look at investment grade credit, they're very tight. And they certainly are on junk. But they could get tighter. This is Baa spreads that are right here. There's nothing to say they couldn't go down forwards one if the recovery continues. And junk, maybe it could go down further too. We only have data back to the nineties. It goes back to about here. We don't know what junk looked like back here. So I think both could tighten a little more. Although the risk of staying in those things is certainly more pronounced.

So one last comment on bonds real quick. One thing that hits me recently with bonds is why do we hold them right now? Fundamentally you've got something – I guess it is now

260-something. But 250 bond with an inflation rate that's just about there and headed higher, you know, a wage inflation rate that's higher than that and a GDP growth rate that's higher than that, they make absolutely – or at least they make the least fundamental sense they've made for almost ever. And why would you certainly buy foreign bonds or something or negative yields. In other words, they've lost their fundamental sense. And yet we still own a gob of them. We all do. And we only do for one reason; because that's what we've always done. I own bonds, I don't even know why I have them. But I do know that if Bob or anybody else recommended to you to sell all your bonds, he'd probably get arrested for imprudence and not doing his fiduciary responsibility or whatever else. But truth of the matter is fundamentally they don't make a lot of sense right now. They might if they get repriced again, but right now it's tough. Unless we go right to a Great Depression again, it's difficult. So I certainly would minimize my long-term parameter exposure there overall.

And let's finish up then on stocks. The first point in want to make on the stock market. There's been a lot of thought throughout this bull that this has just been a sugar high bull, that it just went up because the Fed did these ridiculous things, just put so much liquidity out there and we took rates to negative. And of course rates went up; they had to on that kind of sugar high.

My point is this has been a very fundamentally-based rise in the stock market not just because of excess share. This chart overlays the stock market. The S&P500 is the blue line. And the dotted line is the fundamental indicator of the economy that goes up when the economy does better fundamentally, and goes down when it doesn't. Just a ratio of industrial prices to unemployment claims.

And yes, the stocks have gone up a lot, but so have a lot of the fundamentals of the economy. WE have had amazing recovery of profits, amazing recovery in incomes, amazing recovery in the household net worth, amazing recovery in jobs, amazing recovery in unemployment, amazing recovery in balance sheets. I could go on. There's a lot of reasons why the stock markets should have done this fundamentally.

My point about that is we are going to take the sugar away. We are in the process of doing that. And it will have its impact at the margin. But I don't think it means we're going to just completely unravel the sugar high. Because there's a lot of fundamental improvement under that that won't touch. I do think there's greater stability underneath this thing as far as how far it could fall and stay, that people might think in that regard.

That said, the one problem the sock market does not have at this moment is price momentum; it's got it in spades. And I cannot bring myself to stand in front of that train and say today is the day to sell. But I can say it's making me awful nervous and you might want to start thinking about it and maybe make sure you get out of the way of the train if you're wrong.

I think there's a growing list of challenges in the short term for the stock market. And one of them is I think we're going to lose the element of surprise. And what I mean by that is one of the great things that's pushed this market higher over the last couple of years has been that expectations for the economy were pretty low and every day we found out the economy was doing better than we though. Economic surprises kept going up. Every day they turned out better than we thought. And if they do, then we have to readjust our view on how the economy is doing. It sort of impresses us. And when it impresses us, we have to readjust our valuation of socks. So every day there's a positive surprise on the economy that we weren't expecting. We have to adjust earnings estimates and economic growth and adjust our value we're willing to pay. And the element of surprise has been a huge piece of this big rally we've had.

But here's the problem; they're not going to get any higher than they already are. We just hit 80 a couple of weeks ago, and it does not get any higher. We don't get more surprise than what we've already had. So here's the deal; we can continue to have a wonderful economy, wonderful earnings, wonderful synchronized recovery. But now everyone knows that and expects it. And if it happens, it will no longer impress, surprise, or create a need to change the value of equities. It's already embedded in there. So I'm not saying that reports get bad, I'm just saying that they won't any longer have the impact that they've had over the last year. You can kind of see that here. I looked at what stocks do here over the next six months, four and six month annualized returns from every level of this surprise index. And usually they do pretty well, except when you get really high, above 60, above 70. As I said, we were above 80. We're now at 67. Returns really fall off. In part because when you're up this high, they're likely to come down as well.

I have one indicator, this one, and I won't go into explaining it. But it's telling me – the brown line here is that economic surprise index. It's telling me in six months this surprise index will be close to zero by summer. That economic surprises are not only going to not surprise, but worsen a little bit over the next six months. So we'll see. I think that element of surprise is not going to be near as positive.

The second one is we've lost the wall of worry, which I've talked about. There's a lot of indicators that show this. This is a Conference Board survey, the percent expecting rising equity prices less falling. Here's how we spent this entire bull market, right here. All of the sudden just in November '16 right here, just really in the last year. Wow. Totally different mindset facing this market than we've had in the entire time. And it's not a good one in my book. This has been a wonderful thing for the sustainability of this market. It is very difficult for the bear to bite when all the players in the market are fully prepared for the bear to bite. There is nothing to bite. Make sure you're not overexposed, you're not too aggressive with equities, you're not in the overly-aggressive equities. What the heck can the bear bite to take us down?

One of the incredible characteristics of this bull, it's been one of the strongest bulls in our history. But until recently it was led almost entirely by the most defensive stocks you can find. It was a bull that was led by bears. It was led by bond surrogates, dividend aristocrats, steady Eddie consumer staple stocks. All the stuff you would buy if you thought the world was going to go to heck and you wanted to be really careful. So it was a careful bull. And that reflects the fact that no one thought it was going to last and everyone thought it would end any day. They don't think that anymore. Now there is something for the bull to bite as people get out over their skis. And we haven't had that situation before as the wall of worry goes away.

How about bond yields finally taking a bite out of stocks? What level is that? A lot of people think it's going to take a lot more. Three, four percent. But this is one model that says it might already be biting.

This is the ten-year bond yield since 1980. And ten-year bond yields have been in a remarkably stable 38-year trend. That's going to come to an end at some point, but it's had remarkable consoling properties, this trend. It has stayed within one standard deviation of its trend almost 70 percent of the time, 72 percent of the time over this period. When it's been between these two dotted lines, stocks have returned to about ten percent per annum. That's about what they've done on average.

In the roughly 13, 14 percent of the time it's been below trend, stocks have returned to about 14-and-a-half percent per annum. And in the 12-and-a-half percent of the time it's been above trend, stocks have returned 2.7 percent in the next 12 months. And not only that, when yields have been above this upper trend, stocks have fallen in the next 12 months 43 percent of the time versus only going down 19 percent of the time all the rest of the time. Okay?

So we just surpassed the upper band, which is 2.44 percent, a couple of weeks ago. I don't know, it's just another indicator that says maybe bond yields bite sooner than people think is what I'm getting at.

And I think what's more impressive than looking at the ten-year – we haven't had a lot of movement in the ten-year. But what has been lost in that because we all tend to watch the ten-year – I do too – is we've had a massive move in cash to seven years, cash to five-year yields that no one is really thinking has been anything. But it's been huge. Huge upward movements in those yields during the last 12 to 18 months while everyone is focused on how flat the ten-year has been. So there is yield pressure already on this market going on.

And we're losing the juice. No one likes to lose the juice. And what I'm talking about is the financial liquidity. This chart, the dotted line is the annual rate of growth in the U.S. money supply. And the solid line, the blue line there is the annual growth in nominal GDP. And in this recovery we have grown the money supply far faster almost all the time than what has been used to finance growth in the economy. And that excess money supply that's not being used by the economy goes right through the financial markets. Right through stocks and bonds. And we're now posting our third quarter in a row where there has been a contraction in financial liquidity going on for the first time. So that's a change too. And it does affect returns. Stock returns since '59 when there's been falling financial liquidity are b a third of what they are when there's expanding financial liquidity overall.

And then the question we're into right now as we watch this year every day when you come in, is how long will good news be considered good for stocks? Every day we get a good report in the economy right now that causes us to buy stocks. But at what point does that good news become perceived as bad? And what I'm talking about, good report now means we're going to review up our earnings estimates. But eventually that same good report might cause us to revise up our inflation estimates and our interest rate estimates, which could be a bad thing for stocks. What point does good news become bad?

There's a couple of things I'm watching for that. One is I'm watching the earnings yield buffer, stock yield compared to the bond yield. It's still a pretty wide buffer. And that gives you room for stocks to adjust even with good news. Even if rates have to come up some, there's still a buffer against that. I don't think that's going to totally go to a discount, but as it narrows – and it's starting to – I get more concerned about the ability of stocks to withstand good news.

The biggest one is this one. And this is a little confusing, so bear with me on this chart on the left. This is the correlation since 1999 on the trailing 52-week period between changes in the stock market and changes in bond yields. Now, what's been the case most of the time over the last 20 years is that when bond yields go up, stocks go up, oddly. It seems like it should be the other way around. But the reason for that is because we've been so concerned about depression, deflation, recession, that if rates go up, it just means oh, good, the news is good enough to push rates up. That means we're further away from deflation and depression, so stocks go up with it. And if rates go down it means, oh boy, things are weakening, we're headed to deflation, so stocks go down as well.

This positive correlation reflects a mindset on Wall Street that's worried more about deflation than inflation. If I go back to the 1970s, even '80s, this was negative most of the time. Because the market mostly was worried about inflation most of the time. And if rates went up, it meant oh, inflation is coming. So (*missing audio*) came down. But even since the 1999, this thing has gone negative three times. That is the market has become more worried about inflation briefly. Okay? And every time that's happened, stock markets wither suffered a bear market or three almost back to back to back ten percent corrections. It's still positive. But this can move very fast. And I'm keeping an eye on this. If this breaks zero, I'm going to get more bearish, at least for correction mode on stocks. It's not there yet.

I've got one other thing I'm watching too, but we're running out of time on that. It's the best one, but as Bob said, you've got to pay for that stuff, you know, is what I'm saying. So, oops, sorry.

Well, let me skip over this too. Let me just comment on this. I commented a little earlier. I just want to reinforce this again, how much the market is on a cusp of being eye-catching.

So as I said, the ten-year yield is at 261. It's right on the cusp of breaking to a three-year high. Ten-year inflation expectations just broke to a three-year high. The dollar just broke to a three-year low. West Texas intermediate broke to a three-year high. Commodity prices just broke to a three-year high. There's a lot of stuff going on that could change how people feel about inflation versus growth that's starting to break down. And you're going to read more about it. If the bond yield goes above 262 and closes, you'll read a lot about that for example. But I do think that's changing out.

I'll finish up with this. What do you do with all this stuff? And I would say that up until recently the character of the economic recovery has been disinflation, falling yields, fed accommodation, and fear. And if that's the character, this is what leads. If you're scared, you're going to buy just American stocks, you're going to stick with large, well-known companies, and you're going to buy steady Eddie consumer and bond surrogates. And that's what dominated the bull.

But what's happened in the last year or so is we now have this becoming more and more the character of the recovery. Inflationary rising yield trend for sure, fed tightening and confidence. And we're starting to see new leadership in the stock market as a result. We're starting to see foreign stocks, I think we'll see small and mid do better. We're starting to see capital goods industrials leading overall. I think this is more times than not the new leadership. Not all the time, but more times than not.

And one area that I really focus on is capital goods sectors. I'm impressed by each one of these benefits from a capital goods and business investment spending-led recovery. But they all have such different fundamentals or characterizations. You can have a very diverse portfolio that's capital-gods oriented. Everything from the sexy (*missing audio*)of tech to the anti-tech play, which is out of favor, energy. And then inflation play and (*missing audio*), all wrapped up in something it benefits from the economy switching from consumer to capital goods.

I would also just show you a few things of how this shift – this is a commodity price index, the dotted line, with the relative price of emerging market stocks. And you can see as commodity prices turn up, you see emerging stocks doing better. You see the relative price here of small cap stocks in the blue to PPI CPI ratio. As inflation picks up, small caps do better. You see a relation between industrial and consumer stocks and the CPI inflation rate very strongly related. Disinflation benefits in consumer, reinflation benefits industrials. What I'm trying to bring out is I think there's really pretty new leadership in the balance of this recovery. It's going to be a completely different character than what we've had.

So I will stop here but just say this. Some of the things I would do. I would stay with stocks right now. But I think we're going to have a ten to 15 percent correction this year and a good gut check. I just don't know exactly where that might come in. But I'm getting more anxious about it.

So here's what I'm going to do. I'm going to move to this though, I'm going to move away from the United States. Minimize U.S. exposure. I'm going to move to capital goods sector overweights. De-bond my portfolio, get rid of the utilities and the staples, the stuff that's (missing audio). I'm going to put in some financials that do well with rising tens for example. I might add some commodities in a commodity ETF directly overall. And for the first time ever in this recovery, cash has a return. It has become a legitimate alternative asset that didn't exist until now. So I think a little cash right now makes some sense, maybe five percent. And maybe set up a plan if the ten-year yield goes two-and-three-quarters and stocks keep rising, I'd take a little more. If it goes to three, and stocks keep rising, I'd take a little more. That's how I'd play that.

At some point too I might decide that the pressure has become too great and I'm going to ditch any aggressive – maybe not leave the equity market, but maybe move entirely to defensive exposure; utilities, staples, everything like that if we get closer. But there is no way to get all that right, quite frankly. So I don't have even high faith in myself that it will, which will do that.

I'd better shut down at that point. I hope – really I just hope maybe one or two of these things turn out right. Thanks so much for listening today. I appreciate it.

[Applause]

Poorvi Parekh: Good morning. Good morning, my name is Poorvi Parekh and I am honored to introduce our next speaker, Dr. Howard Federoff, Vice Chancellor of Health Affairs and CEO of the University of California Irvine Health System.

It takes a very special person to oversee such a vast effort. Dr. Federoff is board-certified in internal medicine and endocrinology and metabolism. He is particularly renowned for his groundbreaking research in neurodegenerative disorders such as Alzheimer's and Parkinson's.

In 2014 Dr. Federoff made international news after he led a team of researchers in designing a blood test that predicted the development of Alzheimer's disease with 90 percent accuracy. He was still at Georgetown University then as executive VP of health sciences and the executive dean for their school of medicine. He joined UCI in July 2015 as dean of the medical school to build on this foundation and pursue his interest of integrating the academic side of healthcare with the enterprise side of research.

In 2016 Dr. Federoff was named CEO of UC Irvine Medical Center, which includes the school of medicine as well as the health-related programs in nursing science, public health, and pharmaceutical sciences. With this dual role as CEO and vice chancellor, he now brings the school's clinical expansions in alignment with the school's academic and research functions. This is a significant and demanding job, one made more complex by historic shifts in health policy and emerging practices in patient care.

On the one hand, significant innovation in clinical research as well as the evolution in translational science has allowed enormous progress in the diagnosis and treatment of major disease. But amidst this period of post-affordable care act and regulations demanding patient protection, healthcare organizations are also facing a potential shortage of physicians and most find themselves economically constrained. Yet they are expected to be run as nimble, responsive organizations. Dr. Federoff is spearheading UCI's effort to do just that while having the medical school excel through education and research.

One aspect of UCI that intrigued Dr. Federoff was its location. Other than enjoying better weather in California compared to that in Washington DC, he has the opportunity to be the top doctor in Orange County with all its socioeconomic and cultural diversity. He is in a unique position as head of the largest medical school in Orange County to address a side range of health issues facing the county's residence.

But even globally we live in interesting times. Many old time diseases have been mostly eradicated with the improvement of medical care, with prosperity, and improvements in living standards. Yet this comes with its own set of health challenges. Being at the forefront of medical research, academics, and practice, Dr. Federoff is in a unique position to diagnose the opportunities and challenges in the world of medicine and provide us with insight into the state of healthcare today.

So please join me in welcoming Dr. Howard Federoff.

[Applause]

Howard Federoff: All right. Well, good morning everyone. I'm sure that this will be for many of you somewhat familiar, but I'm going to tell you some things that you haven't heard yet. And I'm also going to reflect and be attempting to be somewhat prophetic about where the future lies. Healthcare is a very highly dynamic and changing enterprise. And I think we find ourselves almost daily trying to handicap where I used to live, clear across the country, what they might be doing to change what we do, how we get paid, and what we should be preparing for in the months or weeks to come.

So what I thought I would do is sort of take some time and talk a little bit about us. Since I am here in Orange County, I would like to tell you what we are and how we are organizing ourselves. And you hear a little bit about that. I think there is a lot of interest in integration and consolidation to achieve efficiencies. And you'll see a bit about that work that we have ongoing.

I'm then going to broadly talk about what has really I would say inspired many of us to think differently about what we must do to stay competitive. So I'll talk about the burning platform, some of the legislative issues, as well as the impact of that on how we deliver care at the provider level but also inclusive of the hospital.

And then I'm going to talk a little bit about where I think we're going and what it will be necessary to realize, what I think are nascent trends. And some of which I think are likely within the next five years to have a dramatic impact on healthcare.

And so UCI health is an organization that, although it's an academic health center, all of us look a little bit differently. And you heard a little bit about the dual role that I have. But we do have several components that are well familiar. We have a school of medicine. Schools of medicine are the places where faculty, the practice of medicine faculty, the clinical faculty, as well as the academic, the research-oriented faculty lie.

We also have the medical center, which is a tertiary and quaternary facility that lies in the City of Orange. But we are now all over the county. And so one glimpse into this future just in the last two-and-a-half years, we have spread our wings a little bit more and we've been either to acquire or joint venture a variety of things so that we are closer to where we want to deliver care.

Consequent to my securing a very large gift to really promote – and I'll talk about this at the end – the future of integrative health, we are now considering this new entity, the Susan Samueli Integrative Health Institute as part of UCI health. An importantly we are bringing out several new schools; a school of pharmacy and pharmaceutical sciences as well as one in population health. The latter is a buzzword in healthcare. And you will not likely find if you query a hundred people that you'll get an identical definition about what it means to address the population health issue. But I'll provide a definition as we go along.

And so we are a relatively small academic health center. We have a small footprint. We are nonetheless on an operating basis, revenue, we're the largest in the county and we're growing. If one includes our professional fees, we are about a billion-and-a-half dollar enterprise currently.

We are the only academic medical center in Orange County. For the purposes of defining what makes an academic health center, I just showed you some of the components. But importantly, we also are the only comprehensive cancer center, which is a designation one receives from the National Cancer Institute, which means that you deliver the highest quality cancer care and you also provide patients with access to clinical trials that could not be gotten in a community hospital.

And we also operate the only trauma program that's designated level one. So the most complex patients come to us, either by air or by ambulance. And this is a distinguishing feature of us as an academic health center. The school of medicine has grown quite appreciably. We have almost 1,400 faculty that are clinical faculty. You can read down, we have a large number of medical students and residents. These are our future doctors in training, either before they graduate or as residents just before they leave and become independent practitioners. We receive a fair amount of money from the federal government for research, not only from the NIH but the Department of Defense and other underwriters. And we also have one of the roughly 60 national institutes of health that designated clinical and translational science entities. Which means that we can take new concepts out of the laboratory and bring them into the clinic very expeditiously.

Many of us often on an annual basis, we compete across the U.S. for all of these accolades. We have done well in a number of instances. For patient safety just recently we received our sixth consecutive A rating, which makes us in very elite company.

So let me talk a little bit about the burning platform. Many of you may know that the Triple Aim, which really was the impetus for thinking about in the legislation that became the ACA what should we focus on. And the focus here has been on three major topics, but they have many derivative issues attached to them.

But one is on a population basis to improve health. So that gets back to your definition of population health. How do you define that? Are you reducing for example the number of individuals who may carry a diagnosis of Type II diabetes or who may have better blood pressure control or who may have the ability to manage their healthcare status without necessarily utilizing the infrastructure of a tertiary and quaternary center?

We believe that population health includes almost all of those outcome measures that we would attribute to wellness and preserving health. But they also relate to improving health. And so our definition is rather inclusive.

The Triple Aim really demands – and I'll discuss this a bit more, and this is a major trend – is that we have to lower the cost of delivery of healthcare. And this is really where I think the innovation that I referenced earlier is going to come into play. And we have to have overall better outcomes and we're going to be paid for better outcomes. So we are moving from the historical volume where we got paid on a fee-for-service basis, now we're being paid for outcomes associated with quality.

So that brings us to really just thinking about this value equation which you're all familiar with. But as the payors – and a major governmental payor of course is CMS – we are now all being driven to become more attuned at the provider level, at the hospital level, to be able to think about the way we manage those patients to ensure that we drive value. Because ultimately this accrues to our bottom line if we do this well. And there are several things that I'll mention along the way that I think will be obvious as trends.

One of the disappointing things that we have all been familiar with – and this is something that has been around for at least a couple of decades. Notwithstanding the fact that we spend more per capita on healthcare, the outcomes generally measured in the United States are not where they should be. In fact, they are quite low. So we rank in this particular list at the bottom.

So this suggests that we haven't been paying attention to quality. And at the same time we've been expending a lot on healthcare and there is a lot of waste. And I'll show you a graphic on that in a moment.

So this is the concern that has been not driving a lot of legislative discussion. This is part of what drove the ACA, which as you know was passed in 2010. And although it had a few warts associated with it, it was intending to address the rate of growth of expenditures relative to GDP. And the forecast, which is quite impressive, is suggesting that the slope might even increase. So this is where this whole issue about value is now becoming front and center.

There are a number of things that are contributory to the burning platform. And I'll just review them. The aging population, chronic diseases, systemic inefficiencies, and incentives. And so we'll walk through these in a moment. But this is what I call the silver tsunami. The demographics of the United States reflect between 2010 the census data and the projection in 2015 that the number of individuals who will be over 65 will more than double. The expenditures of healthcare always increase as one thinks about this over the lifespan. So this portends a greater expenditure just owing to the demographics alone. There are some diseases where age is the single greatest risk factor or age is a major risk factor. So the issue of chronic morbidity is going to continue to increase as we just think about the graying of America. So I would like to think about this either that we plan for the golden wave, or we're going to be having to address the silver tsunami. And I think those alternatives represent the challenges ahead. But I think we have to plan for the former. The latter is not going to be easily taken on.

Chronic disease is a major part of the healthcare scene. It is the number-one cause of death and disability. There are a large number of Americans who currently carry diagnoses that are associated with chronic conditions like diabetes, like heart disease, like liver disease, like pulmonary disease, chronic obstructive pulmonary disease, emphysema, et cetera. The healthcare expenditures of this group as a percentage of total spend is enormous. So if you actually start crystallizing where is the opportunity to be able to generate value, it's going to be here. And I'll walk through some of what is emerging as approaches that will address this issue. But it won't be a single one. Because the conventional blocking and tackling has proven to be ineffective. And probably while it will always be necessary, it will be insufficient.

So this gets back to the inefficiencies. But just look at this bar graph you can see that the spending on an average basis in 2014 had a substantial fraction, roughly a third, that was wasted. Meaning that it produced no health benefit. So that's a substantial amount of spend that we would like to be able to pare back. And it falls into a number of different categories; unnecessary services, excess administration, inflated prices, fraud. But it's really quite impressive just how much wasted dollars are spent on producing no clinical or health benefit.

So this is the major change right here. I sort of heralded this a moment ago. In the past we were paid for volume. So the more patients that you would see, the more you would be paid. So this had the familiar fee-for-service connotation. There were no rewards for improving the care of your patients. So there was no payment of quality. There were no opportunities for collaboration and partnership, which is critical if you think about the chronic diseases where care would be coordinated so that you are actually managed for your chronic disease by all the requisite providers that should touch you if you carry that chronic condition as opposed to going episodically to one office or the other.

The way it is now and will continue I would strongly predict, will be that we are moving as I said to value. We are going to be paid to manage populations. We are forced to take financial and institutional and professional risk. We will have incentives and penalties, and I'll describe these in a moment, for quality metrics. We will have shared accountability, both providers and hospitals. And one vehicle is the familiar accountable care organization, which I'll briefly mention in a moment.

And importantly, information technology is going to be a core part of the strategy, but it will not be the only part. And I'll talk about big data analytics and the possibility of moving both deep learning, machine learning, and generally artificial intelligence more robustly into the healthcare space at the very end. And I'll show you a couple of examples including some that we've already rolled out.

So this was the patient protection and the Affordable Care Act. This was an attempt to really get to reducing the GDP spend on healthcare. Basically the bottom line was that this was a comprehensive bill that was intending to transition providers from volume to value, where we would then eventually be paid for quality outcomes.

It had also the interesting feature that it led to Medicaid expansion throughout much of the United States. In the State of California roughly 14-and-a-half million Californians were enrolled as part of this state's Medicaid expansion. We call it Medi-Cal here. And those individuals for the first time had healthcare insurance.

We believe that the vehicles through which these products were offered, the so-called exchanges, while imperfect, they allowed for the initial rollout and the subscription and the attachment of those individuals as beneficiaries to different types of products.

So there was a lot of effort to change the ACA after the recent administration took office. And this was heralded in the ramp up to the election. And the two efforts that basically frame out the counterpoint, neither of which of course were successful legislative pieces, one was the so-called American Healthcare Act. And basically the bottom line here is that it was intended to repeal, replace, and adjust some of the components of the ACA, some of which is related to just reducing expenditures. And I'll talk a little bit about this in a moment. But I'll just highlight for you.

One was to reverse what is called the disproportionate share payment. Hospitals such as ourselves which are public hospitals which take care of diverse populations including those that had recently been insured lit through the Medicaid and Medi-Cal expansion. But also we give a lot of charity care to people who still are uninsured.

We receive these disproportionate share payments from CMS because that's part of the business that we conduct on behalf of the public. So part of this repeal and replace was to really decrease these payments. And I'll talk about where we are currently.

And then there was an interest in capping what would be the payment on a per-capita basis. Unrelated to the growth of the expenditure, the interest was to really cap at some level. And the curves would separate quite substantially over a decade where the cost of care would not be paralleled even under conservative estimates by the payment. So this was one effort.

The next effort was the better care reconciliation act, which also as you know did not pass. But the bottom line here was it was predicted to lead to significant job loss and deep reductions in state economies. And it was going to restructure Medicaid entirely, repeal ACA taxes, and repeal all of the ACA penalties. So this also did not pass.

So I'm going to give you a snapshot of where we are now and I'm going to also be a little prophetic, as I said from the beginning. But with regard to now the emergence of more accountable care organizations, ACOs, the familiar but expanded capitation mechanisms for how we get paid for populations, the bundled payment, which is a payment for the entire episode of care. So if you come in for a joint replacement, you get paid not for the surgical fee, for the anesthesia fee, for the pre-op, the post-op. The entire episode of care is paid for. And if you do that really well and efficiently and you have a good clinical outcome, you do well. If you have a poor clinical outcome or the patient for example does not get discharged early but has a delayed discharge, you actually lose money. So it puts risk onto both the provider and the hospital, which I think is appropriate. And so we are moving in this direction and we'll see I think over the next several years more efforts at bundling.

When Secretary Price came in, many of you know that he was an orthopedic surgeon. He was very unhappy with bundling. And one of the first things he wanted to do was to unpack the bundle. Because legitimately it was hurting the income of those surgeons. I think we are going in a direction where we're going to have more bundles. And increasingly more of these episodes of care will be packaged. And it gets back to the integration of the different providers who touch a patient with a particular problem. That's where the integration, the alignment of their care episode is so vital to achieve a great outcome at a lower cost.

In 2015 there was the passage of what is called MACRA, which is the Medicare Access and the Child Reimbursement Act. This is putting increasingly greater risk on us as organizations. And so we are in this very interesting and rapidly-evolving world where we are deciding how much risk are we willing to take. I'm talking about economic risk. And so we've just rolled out our ACO and we're taking some risk. But basically we are if you will thinking about how to adapt to this value-based world. And we are not willing to go to full risk until we had more of an experience. And many institutions are doing this in their ACOs.

And if you look at the ACO history across the United States since the pioneer (missing audio), a number of these ACOs, while well-conceived, actually lost money. And I worry about that every day. So we've been very conservative in planning for our ACO. So I think we'll see upside on this. But many organizations are fairly down the road and taking increasingly greater risks that in was comfortable, at least for our organization at the present time.

Many of you may not know what 340B is. This was a law passed to basically allow certain classes of hospitals, public hospitals, rural hospitals, those that are critical care hospitals, to be able to convey drugs on the outpatient side at a lower cost than what would normally be the pharmaceutical price so that those individuals could secure those medicines at a lower cost.

Well, 340B has been a really hot button. There was an attempt to try to reverse the current law, which is to cut back by 28 percent 340B financing. And there was a legislative as well as a legal challenge. I think the legal challenge will continue to go, but the legislative one has failed, at least to date. And with any of this becomes part of the approach to preventing the government from going in the near term into what might be a shutdown, we don't know. But my suspicion is that this is not yet over. Because it will have a dramatic impact on the affordability of drugs, particularly with individuals who sort of live in the lower quartile.

Another event which was the so-called site neutrality. And this actually makes a lot of sense. But from a hospital perspective of from a CEO of a health system perspective, it really does cut away from our bottom line. The idea is that If you want to go for a surgical procedure, like an ambulatory surgical procedure, and you go into a facility that's in the hospital as opposed to one that's freestanding, historically the payment for the former was much higher than it was for the latter. So we are now all being driven to this neutrality. So it doesn't matter whether you operate on the hospital license or outside, the payment is going to be the same. And the payors are actually driving business, as you might imagine, because they themselves, whether they are not-for-profit or for-profit, they want to maximize value for the patient. So they are driving business to those ambulatory surgical centers. So this is a trend that we're going to consider as being part of our future. And I think if you look at the landscape here in Orange County, it's already evident. And we are moving in this direction as well, that we have to be able to efficiently do these surgical procedures or other procedures like endoscopic procedures in an ambulatory setting, not in the hospital.

I'll walk through some of these. I mentioned the disproportionate share payments. They are declining. There is discussion I think if we get a budget resolution that prevents the government from closing, I think that the children's hospital payment program is going to be refunded as part of that compromise.

The other thing I didn't mention but may have been obvious, and I mentioned this in the context of the car bundle. If a patient gets discharged and then they get readmitted within 30 days, we pay a penalty, meaning that we get paid less for that individual. And so this gets to the nature of the patient, whether they had any other co-morbidities, things that would have made them more complicated to care for. So those tend to get adjusted but not completely.

But if you think about the logic here, it's ensuring that the best outcome will reduce the likelihood that those individuals will get readmitted. And all of us now are highly attuned after discharge coordinating the care so the individual can return to the ambulatory environment and ideally preclude an unnecessary readmission.

I mentioned the individual mandate. This is now no longer part of the healthcare landscape. The tax legislation that got passed at the end of 2017 eliminated the individual mandates. This actually will have an impact on the distribution of who is in the pool. And I'll show you some data which would suggest that it's actually going to drive up the cost of delivering healthcare because those individuals who now will elect to not be covered tend to be individuals who are more healthy. So their absence in that pool means that the distribution of disease across the covered pool is going to be quite different.

So the magnitude of the impact, very quickly. I talked about accountable care organizations. There are quite a large number of them across the United States. These two changes will have a dramatic impact on hospitals that had been part of the 340B program. So those hospitals I think will be increasingly more challenged from a purely economic perspective. The loss of the (missing audio) payments, which is scheduled over the course of eight years to decline by $43 billion, will make places like us less recognized by the federal government without respect to still the nature of the patient populations that we serve. So this would suggest that those hospitals that are for-profit hospitals that are not safety net hospitals, are going to be preferentially advantaged by this relative to the public hospitals.

I talked about 30-day admissions. Three percent is a relatively seemingly small percent. But over the aggregate number of patients that we might – you know, we have many, many tens of thousands of procedures that we do every year in a particular clinical area. This readmission issue has an economic implication.

And then I did talk about the individual mandate. But basically it is now projected that approximately 13 million of the individuals of the 20 who had participated in the Medicaid exchange will lose their coverage. So this will have impact on charity care, it will have an impact on the other part of the pool that remains covered because those individuals generally are going to be carrying a greater burden of disease.

So let me talk to you a little bit about where things are going. We are trying to bring care closer to the home. In my view, the ultimate goal is to be able to deliver quality care in the home. But not the way you might be thinking where you're going to necessarily have a provider in the home. It's going to be about technology and it's going to be about data.

So the issue is really driving a lot of different decisions. I think the CX Minute Clinic is an example. But the principle issue is that people want to be able to conveniently access care close to where they are. They want it to be high-quality. They don't want to have to wait. They also want to, interestingly, depending upon what generation, to have a relationship with their provider. So I'll come to this in a moment. But it would appear that, just as an example from some data recently collected, that individuals who are younger than age 45 would like to have a digital interface. 31 percent of them would like to have a digital interface. Whereas those who are over 65 would actually like to visit a facility. So over the course of the next ten or 15 years the acceptance of this is going to grow and the interoperability of all of the apps that we now have, there's over 800 of them, are going to be driving a new type of data different from that which resides in our electronic medical record that have to be aggregated. And so the aggregation of data, it's scraping, it's mining and reduction to make it actionable is really where the future is going to lie. But it's going to be made actionable in large measure in the home.

So there are going to be many, many different ways to seek healthcare. I just talked about one example. But historically a primary care office had been the tried and true vehicle through which patient care would be conducted in the outpatient setting. But as I mentioned, we are moving into remote monitoring. We have lots of apps. We have virtual visits. Many of us are now doing a lot of telehealth. Our medical center now operates a fairly robust telestroke service where we can provide a very rapid diagnosis to remote hospitals when someone presents with a so-called brain attack. And we can make a good judgement as to the disposition of that patient so that we might be able to remotely be able to have that level of clinical expertise, act on that patient with input from us that will allow those patients' lives to basically be changed in a positive way.

We are believing that these entities will continue to grow and be sustained. The retail clinics, I think we've seen a proliferation of those. We are now experimenting with pop-up clinics. With flu it's interesting. We had to respond to what I would say is an unanticipated epidemic of influenza. So we made the decision a couple of weeks ago that we needed to have a special influenza unit because we were being inundated in the emergence department. We had so much flu And there were patients who had for example major trauma. And so we now just recently opened right on our campus if you will a flu unit so that we can see – and we're just cresting and I think we're almost at the zenith and we may see a stabilization before we actually see the case rate falling.

This idea of being able to rapidly respond and stand up something quickly is really a feature of the future. And I think it's going to be done in a variety of settings. It could be done in the workplace, it could be done in a retail location. But we are now thinking about what types of mechanisms need to be incorporated into the pop-up to be responsive both to need but also not to be tremendously costly from an infrastructure perspective.

I'll talk a little bit about big data and analytics. Basically this is some data that PWC and Deloitte had collected. But there are a large number of individuals who would like to participate or engage with digital data services. So my view of this – and I've been on this path now for almost eight years, is that we need to aggregate data that are not part of the current health scene, if you will. And so I'm going to tell you something that I think is going to become part of the future. And we are just beginning to think about how to do this. And I'll explain this in a little bit greater detail in a moment.

But social media data are increasingly becoming salient to understand state of change of individuals. I call it state of being. So by tracking trajectories of social media and then aggregating that data and producing the personal trajectory or patient navigator – and we already have the prototype. It runs on both iOS and Android. The individual now is aggregating data in a HIPAA-compliant environment so that they can track their healthcare status and interact with their provider. Increasingly more those signals will become much more salient to intervene early, even before someone might recognize that they might have a problem.

And so our thinking is that the aggregation of those data – and I just mentioned one type, which was social media, but there will be wearable data. And we're already aggregating. We're creating an open-source platform so that proprietary new code can be developed that allows this platform to be a common platform. Those data elements are going to allow us to practice digitally detection and primary intervention in a way we've never been able to do. So that's going to be a big health trend and I actually think that's a game changer when we start thinking about that at the population level. The reduction in expenditures if you can interdict a process before it's produced, a symptom or a sign before a patient has come into clinical attention that is a game changer. And we believe that it's possible and that those interventions do now have to be created. We already know what they are. But we haven't been able to find the patients unless we do something like I've just suggested. And it's clear that there are a lot of apps, there are a lot of individuals who have wearables. We believe that this industry is going to continue to evolve or co-evolve with what I would call the future of healthcare delivery.

With regard to the size of data – so I'll give you a couple of – the University of California, the health system, we have 15-and-a-half million records. That's the largest in the United States except for the VA. So we've made a decision across all the five academic health centers that we're going to be on the same electronic health record. We've now already developed a platform so we can mine date from all 15 million, and we can do it in real-time. And that's just the beginning. Because those data, while they are high-dimensional, there will now be unparalleled additional other data that are going to be connected to them. That will include things that you might imagine, like genomic information.

Each of you are sitting in every one of your cells that has a nucleus, you have 3.3 billion pieces of information. That's your DNA. It gets read out into about another ten or 15 million pieces of information. All of this is now accessible and it's going to be aggregated with the conventional electronic medical data along with imaging. And so one estimate, a zettabyte, is ten-to-the-21 bytes.

So in 2025 that will be the data that will exist probably mostly in the cloud, but it will be accessible to be made interactive with some of the other data that I mentioned to you. And mining that data in a way that produces clinical benefit I think is the key issue. So the emergence of new companies that are focused on this space and are developing approaches to rapidly reduce data so it can be made clinically actionable is an area that I think will have great, great benefit to us prospectively.

All of us are now committed and every hospital system that I know of has built an analytical unit. Ours looks a little different because I also have if you will skunkworks in my analytical shop where I give them fairly far range to develop new ideas. And we've already had some successes and some commercialization is now ongoing. These are almost exclusively young people who are not only computer scientists, and some of them actually come from other backgrounds, but they see the way to apply information science to tackle a problem and then to develop a solution, which in the healthcare environment we can innovate on rapidly.

So the other thing I did is I created a medical innovation institute, co-developed with companies. But I put it in the hospital. And so we are now rolling out relationships with medical device, some diagnostic and some software companies to basically use the health system not in a pejorative way, but as a laboratory to test new ideas so we can rapidly get to a go or a no-go. And then the for-profit entity will have the opportunity to now accelerate that into commercial production. So predictive analytics is going to be part of our future, but it will not be only predictive analytics.

This is a good example. There are roughly 1.5 million people who get sepsis. That means you have blood that has bacterium. So it’s blood borne bacteria. It is very serious. People die, approximately a third. It is for Americans a major problem. It is an economic burden. Here’s the cost per a hospital stay and total spend.

So one of our sister institutions actually had taken an approach that came out of the military industrial approach to missile defense to develop an early warning system for sepsis. And now they’ve applied it and now the whole University of California is adopting it because it produces early detection, early interdiction, and it’s saving dollars, and it’s saving lives. So this is just one small example.

So we’ve lunched a few things. I won’t get into a lot of detail, but if there’s any question I would be happy to comment on this further. But the Center for Precision Wellness and Health is intending to do something that does not get done currently in terms of clinical trials. A multinational biopharma says I have a new drug, and it’s designed to produce an effect on this target, meaning that thing that is thought to cause disease. They take all individuals that have that diagnosis and they enroll them in a clinical trial. And typically at the end of this in the large trials, which is called a phase 3 trial, they are asking the question does the prosecution of the drug on the target produce a clinical benefit relative to what might be either no treatment or to the gold standard.

And the reason that that fails – and you heard a little bit about my own interest in doing clinical research in Alzheimer’s – is these were parenthetically 97 percent of clinical trials have failed. They fail for two reasons. One is the wrong target, meaning that patients you’ve enrolled don’t have that problem. Or two, they failed because they produce an adverse event. And in the case of Alzheimer’s Disease, it’s almost certainly the case that it’s probably the wrong target in almost all of those failures.

So this is intended to do slicing. So if we know what drives your disease, we can bin those individuals. So they are homogeneous. So we know the mechanism, we know the target. And we would then be able if the drug existed or if it needed to be developed, we will then joint venture to develop against that new target a drug that specifically tackles a problem resident in that group of individuals.

o by doing precision clinical trials, we will be able to get to goal faster. I think the prediction is you will get more evidence of wins or efficacy. So you will see either more new drug applications, which is the FDA requirement before you can go to market, or BLAs for a biologic. And so this center is going to rely on aggregating information from genomics, imaging, lifestyle, and the environment. And the environment plays a big, big role.

So here's a prediction that I think will be sustained for more than a century. The metanexus for human biology and human pathobiology, disease biology, is going to be about what you got from mom and dad and the impact of the environment on that. We talk about what is called the social determinants of health. And there's lots of epidemiological data that say if you grow up in this environment, you're going to be far more likely of having that disease. But how does that work? What's the interaction between those? So the metanexus is going to reveal what the environmental factor is, how does it act on inherited vulnerabilities and produce the unfortunate synergy that in that individual will bring them to clinical attention. This is going to happen over and over and over again. And eventually we will have a compendium of known interactions, gene environmental interactions that are going to themselves be clinically actionable. So the prediction is that at birth the inherited vulnerabilities will be quantitively known and the prescription with regard to the environment will become part of what healthcare will be. That's going to take us a little while to get there. But the data already suggests that we don't need to learn anything more other than what are the natures of the interactions. So we're going to see this evolving and I think relatively rapidly.

Lastly, I did reference this briefly. Together with colleagues at the Donald Bren School for Information and Computer Science, we have launched the Institute for Future Health. It's a bunch of crazy computer scientists and me. And they might think reciprocally that I'm equally crazy. But the idea is we are creating this common platform for development of a variety of new and likely in some cases proprietary code that will get us to the point of having the individual trajectories. So when I mention population health having so many different answers if you query people, our ultimate answer is that every individual will have an individual trajectory. Our ultimate answer is that every individual will have an individual trajectory that will be populated by data from multiple sources but will be by both the provider and the individual, the patient, be actionable. The Health Navigator that we've developed is intending to do that. So I'll give you one example which I think is an interesting one and it's going to be proved out I think within the next I would say two years.

We know that one group of individuals that has a lot of concern for us are those that are prediabetics. So these are individuals who don't yet carry a diagnosis of Type II diabetes. They may be slightly overweight, so they might have an elevated body mass index. They might have what's called metabolic syndrome. And so what we often say and which is not followed very regularly by patients, you should watch what you eat, you should exercise more, and you should not engage in any activities that would be otherwise disfavoring your health status.

The personal navigator is going to use game theory to basically when someone might walk into the supermarket, they'll be directed to what aisle they need to go in order to be able to purchase, assuming that they want to be compliant, that which is likely to be consistent with whatever their underlying problem is. In this case they're at risk for Type II diabetes but don't yet have a diagnosis. They walk into a restaurant and as soon as they connect, their menus will come up. And so by capturing those data, the compliance and using game theory to reinforce good decision making, my anticipation is that if we can just reduce or delay the emergence from being a prediabetic to being a diabetic in this sort of simple example, it will have an enormous benefit not only on those individuals because they will not have Type II diabetes, but all of the chronic morbidities that are associated with Type II diabetes.

All of you know that we have an epidemic; it's called childhood obesity. We're going to be seeing the complications of obesity such as Type II diabetes, but heart disease and many others probably a decade earlier than we ever saw before. Because the increasing girth of this country at an earlier age is putting those individuals at risk at least a decade earlier than would have been the case 20 or 30 years ago to have these diagnoses. Including one that you'll find surprising that I'm going to predict, it's going to be Alzheimer's Disease. The average age of Alzheimer's Disease now is about 63. It's likely that we are going to see the emergence of that disease and others that have been "age related" at a earlier stage. And it will be related in part to what happens in the first couple of decades of life.

So sometimes I will say provocatively and I'll just share a perspective that I have, is that some of these diseases that we associated with the six, seventh, or eighth decade of life, they're really pediatric diseases, but we don't know how to manage them. And if we come to understand how to manage them, we're probably going to be – when we're in the sixth, seventh, or either decade for that individual's life have reduced the propensity of the individual to come into the health system and now receive a diagnosis that is going to limit the quality of life and maybe even limit their life.

So that's the Institute of Future Health.

So let me just finish up with deep learning and artificial intelligence. Many of you know all about this. But most of us believe that the endgame here is going to be about deep learning, where one can use artificial and silicon neural networks to basically learn and make decisions much more quickly than we can, even the most able and capably-trained clinician.

I'll give you an example from what's occurred in the literature. But this is an example actually – this was built by one of our folks. This is a neural network basically trying to solve a problem, a complex problem. I'll show you the problem in a moment. But generally artificial intelligence has already broken through. Just take Google Translate or – there's a whole variety of applications. But in the extreme, again, this is a good example.

So someone has a head injury or they have a brain attack. And they come into a hospital and three things have to happen. One, they have to be triaged appropriately. And if they are, they then need to be a candidate to have an imaging study. So their brain has to be imaged. They need to have the brain image read by a board-certified experienced neuroradiology to determine do they have a bleed in the brain or do they not. If they don't have a bleed in the brain and they come in with what would be typically a thrombotic or embolic stroke, meaning that there is a clot, then they are a candidate to receive life-sustaining and even neurologically reversible medication, known as tissue (*missing audio*) activator. But it has to be done very quickly.

So typically this will take many, many minutes to over an hour to make a decision. So our neuroradiologists decided to use a neural network approach. And they have been able to demonstrate that this decision, bleed or no bleed, which would take a well-trained person about an hour to an hour-and-a-half, it's in less than a minute. Actually, it's done in a tenth of a second. So if you think about that for a moment and you think about telemedicine. I mentioned telestroke. We believe that all across the United States this is being a clinical problem that is being recognized. But depending upon the expertise and triage, scanning and reading those imaging, those individuals may or may not be able to be adequately afforded the opportunity to receive a lifesaving or life sustaining therapy. But we've just reduced one of the problems.

So these are radiologists actually. They beat out IBM. They won the international competition. A tenth of a second. Less than a tenth of a second is a remarkable achievement. The two of them look like the Doogie Howsers of the world. They both look like they're still teenagers. And when I talk to them, they're so excited by not just this observation, but they now believe that this has application to almost every image. So I created a unit for them. And now they are going to be moving into – they're both neuroradiologists. They're going to be moving into every kinds of image. Not just radiographic images, but we do digital images of other kinds. So there are many other kinds of images that we acquire that are outside radiology.

So this is going to be a huge growth area and I think it's going to have a major impact on how we ultimately classify and the rapidity with which once correctly classified we can produce a therapy that will have a sustaining and maybe life altering benefit to the patient.

Another application I'll just share with you which is rather remarkable. Most organizations such as ours, we buy magnetic resonance imaging equipment that allows us to take high definition scans, slices through different tissue. And although most of you are familiar with the car, actually the Tesla is a unit that refers to the strength of the magnet. And a typically three Tesla MRI may be about a million-and-a-half to two depending upon the bells and whistles. But the state-of-the art in human imaging is really 7 Tesla. But very few institutions could ever afford this. Moreover, when you go to such high (missing audio), the bore size of the magnet is so reduced that if you start thinking about the people with the large BMIs, they may not fit. In fact, that's true.

So these guys have figured out a way to basically get 7 Tesla resolution out of 3 Tesla magnet. And they can do it just using artificial intelligence and machine learning. And so this is another I think incredibly powerful technology that illustrates that image processing is now being turned on its ear. And it may at some point supplant a need to have organizations go into the arms race to buy 7 tesla magnets because it all can be done using a different approach that doesn't require new hardware.

So finally let me just end up with population health and scale. There's a lot of aggregation going on in our market. This just tells you about the numbers of consolidated physician practices occurring over this period. It's growing really quite substantially. We have also seen some remarkable new alliances or acquisitions. This is going to be a very interesting one if it comes to fruition. But basically the idea that a payor and a pharmacy which has stood out really very efficient retail clinics are going to become the new model. Raises really interesting questions for us as conventional healthcare providers. So they will be very accessible. They will probably be able to use all of the benefit of the Aetna data to make good and informed decisions about patients who intersect. But what they won't do – and this is going to be interesting – what they won't do is they won't have the provider-patient relationship being the cornerstone of how you interact with the person who you seek our healthcare from. So it will be episodic transactional, but it will not necessarily be that you have a relationship with your provider. And I think that will be a really interesting, and if it extends, it will be highly disruptive because it will change the way we have thought about training healthcare providers. And I have a lot of interest in that and I haven't enough time to spend talking about that. But I would be happy to talk with anyone if you have questions.

And then similarly consolidation. So this is going to be an enormous consolidation between CHI and Dignity. It's going to form an entity that will be about 28 billion. But you notice that they are doing this not just for economies, but because they believe that having the scale will allow them to implement some digital technologies and innovations that they might not have otherwise been able to implement at the current scale, which is not insignificant.

And so I'll leave you with this. I started, I told you we received this large gift. The Family Foundation of Susan and Henry Samueli – Henry the co-founder of Broadcom – have been interested in a complementary alternative and integrated health for a long time. We are going to pursue for the first time a comprehensive way to evaluate the clinical evidence and then rapidly deploy integrative health. So we have this large integrative health institute that will do research, education, and deliver clinical care. We are in the early stages of thinking ag how do we roll this out as part of a health plan. But just definitionally this is intending to promote and maintain wellness across lifespan. And it takes into account many other attributes that are not part of the familiar clinical interaction that we have with patients. And the question is, well, where is the evidence that these work? And being a scientist, I'm going to ensure that the evidence and the bar needing to search the evidence is very high. Because we want to then robustly deploy this to the benefit of our patients. And some of the evidence is already there, but not in every instance.

And so we will become I think the place – because certainly this doesn't exist anywhere in the world. I've been traveling for the last year. Some with Henry and Susan Samueli and others on my own to visit best-in-class. And what we're doing is going to be done at a scale that's never been undertaken, maybe by more than an order of magnitude. Right? So more than tenfold.

So let me just walk through. This is getting to the end of my few minutes here. We are going to have the strong potential for lowering the total cost of care. The evidence suggests that this is the case. I'll give you the Mayo Clinic example. Mayo decided to include integrative health services for their 65,000 employees. So when I visited the Mayo Clinic last summer, they said three things. One, their employees really loved it. Two, it reduced the utilization of the clinical infrastructure of the Mayo Clinic. This is in Rochester, Minnesota. So it reduced healthcare expenditures. But quite importantly, it reduced absenteeism. And when they surveyed their employees who used their services, they were much happier employees of the Mayo Clinic than they had prior to. So it's a remarkable experiment. And wo we're going to try to replicate this experiment in a slightly different way locally.

So the new knowledge is going to come from being the place. We are in the midst of recruiting a large number of people. And this will not be the only thing that we work on. But I'll tell you a little vignette over here. And it actually provides a little kernel into the way I've been thinking. Everyone will tell you you should eat better and you should exercise more. But how does that really work?

So there have been large efforts around the world to understand how exercise is medicine. And we actually know the mechanism. And we know how the mechanism works in different people. And I'll give you just one example. There was a study that was done in the country of Finland where they decided to use exercise as an intervention among people who had risk factors for cardiovascular disease to ask the question was exercise able to slow the progression to develop dementia. And the answer was yes. And so we now understand the mechanism. So it's interesting now that this could become part of practice. And it would be really highly desirable to know how to find those individuals at greatest risk and what specific exercise through those mechanisms would produce the greatest benefit.

So this is my model of the future. Everyone that we see I want to be able to have them learn and we learn from that clinical encounter. So effectively I want every patient that we touch to be consented to participate in some type of data collection that will benefit them and others like them. So this is really the ultimate research model in delivery of care that is very much evidence-driven. Despite the fact that the Trump Administration has told the CDC that those two words cannot be used together, we still think that evidence-based approaches are going to win out.

We believe it will be about new data being aggregated with conventional data. But it will require high-performance computing and new approaches. And I talked a little bit about those. And we've built this all out now. So we have the computing capacity and certainly we have the coders including, as I described, my two Doogie Howsers and their radiology. But there will be many more.

Eventually it's going to lead to what I told you, which is the metanexus. We're going to understand this interaction between gene and environmental action. So we'll be able to in the extreme at birth be able to risk stratify. And we'll make prescriptions about environment and other things that fall into lifestyle that may mitigate the likelihood that someone will progress to have what could be a dire but maybe delayed diagnosis.

And eventually it's going to be reduced so that the provider and the patient share hat information. We talked about whether that will come from social media, from wearables, those in the built-in environment along with the electronic medical record. I think it will be, as the medical students often like to say, it's choice E, it's all of the above. So I think that's what will happen.

But the outcome of this changes the ecosystem. And I won't spend a lot of time on this. But what it's going to do is allow us to practice evidence-based primary and secondary prevention unlike we've ever been able to do. So we'll reduce the burden of disease at a population basis because we will know in whom and with what we can prevent disease. That's a gamechanger and I think that is part of the future. But it will also allows us to get to the metanexus. And I think the metanexus is really where integrative health will have its heyday. Because it will be the way in which non-pharmacological approaches working through these mechanisms will mitigate risk across different combinations, different people, and can be practiced at very, very low cost. It will allow us to get to a new understanding of really what drives disease in a way that is agnostic to the symptom. So if you will it breaks apart – well, this is how I feel, Doc. But now we actually have the data that suggests that we know what's going on. We can connect it back to the symptom or whatever the complaint might be. But the biology will be extraordinarily rich and I think eventually it will change our whole understanding of human biology and pathobiology. So I think for providers in the future this will be commonplace. It will be okay, so what? But for us this is going to be groundbreaking.

And so this is the rendering of what will be the new entrance to our campus. We are building out a lot more clinical infrastructure on the Irvine campus. This will be the College of Health Sciences building. We are planning for a big ambulatory expansion, a specialty hospital in cancer and neuroscience, the two most important demographically relevant diseases in Orange County. And so I would say stay tuned. But by 2022, 23, we will have greatly expanded our capability geographically. We will have new infrastructure, and I would like to predict that we will eventually become an incredibly powerful destination.

But I thank you for inviting me, and I'm happy to entertain questions.

[Applause]

Howard Federoff: Great question. Let me just repeat it. How much does genetics play?

So there is a rare class of human diseases that are caused by a single mutation. Those are very, very rare and those fall into two categories. If you get the mutant gene, you get the disease. Or the other flavor is if you get one copy of the mutant gene, which is a defective copy, and then you also get another copy, then you get the disease. So in the first instance it just takes one. And in the other it takes inheriting two bad copies. Almost all other disease is what we call polygenic, meaning that no single gene is contributory. That's why if you look across all of the inherited vulnerabilities, what we've been working on is developing a score, a genetic score for every individual. Because it gets back to okay, who is at greatest risk? What's their genetic score and what do we know about those alterations in the aggregate that put them at risk for the development of a disease?

And that's the point where you start thinking about, well, how do I modulate that risk? Can I do it with a drug? Can I do it with a non-pharmacological approach? We are at that cusp right now. So most clinical diseases are not those rare ones. They are the polygenic ones. And so we have to understand how to modulate risk, which is part of that metanexus that I talked to you about. And as we continue to blaze that trail, we're going to be able to get to a precision of risk stratification that every individual will have an opportunity to know really what risk am I at for these classes of the major human diseases and what can I do before I have a single symptom? So that's really the big future.

Bob Cluck: Dr. Federoff, I want to thank you so much for your time. It was fascinating.

[Applause]

Jaylene Howard: Thank you, everybody. I'm Jaylene Howard. I am a consultant in Canterbury's Seattle office. Hence I do not carry the lovely tan that so many of you have here in the middle of January.

I am joined on stage by these three gentlemen for our Opportunities and Equity Panel. Now, I have to say, Bob introduced it that they would get to duke it out. Failed to mention that there would be a moderator in the war of words. And also I've met these gentlemen, and I think you might be a little bit more collegial than combative. But we'll get going.

To my left is Chris Wallis. Chris is the CEO, the CIO, and portfolio manager, senior portfolio manager of equity investment at Vaughan Nelson Investment Management, which I know a number of you are invested in. He serves on the portfolio management team of two of the firm's funds. He joined the firm many years ago. Almost two decades ago. And after years at another firm, Simmons and Company. He has a bachelor's from Baylor. He is from Texas. Vaughn Nelson is a Houston-based firm. And an MBA from Harvard. Thanks for joining us, Chris.

To his left is Paul Bouchey. Paul is the CIO at Parametric Portfolio Associates, down the street from our office in Seattle. Paul leads the research team at Parametric and new product development. Prior to joining Parametric in 2006, he spent many years at Russell Investments where he worked on quantitative decision models for institutional and individual investors. He holds a patent on cross-sectional volatility indexing. He has written a number of academic papers and speaks frequently. Paul and I also share one thing in common; after he left that seat at Russell Investments in 2006, I took it. I don't have a patent though. There's always something in the future.

And to his left is Mike Hunstad. Mike Hunstad is the senior vice president and director of quantitative research at Northern Trust asset management. And he too leads the factor-based research and product development programs there. He spent a couple of years at multiple hedge funds prior to joining Northern Trust and has a PhD in applied mathematics, among other degrees. He too is an avid writer. He is also an avid speaker. And in all that spare time, he manages to be a professor at the Illinois Institute of Technology.

So that's a little background about where these three gentlemen are from. And I wanted to start it off though – I did want to start off, you guys have all been putting money in the markets, investing in equities and stocks and bonds for decades. Can you just give us a quick brief of your own personal investment philosophies and how they have been guided by these last couple of decades?

Chris Wallis: Yeah, sure. I had the good fortune or unfortune of starting my career in '99, which was obviously a market peak. And we developed a philosophy with the idea that it was a market peak. And what we meant by that is when you leave secular bulls, you go into secular bears. And rather than do private equity, I chose public equity where we could trade control for liquidity.

And our philosophy is really fairly simple; you should invest to make money. It shouldn't matter what's happening in front of you. And we do that by trading time for value. Our goal is to make 50 percent over three years. We do very fundamental analysis on individual companies. We believe valuation and intrinsic values driven by return on invested capital and inflection points and that, and the ability to reinvest. And then we spend an inordinate amount of time studying and understanding what's going on in the world of liquidity because that is what creates bull and bear markets and creates bubbles and excesses. And yes, there are excesses right now. It's just not where you typically expect to find them.

And what that allows us to do is avoid those events as they occur and more importantly, take advantage of them. Because invariably there's collateral damage whether it's a myth or a reality, and we can take advantage of that.

Jaylene Howard: Chris, active management.

Chris Wallis: Very active.

Paul Bouchey: I think investors sometimes forget that the capital markets were not invented to create returns for them. The real purpose of the capital markets is to provide capital to business and entrepreneurs and allow them to offload risk onto other people. So the investors are the other people. So we certainly get risk. We also have to bear the costs of investing. So commissions, bid spreads, in some cases taxes. And so it's a very harsh environment for investors. And that really forms the groundwork for my investment philosophy.

When I'm building a portfolio I'm thinking about it like I'm building a spaceship or a spacesuit that has to go out and survive in the vacuum of space, survive meteorites that might hit it, and so forth. So I want a portfolio that's diversified, I want one that's low-cost, and transparent. I think a lot of people come to the stock market in particular thinking can I beat the market. And I think that's absolutely the wrong question. The question is can I survive 30 years in the market. And if you build your portfolio in that way, you're going to naturally avoid taking on unnecessary concentration risks, you're going to be lower turnover, you'll have a lower cost structure. And the other thing is we just try to be more transparent. So we're not trying to build black boxes that are opaque and hard to understand; we want to build transparent strategies.

Jaylene Howard: Paul, I don't want to put you in a box, but it sounds like passive.

Paul Bouchey: Passive. And the labels are tough these days.

Jaylene Howard: It is, I agree.

Paul Bouchey: At Parametric we are passive for sure in our outlook. We not trying to pick the best stocks or time to markets or predict the future. But largely some of the indexes that are created out there have four, five, six percent tracking error, which sounds very active. So anyway, the lines are blurred. But yeah, passive.

Jaylene Howard: Mike.

Michael Hunstad: It's a good segue. And in a sense when you think about the return of the equity market, there's really three pieces. Clearly there's beta. There is skills, stock-picking ability. But in the middle of those two are systematic factor exposures, value, size, quality, volatility, momentum, et cetera.

Our whole investment thesis is capturing those systematic risk premia very, very efficiently. And largely the industry has by and large either ignored or structured their portfolios to purposely rid their portfolios of this factor content. We disagree with that completely. We want to bring that back. When you do that, when you recognize these various components of risk within the equity space. And keep in mind, as you all know, the bulk of your portfolio from an asset perspective is in equities. Even more of the risk of your portfolio is in that equity bucket. So if we have different levers to pull within that equity space, these various factors – size, value, volatility, quality, et cetera – those are building blocks. And with those building blocks we can construct some really, really neat things. And over the last 25 years at Northern that's exactly what we have been doing and have been very, very successful at that.

Jaylene Howard: That's a good start. It's always helpful to know where you're coming from. Let's start with just the current market environment. Jim, was up earlier today, he shared a lot about what's happening in the markets and the economies. And one of the big areas, I think more of an area for concern for all of us, is investor valuations. You've got the point where the Shiller PE ratio, you know cyclically-adjusted ratio for the S&P 500 stands at 33 times, second only to outside of the late nineties really, the dot-com bubble. And yet we continue to see equities grind higher on momentum to start the year. I guess I have to start, you know, valuations are stretched. Chris, how long does this bull market run in your opinion?

Chris Wallis: I think markets are moved by liquidity. And it's excess liquidity increases drive markets higher. The inverse drives them lower. And then company fundamentals or factors as you speak of. Because factors – when we look at companies, we evaluate kind of the factor content as well. Those factors or those attributes and those fundamentals, they come through and they move an individual's security relative to the overall direction of the market.

So we can't ignore this market cycle is different from other cycles because the liquidity did not emanate out of crowding in from other areas. Meaning like in '99 we crowded into tech stocks from everywhere else. So when they feel, that liquidity could go in other places. It wasn't like the cycle leading into the '07 bubble because that was driven by excess credit within the regulated as well as the unregulated or the shadow banking system. And when it cracked, there was no liquidity and the Fed had a very difficult time with its traditional tools to fix that.

The liquidity this time around has been extraordinary, unprecedented probably in the last hundred years. And we printed about $20 trillion. And I think Jim had a great chart up there today where he showed the amount of liquidity relative to GDP. And it's been in excess of GDP. And whatever liquidity doesn't absorb in the real economy goes right into risk assets. And those lines crossed and they go negative in the ack half of this year.

So some assets are going to go down in '18. How far and which ones, we don't know yet. Unless the government – which I think there's a decent chance they'll back away from those plans and not reduce that liquidity. But it takes liquidity to leave the market in order to create a market correction or a bear market.

What's equally important is fundamentally this economy is in great shape. Right? That's not the issue. It's just how we have been pricing securities. And you stated valuations are high and they don't tell you the direction of the next move; it just tells you how far it can go before you get to some mean reverting level.

Jaylene Howard: I think it's really interesting you bring up liquidity and in this sense central bank liquidity. And the Fed is the first to take away that liquidity. But we still have that being offered by other central banks. Chris, I know you play in the U.S. a lot. But Mike, maybe you can comment on where you see opportunity on the outside. From Chris' view there's still a lot of liquidity being pushed into European and Japanese markets.

Michael Hunstad: Yeah. So I think three things there. One is we take a slightly different view in the valuation of the U.S. market. From our perspective, the U.S. market is roughly fairly valued today. And the way we assess that is looking at cashflow yields relative to treasury rates, ten-year treasury rates. And if you look at the historical relationship between these two variables, we are pretty much spot-on today. So I'm not so sure about this rhetoric around overvaluation of the U.S. market. But even still that being said, we still find very attractive opportunities particularly in continental Europe and in emerging markets. Our revenue expectations, our forecasts within these parts of the world, very, very strong. Some of that will come back in the emerging markets. Dilution, translation issues due to share issuances. But by and large very strong growth in revenues. Dividend yields are very, very healthy in these geographies as well.

Our expectations over the next five years, 5.9 percent return in the U.S., 7.2 percent in Europe, 8.4 percent emerging markets. Our tactical asset allocation program is shifting into non-U.S. as we speak.

Paul Bouchey: I would tend to agree. Although I think that if you look at price to book, it's clear that in the U.S. we are at ten-year highs for the valuation there. Not quite as bad in international stocks and emerging stocks, but still on a simple price and book level, all stocks look highly valued. I think that is a function of central banks around the world creating liquidity.

One thing that if you think about how are clients positioning portfolios, I mean, being an implementation manager we are not coming out with high conviction about what our clients should do. But they are coming to us with their ideas and we are implementing them. And so a lot of those ideas are –

Jaylene Howard: To the tune of $200 billion.

Paul Bouchey: Yes.

Jaylene Howard: So you're seeing a lot of views.

Paul Bouchey: Yeah, $250 billion undermanagement right now. And not all of it is just pure passive. So these kind of customized beta solutions.

So one thing we are seeing is a tilt towards defensive equities. So in the factor space we see people tilting their portfolios to lower-volatility stocks, to higher profitability stocks, sometimes higher dividend yield stocks. And then also people are using derivatives to play around with their risk return profile. People always come and say I want to put a floor on my portfolio and they start asking about buy inputs. And I'd like to stay in equities, but I want to lose no more than ten percent. And for a long-term investment strategy that seems that's never a good prospect. It's typically just too expensive to buy that insurance.

And so what we tend to advocate or when we structure portfolios like this is be a seller of that insurance. If you have a long-term pool of capital, you can sell calls on your equity position and sell puts covered by treasuries. And if you build a portfolio like that, as volatility rises during a crisis, your premiums that you're collecting will increase. And so it creates a natural resiliency for your portfolio like you're getting good returns exactly when you need them. So it might not be exactly – you know, volatility is low right now, so the premiums aren't very high. But that's the kind of strategy that we see a lot of institutional money and individual money going into right now.

Jaylene Howard: Mike?

Michael Hunstad: If you don't mind I'll add to that sort of vein there. Everybody is worried about overvalued markets. Not just the equity market, clearly the bond market as well. I hear this constantly. Everything looks expensive, everything looks expensive. Where is the cheap stuff at? And when you take a factor lens, when you take a lens when you sort of cut the equity markets between growth and value stocks. Value stocks today in virtually every geography around the world, value stocks are cheap by definition, but they are as cheap as they have been in two decades. We are essentially back to dot-com era valuations for value stocks. So while equity markets may be overvalued in aggregate if that's your view, the value stocks within those equity markets are exceptionally well-priced. All of our factor-based strategies tend to have some value component to try to take advantage of this. So I think if you're looking for cheap out there, there are certain segments of the equity space that can be very, very attractive.

Jaylene Howard: I think that's real helpful. Because the fact of the matter is most of the folks in the room are long-term investors. Big pools of assets that need to be invested in equities. Not going to just step out of the equity market. And so it really is interesting to see how money is flowing within equities, maybe getting ready for the next stage of the business cycle.

I want to go on one positive for the U.S. market, certainly has to be the passage of the recent tax reform. I think one of the most widely-publicized areas of that, Chris, was the corporate tax dropping down to 21 percent. What has that done to your model and has that changed the way you are looking at 2018 and the companies you are investing in or not? Can you share your thoughts there?

Chris Wallis: We didn't actually make a lot of changes in the portfolio based on the tax rate changes. On the margin there were positions that we increased. I think what's important to realize – and this is true when you use ETF and indices. They are built around narratives. And I lead our small cap strategy. And one of the buzz narratives out there for the last 12 months has been, well, U.S. small caps, obviously they're domestic companies. They must be the greatest beneficiary of corporate tax reform. And I watched a lot of money come in via that way. Wrong answer, thanks for playing. A third of the small cap universe makes no money. Zero. Nine years into an economic expansion with century-low interest rates and massive credit availability, and they still can't make money.

So when you really look at it, I think the most important thing to take away from corporate tax reform, it is a positive. There is no question about it. The positive from here, because for the most part it has been priced in, is it's not like monetary stimulus that benefits every risk asset. It's very idiosyncratic. It really does matter on the company, it matters on their industry, it matters on their competitive position. And I say that because there's a lot of talk that banks, who are an extraordinary beneficiary of corporate tax reform, no question they are. 2018 they're going to see 15 to 20 percent increases in earnings estimates. And that makes them incredibly cheap from a value stock standpoint. I've got companies that are trading at 10 and 12 times their fully-loaded 2018, 2019 numbers when you run that through.

The question is, do they get to keep it? We live in a capitalist system. Do they get to keep these excess returns? Explain to me the difference between one regional bank and the three other competitors in its neighborhood. Nothing. They'll start competing this away eventually. There are certain industries where that's not the case. There's two companies in the United States that make doors. 80 percent market share. They're going to keep it. It's oligopoly pricing. So it really does depend. And the companies that are really going to benefit are the ones where it's a meaningful change in their free cashflow so they can deliver faster to the extent they need to, they can reinvest faster to the extent they have that opportunity. But when you run your traditional intrinsic value calculations, all of this is up and to the right. Because it should increase your after-tax return on invested capital.

Jaylene Howard: So short-term and long-term thinking there. Yeah.

Paul Bouchey: Yeah. There's kind of these short-term write-offs from the tax-deferred liability that might have gone away but then long term – like for a bank it could be beneficial over four or five years.

Jaylene Howard: Yes. And Paul, you guys do a lot of tax-efficient investing. And so can you touch on the individual side of tax reform and possibly impacts there for the individual and whether or not any of us should be thinking about investing our personal portfolios differently?

Paul Bouchey: Yeah. I think for individual investor perspective the tax law change is largely good news. So the topline tax rate, highest federal marginal rate goes from 39.6 down to 37 percent. So that should be a meaningfully lower tax tag on many investors' portfolios.

The other thing was there is no first-in first-out mandatory provision. So in the early version of the tax bill, the senate had a provision that said you wouldn't be able to choose your tax lots as you sold a position or as you gifted securities out of your portfolio; you would have to use the oldest tax lot first. So this would have been somewhat constraining for tax management. It would have been very constraining for say executives who had built up a concentrated stock position over many, many years. They would have to sell their first shares in Amazon rather than their most recent shares in Amazon for example. So it would have encouraged a lot of concentrated risk in the market. So thankfully during the reconciliation process that provision was tossed out. So that's good news for tax management.

There's really no change to the long term capital gain rate or the dividend tax rate. And the estate tax and the AMT, alternative minimum tax, are still in the tax code. But have been reduced so that they affect fewer investors. So the bottom line really from the individual investor perspective is the basic tenets of tax management still apply. You should build a portfolio process that avoids realizing short-term capital gains. You should actively throughout the year seek to find capital losses and realize those and crystallize those through loss harvesting. And then to the extent possible if you can defer long-term capital gains in the future, you can let those tax dollars compound over time. So the same basic tenets apply.

Jaylene Howard: That's good to know. There are two things you said in there. You said a lot of things, but two words that stuck with me. Amazon, only because we live it, breathe it, feel it every day in Seattle. Amazon, the tech sector, and then you talked about risk and concentrated risk. And I want to talk about the tech sector with all of you. It had an incredible year. An incredible year. Pushing out, you know, the percent allocated in a lot of the indexes. I mean, tech is back up to 25 percent of the large cap index of the S&P 500.

Paul Bouchey: And that was the height in the year 2000 when it – yeah.

Jaylene Howard: Exactly.

Paul Bouchey: Ten percent to 25 percent and back down to ten percent.

Jaylene Howard: And back down. And in emerging markets it's an even larger part. It's nearly 30 percent of the index. In fact, we've had a lot of conversations. I think we can speak for my fellow consultants this year, active managers in the emerging markets space have largely underperformed. Their absolute numbers are still strong, but it was because a lot of them weren't in Tencent and Alibaba and Baidu. And that concentration risk is a lens that we've got to bring to the portfolio.

So can you guys just comment? I would love to hear your thoughts on what's going to stop the growth. And maybe we start there; what stops tech's run?

Chris Wallis: I won't speak to the positioning and the indices. I think you all can speak to that. Let me talk about the fundamentals of what could break this. I don't think we need to revert back. There's no question you could have excess valuations. But tech is going to have a larger role in our lives going forward than it has post the bubble in 2000. Fine. However, what's going to stop the growth? There's a handful of elements. We've all heard about government regulation. But there's two things I'd like – a lot of tech, whether it's Google, Facebook, Amazon increasingly so, it's an advertising model. Right? And there's a debate out there right now. We all know there's fraudulent clicks. We can call it two billion of wasted money or 20, it doesn't really matter. That's not going to be what brings it down. Traditional media advertising is still infinitely more effective than online advertising. If I say dilly dilly, half the people here know what that is. Right? Where did that come from? Traditional advertisers have not been able to be paid for that because they haven't had the data. If you're Google, you can see how many clicks. You can argue whether they're valid or not, but you can see how many clicks and get paid. That's changing.

Traditional media companies can now show how many people DVR'd and recorded the game and watched it afterwards or watched whatever series or streamed it from whatever over the top mechanism they wanted. So they're going to demand that premium dollars and they're going to get it. So it's not going to be like newsprint and magazines were. And that's going to start hopping.

The other element of it is a lot of online advertising, yes, it's still from traditional sources, but it was also de novo growth. And they're going to experience the law of large numbers and they're going to start competing more with each other. And it's going to be a question of, well, what discount rates or what growth rates do we need to start discounting? Because growth will start ticking down.

And there's another element of this as well. So just traditional competition showing up. Wal-Mart is an infinitely better competitor today to Amazon than they were five and six years ago. So competition is real and it's going to happen. And that will change growth rates, discount rates, and valuations.

The other thing is when you look at technology, it's been weaponized. Right? I mean, there's a reason why, whether it's European regulation or Chinese regulation, the benefit of being in America was that we had two oceans and two friendly neighbors. And that benefitted us tremendously after World War II. When we moved our economy to a digital realm, we eliminated our natural barriers from our enemies. Why should we care that North Korea could impact us? Because we've weaponized the internet. And you're already seeing countries move to build sovereign internets. We've added it to NATO, right? It's defensible. We can launch cruise missiles over a cyber-attack now. So we look at these entities like the world is their oyster. And that may not be the case two and three years from now. And that's going to be true on the hardware side, and that's going to be true on the software side, and it's going to be true on the network side.

So we're going to start building and creating these things like they're sovereign assets. And that's a very different environment. That's why you've seen a big shift in their lobbying dollars to Washington.

Jaylene Howard: That's really interesting. That's a very interesting view. I had not thought of it that way. But I think there's still one thing about tech and growth of tech that we haven't talked about. And that's really passive flows pushing more money. Not from your perspective, from a value and from a fundamentally what's happening in the company. You think about all those things you just talked about; do you want to be investing more or less in Google or Amazon or Facebook? You guys both play in the passive world. How has the enormous shift in passive flows over the last decade, and in particular the last three years, how will that contribute to the growth of these companies earning dollars, getting dollars?

Michael Hunstad: I think there is a general sense that there must be a connection between the shift to passive and the valuations of these companies. I think there's probably two ways you could interpret that connection, but we are skeptical about both those connections.

The first one that's received a lot of press is this idea of co-ownership, meaning that if there is a small number of owners of all stocks within the tech sector that somehow you create monopolies. So at Northern Trust we manage about 450 billion in equity assets. We are the sixth-largest holder of Apple stock. We are the seventh-largest holder of Microsoft stock in the country. By some weird circumstance we can get those two to collude together to drive their margins up, that would be grounds for this idea that the shift to passive is inflating these valuations. I'm not sure about that. That gives me a lot of skepticism. But there's been a lot of press about that.

The other is just that does passive impact the supply-demand balance for individual securities; is passively managed portfolios they're taking away the supply and then not necessarily contributing to the demand, does that impact things? And I think that may eventually if we get to the point where we're 90 percent passive. But there's still plenty of non-institutionally owned shares out there to support price discovery. So Apple, roughly 60 percent institutionally owned. There's still a big, big chunk that is not. And that's going to be I think more than sufficient to support that price discovery. I think it's a lot ado about nothing.

Paul Bouchey: And I think that you've got to recognize that speculative bubbles are a feature of capital markets since the very earliest times they were created. So this is nothing new or surprising. And I think the connections to passive are very, very weak as well.

Jaylene Howard: That's good, because it's talked about a lot. I think it's important to get out there some of those facts versus…

Paul Bouchey: Yeah. But sort of post the 1990s and the tech bubble and crash, I think there was a view among passive investors like, do we really want to just go along for the ride with the market consensus when occasionally the market – everyone decides something absolutely crazy. So if you think about oh, everyone got together and decided what the true price of Bitcoin was, you know, is that really – you really want to go along with that crowed consensus all the time?

And so there was a move to take some of the ideas from passive, but also make them less concentrated or anti-cyclical. So if you think about like, hey, I have the S&P 500 (*missing audio*) index, or an index that (*missing audio*) the sectors or something like that. So that seems very reasonable to me. it requires its own kind of contrarian view, right? So if you're underweight technology, you're underperforming for the last five years. But if there's a big correction in technology like we saw in 2000 and 2001, it will be worth it. You won't just undo the underperformance, you'll actually be outperforming and have higher growth rate than the other (*missing audio*). So we see this.

The shocking thing about the emerging markets is over the last year about a third of the return comes from Alibaba, Tencent, Samsung, and Taiwan Semiconductor. So if you didn't hold those, you were done from a relative performance perspective.

And then the other thing is about 55 percent of the index in emerging markets is in China, Korea, and Taiwan. So that's another concentration risk we're seeing in the market

Jaylene Howard: Well, how things have changed.

Paul Bouchey: Yeah. Even though we have a passive point of view, we think it's very rational to try to be at times more diverse in the market.

Jaylene Howard: Mike, should we expect a letter echoing Larry Fink's comments if you're the sixth-largest holder of apple? (*missing audio*)more active position or require more (*missing audio*) companies?

Michael Hunstad: No, we'll avoid that.

Jaylene Howard: That was interesting though. That is certainly a trend that's been increasing; sustainability and what companies should or shouldn't do when they have large positions like that. And especially that's happened because of the growth in passive. But let's stay on trends, on factors. And you really brought it up earlier. First to start, because I don't know if everyone knows what is factor investing, although it's been around for decades. I mean, (*missing audio*) classic three-factor model. But it has certainly seen a lot of money, a lot of flows, and it's garnered more attention over the last couple of years. So I'm going to ask Mike that. Can you just give us a brief overview of factor investing as it is right now?

Michael Hunstad: Sure. At its most basic level factor investing is a recognition that there exists dimensions, independent dimensions and risk and return in the equity space. So it's not just about beta. High value stocks, small cap stocks, low volatility stocks tend to produce higher returns than the cap-weighted benchmark if you access those in a prudent manner. And that's the minefield, that's the caveat emptor there.

So the recognition that these systematic forms of return exist I think is the most basic definition of factors. But from my perspective, we are starting to realize this as an industry, that these factors are very real. And when you realize that, that is a revolution in thinking, to say before yesterday we had just bulk beta. Today we have these independent pieces, these legos, these building blocks that I can put together in all these very interesting ways and create these really, really fascinating outcomes, whether it's a liability defeasance or a long-term wealth generation or whatever the case might be, there are so many applications for these different dimensions.

So factor investing, at least from my perspective, is all about harnessing those independent dimensions of risk return in the equity space.

Jaylene Howard: And is that the reason we're seeing so much? Is it technology? Is it just awareness? What is it? Paul, Mike, from your perspective is it growing?

Paul Bouchey: I think it's just a broader trend towards index-based investing. So you have investors becoming more interested in low-cost and transparent solutions and less interested in expensive and opaque investments. So I think factors are interesting. I think of it like nutrients in the food industry. So you can think about combining foods and cooking, and then you can also look at that same food from a nutrient perspective and say how much fat, carbohydrates, and so forth are in it, and vitamins. So factors are sort of the same way. I'm looking at a portfolio. It has a bunch of stocks and bonds in it. But what are that underlying factors that are important to think about as you construct this balanced menu, you know?

A funny story. One of our salespeople in London said to me, he's like, I really like these systematic strategies that you guys are going in Seattle. Where is the magic pixie dust? And what he was looking for as a salesperson is some little interesting thing. And what he was really looking for is some mysterious quality. He wanted a little black box that people could pin their hopes to.

Jaylene Howard: Sounds like a good salesman.

Paul Bouchey: So creating a little mystery is kind of a great thing in investment management. So you put in an index, you publish the holdings, you publish the methodology, you write everything down, and it kind of loses its mystery a little bit. So there's a downside to it. But I think this extra transparency is really where a lot of investors are going. I think there's still a lot of room in the world for active management, absolutely required for price discovery. And there will be skill and opportunity out there. But for a lot of investors they are looking for this transparency.

Chris Wallis: Let me give a little insight into how we use factors, because I think they are important. We are active managers. We know when we build a portfolio what individual investment thesis we have for all in one strategy. We have 25 positions. But while you understand that, these factors can have a huge influence on our path to realizing that thesis or just the overall risk you're taking within the portfolio. And what we've done, fortunately, we have enough scar tissue after a couple of decades just based on history as well as our own experience with our investment philosophy, there are very distinct factor attributes that deliver (missing audio) over time. And so as we construct these portfolios and we look at this every month, we look at the underlying factors. And there's well over a hundred factors that we evaluate.

And what we make sure is that A, despite the fact that we have very different holdings, very different industry weightings, we still have those same attributes. So as he was explaining, value is cheap. So we've sold our Google and we're buying traditional because it's at eight times free cashflow. So we understand that from a value – when we put this together and we have 25 individual positions, we ask ourselves, a, are we as diversified as the S&P 500 on a factor basis? Yes, we are. Okay. Do we have any unintended factor bets? Nope. We understand everything here. We didn't accidentally get low on the slope of the yield curve or anything else. And then the other thing we do is we use it for portfolio efficiency. Because at the end of the day if you as allocators are hiring a manager, they should either reduce your risk or enhance your return. And if they do neither, then don't bother. They're not adding any value.

Well, we look at individual positions the same way. So if we're adding a position to a portfolio, if that's not going to drive a higher return without increasing the risk or it's not going to lower the risk without dampening my return, there's absolutely not reason for it to go into the portfolio. And if it is, something else needs to come out. And so that creates a very efficient portfolio.

And I also think this is important because this industry is maturing. And I think using factors is just the next evolution of an indices. And factors will change. As we discover them and throw money at them, guess what? They're not going to work the same way. I can promise you people that are using robo-advising and have a 14 percent allocation to U.S. small cap indices are going to be disappointed. That's not the same index that all those data produced for the last 20 years. It's going to be very different.

But you'd better be able to explain your returns. Right? That's the transparency. It's not this company underperformed or outperformed. Why did your portfolio do what it did because oil went from 75 to 27? You didn't own any energy.

Paul Bouchey: But one of the things I was thinking about, Chris, is that part of this interest in factors is really the quant active management community responding to the incredible fee pressure from passive investing and vanguard and, you know, four basis point equity portfolios. So I know that one thing (missing audio), these aren't new ideas. I mean, Ben Graham was talking about value investing 50 or 60 years go.

Jaylene Howard: Buy low sell high works.

Paul Bouchey: Yeah. And so these aren't new ideas. I think the thing that is really new is not creating a proprietary black box, but being completely published and open about it and charging passive-like fees. Where do you guys – do you guys feel that pressure? Actually, I think passive managers have had greater fee pressure.

Chris Wallis: You all have more pressure than we do. Look, our industry is real simple; you're adding value or you're not. And if you're not, you're a share giver. And if you are, you're a share taker. And what I see as evolution in fees – and I describe this as our fees are going up, and they're going up because if you can separate (missing audio), explain it and repeat it, it's valuable. And what I think this industry is going to do, which we're embracing, because I think it makes a hell of a lot of sense, is we are moving to more incentive fee structures. Right? So a lower nominal base fee and an incentive fee for when we beat the indices. It makes perfect sense.

And so what we've been able to do is steal share from traditional hedge funds. Right?

Jaylene Howard: Absolutely. It's like hedge funds are coming down [Crosstalk] active are coming up.

Chris Wallis: We are very active managers. So if you're familiar with active share, we stay north of 90 percent. And when you see the stats that active management can't beat passive, that's because the vast majority of those guys, they're not really active. Right? If Exxon is four percent of your index and you're choosing to own three or five, you're babysitting money. You are a share donor. This industry should get rid of you, and it is. Right? The question is can Exxon replace its assets. No. right? If it wasn't in enough of the passive indices, it would already be trading at half its current value. Right? It's liquidation its balance sheet. But fees, the alignment between investors and managers is increasing. And I think it's unbelievably healthy. It's the transparency of getting what they paid for, understanding when it works, knowing when they should increase their allocation to you, knowing when they should pare their allocation back to you. It's very collaborative. We have a very collaborative relationship with our clients.

I've got clients that will call me, "Hey, is now the time?" No. in fact, take some money. Right? We've had a hell of a good run. It's a good time. Peel a little off.

Jaylene Howard: Did you want to add something?

Michael Hunstad: Yeah, I might take just a little bit different view on that. I think to add to this active/passive debate, one of the revelations of factors is that when you look at the performance of traditional active managers, you can attribute a lot of that performance to their factor exposures, to the fee question. I think what the industry is recognizing is to say yeah, I have active managers. They may have outperformed over time. But when I decompose those returns, they're really nothing but factor exposures. There's no secret sauce, there's no pixie dust that's layered on top. Why can't I replicate that same factor exposure at a considerably lower price tag? And I think that's one of the major drivers.

But that also says if I can do that, then I'm creating a portfolio that's largely passive or roughly passive that's more efficient than the cap-weighted benchmark. So I think the factor question is really coming about and bringing about this debate about active versus passive.

Jaylene Howard: Absolutely.

Paul Bouchey: I see fewer investors actually push. Like oh, do you think active is better or passive is better? Everyone is doing it all.

Jaylene Howard: I agree.

Paul Bouchey: Hedge funds and they have pure passive and they're doing factor, and there's an evolution going on.

Jaylene Howard: When the whole term outcome-oriented came out, it seemed a bit fluffy and more marketing than anything else. But it's true. You've got to invest and build a portfolio that achieves the outcome that you need. And now more than ever there are the tools. You have active, you have passive, you have factor, you have smart beta. You have it all. One of the underlying things that has created and allowed for some of this to be true is technology.

And I don't think we should end without asking that question to you guys. Artificial intelligence is everywhere. They had the great, you know, consumer event last week in Las Vegas, so that took a lot of headlines. But one of the things that was really interesting is for the first time ever at that innovative platform where all the new technology is released, is they had an entire section and program related to artificial intelligence and deep learning. And asset management is right there with a lot of different industries. How does that work? What do you see. You know, the future of the human, the future of robots, will we be here in 20 years talking, and what are some of the risks to going to more quantitative models?

Paul Bouchey: I think that if you think about the industry, it's already happening in a way. So Vanguard saying I'm just going to (*missing audio*)all the stocks and you're going to invest in everything, that's a kind of algorithm that is artificially choosing what to invest and what weights. And it's basically taking the whole market consensus and averaging it out to a portfolio. So that's a kind of artificial intelligence algorithm. It's a simple one, but it's taking all the views of all the active managers and all the traders out there and trying to build a portfolio based on it.

So that is absolutely disrupting the investment management industry and has been for a couple decades. New factor of smart beta indexes, that's disrupting that and both, like you said, people kind of stuck in the middle who aren't pure active and can't justify their fees are getting squeezed out of the market. So I think it is already impacting. You see robo-advisors kind of squeezing our or attempting to disrupt the traditional wealth advisory market. So this is happening.

Myself and the people on our research team have gone to quite a few quant finance conferences, and there's a lot of excited talk. I think it's very early days for either artificial intelligence, true artificial intelligence techniques, or machine learning techniques to make its way into security selection and portfolio construction. It just seems – I think there's some problem with creating a process that has no theoretical underpinning. Right?

And so data mining is a bad term in our industry. It's a bad term. In the machine learning space they're talking about data mining exclusively, like their whole conference on data mining. Right? And people excitedly talk about data mining. So I think for people to have trust and for fiduciaries to do their duty, they have to know what's going on and they have to talk to the people. Even if you're building algorithms, they want to talk to the people who are building the algorithms. You know? So I think it's a people business even though I'm a quant and I build algorithm robots all the time. I think it's early days for that.

Michael Hunstad: I think there's application on the higher-frequency end of the spectrum. I think where the biggest investment is within the hedge fund space are the algo-traders. As a former algo-trader we did a lot of this machine learning kind of applications for long-only investors that are more buy and hold, I think there's less application overall. I'm a big contrarian here. I'm a bit anti datamining. As a mathematician when we data mine, we use all these statistical analysis techniques and we control for – if you remember stats 101, we control for type one error, and we're really, really, really good at controlling for type one error. Really, really bad at controlling for type two error. And these data mining applications are just rampant with this type two error. So I'll leave it that. But I'm a little bit more skeptical.

Paul Bouchey: And I tell my analysts too, like, hey, this algorithm isn't designed to trade for you; it's designed to give you insights so that you can trade. And if you have a model that's not based on factors, just based on the statistics of recent returns, you won't be able to gain insights from it. So that's a problem.

Chris Wallis: And I think as a fundamental investor the first thing, it should increase my productivity initially. And then it may replace me. But that's many years down the road, right?

Jaylene Howard: Jim told us we weren't very productive though. We could use it.

Chris Wallis: No idle machinery. No. But I do think my biggest issue is information and assimilating information as rapidly as possible right? Because I make my money – everybody knows what factors are out there and what we're paying for them, and you can choose to own them or not. Right? That's not where I'm going to generate alpha. I'm going to generate alpha from – we have a little company that makes specialized vehicles. (*missing audio*) happened to build a couple of companies. They have $26 billion installed base and they sell no aftermarket parts. He said hey, guess what, we're going to do an aftermarket business. Two-and-a-half billion in revenue. They now have 26 million. It will be at 800 million in a few years. That's a completely fundamental change in that business. Right? I can't screen for that. I can't look at any history and find that. But if I can find those situations faster by – and we do this today, right? You can screen through filings for management changes. We screen through and we get any management team that's buying shares more than $50,000, I get an email every day about it. Right? So there already is that going out. So I think the first step for us is finding applications to get at that data and that opportunity set more completely is the way I describe it.

Paul Bouchey: A favorite question I get from consultants is how much of your process is subjective and how much is objective?

Jaylene Howard: Good question.

Paul Bouchey: And I can make arguments for a hundred percent objective, because every trade we make goes through our algorithms and the portfolio manager running doesn't have – you know, he can't just decide, you know what, I'm going to go 20 percent over with Apple right now. They can't do that. It's part of a process that's disciplined. So I could argue that it's a hundred percent objective. And I could also say, like, why did we build the algorithms that we built that way? Initially it was a bunch of subjective choices; to pay attention to factors, to create a risk model a certain way. It's all the subjective judgment of the analyst building the model. So I can make arguments both ways.

Michael Hunstad: This is exactly why we are very skeptical of passive implementation, particularly in the factor space. You have these algorithms that are sort of set-it-and-forget-it. Okay, I'm going to strike it now and I'm going to just let it rip for the duration. That is a recipe for disaster. So there is a good way and a bad way to implement these quantitative techniques. But I think I agree with both of you; it really has to be a hybrid. Quant is absolutely wonderful. Our strategies are 99 percent quant. But there is that very important one percent that's active. And that active piece gets us out of that left tail, gets us out of those bad situations.

Jaylene Howard: And don't forget, financial markets are living, breathing animals. It's like weather and ecosystems; they evolve over time. So they're going to react differently in the future for the same element that impacts it as they did in the past. And the minute you head into it, you're going to influence it as well. It's very dynamic. It just doesn't lend itself to a rigid framework.

Paul Bouchey: I do think this is a great challenge for passive investing and index-based investing. So let's say you have these factor-based indexes that, like you said, are created. And then there's really no investment team. Right? It's just a process. And so what happens is the investment decision making responsibility falls back to the investor, the consultant, or the advisor, right?

Michael Hunstad: It falls to no one.

Paul Bouchey: It falls to no one, yeah. So anyway, so if you come to me and say I want a defensive equity solution with low volatility and valuation, blah, blah, blah. And I'm like, great, I built it, here it is. And then you come back to me three years later and say hey, that did really poorly. I'd be like, yeah, that was a bad decision on your part. *[Laughter]* We tried to build it as efficiently as possible what you wanted. It was what you wanted. You know?

Jaylene Howard: Be careful what you ask for.

Paul Bouchey: This is a conundrum for smart beta indexes, is that really it is trying to shift the responsibility of choice back to the investor. And like you said, I don't think it always gets shifted back. There are certain institutions who have the staff, who have the quant people and they really dig into it and they understand what they want and they communicate that to their board and everyone is great. And then there's others that like, hey, it's an index. It's low fee. It must be no possibility (missing audio). And then they kind of get to this point.

Michael Hunstad: We see examples of this everywhere, of indices that are designed to be value or low volatility, whatever the case might be. But over time there is so much disruption to the underlying methodology, the methodology just doesn't apply to the market anymore, to your point. They are no longer low volatility, they are no longer value. And there's literally no one that can make that correction. So we are very skeptical of the (missing audio).

Paul Bouchey: Yeah. And I think that's why we do a lot of third-party indexes where we'll implement whatever people want. But for the factor side we've started to build them in-house because we want our investment team to be able to change the index and evolve the index if the conditions change.

Jaylene Howard: A healthy dose of skepticism. That's probably good, especially with new technology. But I think in all I'm happy to hear you say human plus robot. Yeah.

I want to open it up to questions. I know we ran out of time for questions for Jim earlier. And certainly these gentlemen can answer very similar questions or any new that we haven't hit on. So if you have a question, raise your hand. We've got some mics. And those are important so we can hear the question. As you think of some questions, I'll just put it out there for all of you. You've talked very openly about the positives and the potential negatives. What are the risks of – again, it's been a bull market. It feels good. The returns look good out of 2017. But what are the risks that you guys are watching?

Chris Wallis: I think the biggest risk is the excesses are never in the same spot cycle to cycle. And so the general investment public is never looking at it. And the excesses – and only in hindsight, as always, we'll see it – the excesses are very real today. And they are in some structured products that remotely could be a systemic issue for certain areas.

Jaylene Howard: For example?

Chris Wallis: Some of the ETNs that are used to short volatility structurally could be a problem. But that's very tail-risk oriented. But there is a very real risk right now of the excesses. And it's sitting in our federal government. And it's 20 percent of our economy. And it's the reason we passed the tax act, it's the reason we passed the Affordable Care Act. And our government is struggling to fund its deficits; and that's a problem. And at the same time, the way we use the dollar in global trade is changing. And it started changing in 2014. Because it's no longer the primary currency in the energy trade anymore. And it's the first time we'd allow it not to be without going to war. And it's a very coordinated effort. And this current generation – I mean, I've got boots older than most people managing money now. But even me, I haven't seen the currency change, but we're changing global currency regimes. And we're going back to what existed kind of pre-1900 actually, even post Bretton Woods, post the deal we cut with the Saudis in '72.

And as you remember Jim this morning discussing shifting sands and inflation expectation and the dollar is behaving differently and interest rates. I don't think interest rates can go anywhere near as high as he says. Because it will bankrupt the federal government. And I think we're trying to crowd dollars in. I think we've priced $20 trillion up one percent. It's $200 billion more of interest over the next 12 months. It's 40 percent of the incremental nominal GDP we've produced. And we're going to have much slower economic activity for the next couple of quarters because of that.

And how we deal with that potential balance of payments issue and this negotiation we're having with China right now is very real. And it's not priced for that in these equity markets at all. And that will spook people and it will impact liquidity.

Paul Bouchey: When I look for risk, I just look for things that are so weird that I don't understand them. And the two weird things that I see right now are negative interest rates in certain parts of the world – how is that possible? It breaks all arbitrage pricing theory, and all of economics just broke. Oops. You know? So I don't understand that. And what are the ramifications of that? Well, they're obviously pumping money and there's some bubble somewhere. I don't know if it's Alibaba, I don't know what it is. But it's pumping money somewhere. And so that's very strange and worrisome.

And then the other one that I don't understand is Bitcoin. Sovereign power is based on military might and physical power, and sovereign power will never give up control over currency. Because currency is a whole separate power.

Jaylene Howard: My hairdresser told me Bitcoin is a collective and it only goes up.

Paul Bouchey: It only goes up, yeah.

Jaylene Howard: So you should sell.

Michael Hunstad: I agree. I think the biggest risk that we have now faced globally is essentially reserve bank impotence, monetary policy impotence. We are addicted to high levels of liquidity, we are addicted to low interest rates. We cannot materially adjust that without causing major disruptions in the markets in aggregate, and we just don't want to do that from a political perspective.

So if economic conditions change materially, we are unable then to control the growth path, the inflation path. That's going to be a problem in the future should that occur. So that's the thing that I'm most worried about.

Jaylene Howard: Questions? I see a hand up. Dave? Wait for the mic, Dave. Thank you.

Dave (audience): Talk to me about the long-term prospects for the United States. In my household if I take on more debt, I generally don't try to cut revenue. After that I have to cut spending or have to extend the term, or I have to default. Those are my only four choices. So when I look at the U.S. piling on debt and reducing revenue, I sit and start thinking longer than the next 12 months or 18 months and say why is the U.S. a good bet?

Chris Wallis: Structurally we are fine. Right? Our eco-boom, as Jim talked about the millennials – I've got three of them myself. There's a lot of them. Right? And they've replaced the baby boom and they're filling that gap. And that economic growth that we need is going to be there. That does not exist in Europe. It doesn't exist in most of the rest of the developed world for sure. And that's a problem.

What we have to grapple with as the United States – actually, I have no issue with the tax cuts for the corporate entities. We needed to do that. When you look at the economy itself – forget the rhetoric. I hate both parties, right? They don't want to solve anything, they don't want to fix anything. Because if you do it's terrible as politician. You can't put the fear in anybody to donate or vote if there's not any issues.

The only thing we really have to deal with in this country is our pension problem. And there's a solution. It may be hard to get them to do it, but there's a very real solution. Social Security is a very easy fix. Healthcare is actually an incredibly easy fix. It will be painful because it represents 18 percent of our economy. But we don't have to pay what we do for healthcare. And that actually may solve itself. Otherwise we'll cause a recession and get rid of some very valuable jobs. But we can fix that and we can deal with that.

But we have to close the inequality gap if we want the social stability to reap the benefits of what we have from a population growth standpoint, what we have from the dynamism of capitalism, both free movement of labor and capital. And the only way we're going to do that is if we get money back to the middle class.

So what I would propose is a very simple solution. We've got about $4 trillion sitting on the Fed's balance sheet. If they go to shrink it, it's the worst thing they could do. Because when you refund federal debt if it's not on the Fed's balance sheet and deficits grow, they fund those and they have to refi the debt that comes due. It comes from the private sector out of one pocket, into the pocket of someone else in the private sector. If they try to shrink that balance sheet, it actually takes two dollars out of the private sector to do it. It's very disruptive to liquidity, and it will destroy asset prices. And that's a big deal. Because a very large, disproportionate element of tax receipts come from capital gains. That's why they keep airing this thing up, and they're scared to death to let it fall.

So if you look at the federal government's cost to carry, it's just north of two percent, have about a term structure under 70 months. And it chews up nine percent of federal receipts to pay the interest. So we can't allow that to go higher. So we have to suppress rates, we have to get nominal growth going.

Take $2 trillion off the Fed's balance sheet, run it through the Pension Benefit Guaranty Corp and give it to every public pension in the United States. Fund that gap. Because when you do that, that's the only part of our economy that's not growing at a normal rate. If you looked at Jim's charts this morning, he showed you the lack of public investment in infrastructure. That's it. The private sector is growing at normalized rates. The private sector is spending on capital as they should. It's the public sector that's not. And so if we plug that gap, the U.S. is fine. If not, we'll be at each other's throats for the next decade or so.

Paul Bouchey: One of the things I notice, so I go to work and I walk down the street and I go up the elevator. I am surrounded by 10,000 to 20,000 Amazonians, little computer programmers who work at Amazon. Right?

Jaylene Howard: Especially since you're a block away.

Paul Bouchey: And they're building the cloud. I don't know what they do every day. But the thing that's crazy about Amazonians is they come from every corner of the world. Kazakhstan, Argentina, Indonesia. It's not just immigrants from China and India and programming talent from those two countries. It's from all the little Middle Eastern countries you've never heard of. And so you've got all the colors of the rainbow and all these different races and nationalities. But they're all like 28 years old. Every one of them. And they all have a laptop. And even in the elevator they're working like this. And so I'm just struck by, wow, Seattle has just imported 30,000 of the brightest young people in the world, and they're putting down roots in the U.S. And I think that's wonderful for our country. If we had the opposite problem, we would call it a brain drain. You know? I feel bad for Kazakhstan; all their best young kids have come to Seattle. So anyway, I think that's good for the U.S. Anyway.

Michael Hunstad: Just very briefly. The unknown variable I think in all of this is productivity. We have gone through a period where productivity in the U.S. has been fairly lackluster Our expectation is that is going to significantly improve going forward. That is a multiplier essentially effect on output, on GDP growth. Therefore the trajectory keeps up essentially with that debt. So our expectation is a little bit benign because of that. But I think that productivity is sort of the missing piece.

Jaylene Howard: Any other questions? Probably got time for one more if you have it. Great. Thank you, gentlemen, we appreciate all that you shared today.

D. Chowdhury: I am the President of Canterbury Consulting and I wanted to reflect a little bit on what Bob said at the outset to the extent that this is our 30th year. You can imagine a lot has changed from the picture that Bob described of the four founders around the card table, and the two assistants. So if you'll indulge us, we'll spend a few minute to talk about just where we are today as an organization.

Today we number 58 employees overall, and as you'd imagine, the composition of the firm is very much a reflection of the services that our clients demand. So both the institutions and families and family offices alike continue to look to us for guidance on investment strategy, manager selections, as well as all manner of portfolio matters.

Right alongside that is an increasing requirement from our institutions and families alike to provide support on all the administrative, middle-office, and back-office functions that most of you frankly would prefer to delegate to us. So you can imagine the balance of investment professionals and organizational professionals reflects that, and that's why we're basically 50/50 at this point in terms of the organizational composition of the firm.

Suffice to say we're very proud of the 58 employees that we have at Canterbury working in all manner of the organization. I was thinking about Jim Paulsen's comment earlier this morning about the unemployment rate.

Interestingly, in Orange County the unemployment rate for college graduates is less than two percent. So it is strangely difficult to find great people. As we grow, we're continuing to look for great people in our organizations both in the investment and noninvestment capacities alike.

As you likely know, we have two different office locations. The one on the left has been our headquarters for the last almost 30 years. The Seattle office has been in place for approaching 18 years now. That was opened in the year 2000. Today between those two offices we serve clients in 15 states across the nation as well as in Canada and in Mexico.

As part of our growth, we are gonna be moving the Newport Beach office a whopping 375 yards to the south from 660 Newport Center Drive to 620 – 610, excuse me. Functionally that is certainly going to help accommodate our growth, and in late April we'll look forward to welcoming all of you to our new office space.

I do want to spend a couple of minutes on the important topic of safeguarding client assets. This is something that I think is pervasive in our lives both as individuals, organizations, and certainly to the extent that we are at minimum an intermediary to a variety of financial institutions that hold your assets.

The name of the game here really is about protecting your assets and protecting your data, and I'm gonna walk through a few steps that we've taken internally as well as with clients to do just that.

The process around money movements has become and continues to be more and more stringent and rigorous, and that is simply by necessity of the world in which we live. That rigor has demanded – and some of you clients have experienced this process in ways that occasionally is described as being a pain, but really it is the rigor to make sure that there are always checks and balances. Trust but verify, and verify, and verify again.

Central to that is that you've probably experienced that we no longer simply rely on e-mail instructions as it relates to money movements. There's always a second step involved in terms of a verbal confirmation or otherwise with listed parties, authorized users, et cetera, to verify anything that's coming through in the form of e-mail traffic, which is a very, very simple way for the bad guys to spoof instructions that would otherwise be fraudulent.

Network security gets into the technology aspect of all this, of which we're all a part. The network security internally relates to layers and layers of filtering of information in terms of web content, e-mail, et cetera, before it ever reaches any employee at the organization, and certainly before it reaches any client, to filter out that which is irrelevant before it even gets to some – to eyeballs.

In addition to that, every mobile device that our employees use have very stringent access requirements, 'cause you all know you've got your desktop. You've got laptops, iPads, multiple and various ways to access information, and to the extent that they're all access points, there's layers of security there as well.

And we have also implemented a process of two-factor authentication. That's a process where perhaps in your personal lives you have experienced really having an additional step. Instead of just logging onto the website, they send you a PIN or a passcode that gets sent to a registered address to just have an extra step to make sure the person logging in is who they purport to be.

And then finally education. Both internally and externally the education process is ongoing. On an internal basis, we actually have surprise e-mail phishing campaigns, phishing in the P-H-I-S-H sense of the word. That is simply to test and lure frankly our employees into clicking on links that look otherwise relevant.

I'm happy to report a couple cycles of this we have had zero hits of employees clicking on incorrect and erroneous data. We have also explained the education component of this to clients. Some of you have participated in a webinar that addresses this very topic, and I'd encourage you to certainly learn more about the ways in which you can protect your own assets.

Our chief operating officer, Mike Ethridge, is also taking a leadership role in the industry in being part of a peer group of about a dozen registered investment advisors to really, on an industrywide basis, continue to beef up security capabilities again in the interest of preserving and protecting your data and the assets behind it.

And then just to wrap, really everybody in this room falls somewhere in this pie chart. I think you're well aware that the majority of our client business is really two client models, one being a not-for-profit institution in the form of a community foundation, a health care entity, cultural institution, or otherwise; and the other being families and family offices. We're extraordinarily proud to be partnering with you over the many, many years of which many of you have been clients.

As a quick update on the organization, over at least the last ten years we were very fortunate in the partnership and trust you've placed with us and having rather extraordinary growth, dare I say. This is the first time in our history that we've gone over the (missing audio) *[break in audio]* billion dollar mark in terms of capital, and so the evolution of the organization in the last ten years has certainly been very much because of the trust and partnership you've placed with us. So thank you very much for that.

Okay, so with that we're gonna pivot to a topic that I am particularly excited about and certainly a speaker that I think you'll enjoy. Our next speaker is Paul Schulz. He's the senior vice president of development at the California Community Foundation. In his role at the California Community Foundation, in just the last couple years, Paul has been responsible for procuring over $500 million of donor capital.

Paul has been a leader both in the nonprofit world and in the for-profit world for his entire career. Prior to the California Community Foundation, he was the CEO of the American Red Cross in the Los Angeles, California, region.

And he also had a very prominent career in the for-profit space with an organization where he was senior vice president of sales at a company called Overture. During his tenure at Overture, there was a twentyfold increase in their sales revenue, and that firm was eventually sold to Yahoo! for $1.3 billion in the early 2000s.

He also started his career at McKinsey Consulting, where he was responsible for a lot of strategic development and partnering with very larger companies such as Unilever and others in his role there. I think perhaps one of Paul's proudest accomplishments occurred when he was a Rhodes Scholar at Oxford University. He tells me that he was on the varsity track team there, threw javelin, and not a single soul was hurt in the process of throwing javelin.

In any case, I'm very happy to introduce and please welcome Paul Schulz.

[Applause]

Paul Schulz: Thanks for that introduction, Debashis. I will promise you nobody was hurt with the javelin. It was the only thing I was qualified for at Oxford.

This has been a fantastic morning, and I've really enjoyed thinking about the analytics of investing. One of the themes that I want to talk about a little bit, and hopefully we can have some question-and-answer when I'm done, is around the analytics and the data of nonprofits themselves, and particularly those who are involved in boards, and trying to make those nonprofits as strong (missing audio) *[break in audio]*.

I think there's some real opportunity there, and we want to talk about that a little bit. Some of that came up in dinner conversations last night, and I want to continue that conversation today.

So in order to talk about philanthropy and my background, for-profit and nonprofit, I want to talk just very briefly about my background so you can see the biases and the perspective that I've got coming in. I grew up in the upper left quadrant. Can anybody identify that city?

Audience: Phoenix.

Paul Schulz: Phoenix, Arizona. Very good. I then moved on to the Cube, lower left. Does anyone know where that college is? Oh, it's small, liberal arts in Claremont. Claremont McKenna. I then went off to Oxford, as Debashis mentioned, and the last 30 years have been in Los Angeles. So very, very Los Angeles-centric from both a for-profit and a nonprofit standpoint.

He talked briefly about the career perspective here. Most of those are household names. I would say the one that's not a household name for most of you would be the California Community Foundation.

How many of you have even heard of the California Community Foundation? Please raise your hand. Okay, that's great. That's well about average for most of the people that I talk to even in Los Angeles.

So what is the California Community Foundation? What are community foundations? Well, it's a public charity that serves typically a specific geographic area, in our case Los Angeles County. We've been around about 100 years, and we work with our donors to make sure that their donor intent is realized in whatever charitable activities they want.

Now that can be in Los Angeles or outside of Los Angeles, but that's the goal of foundations over time.

There's about 32 community foundations across California, over 700 around the United States. They were started about 100 years ago. The first one was in Cleveland, and really, they just spread like wildfire, primarily because people want their intent to be honored, whether they're living or whether they pass. Community foundations do that in the particular areas that they serve.

The two largest community foundations in California would be the Silicon Valley Community Foundation with over $8 billion in assets and the California Community Foundation with our focus in Los Angeles. Our particular area of focus has enabled us to raise assets over time, $1.7 billion over those 100 years.

We've got about 1,600 individual funds. Every donor will come and set up a fund with us, and we will honor that donor's intent. We've got about 800 living donors that are working with us on a daily basis, many of them owning donor-advised funds and working with us in that way.

We were fortunate enough to raise about $500 million in just the past two years alone. And so part of this is thinking about philanthropy from a business perspective. A community foundation, if it has scale in a community, is a wonderful business as well as a wonderful opportunity to do good.

We raised that $500 million with 12 fundraisers in the past two years, so about $250 million. Typical ratio for an organization would be about $2 million per fundraiser. So it's a pretty extraordinary business model. We've granted out over $400 million. Half of that has been granted to Los Angeles; the other half has been granted around the country and around the world.

Our main focus is systemic change in Los Angeles, particularly those that are most vulnerable in L.A., and we do that in four areas. The first is health. We focus right now very specifically on those who are eligible for health care through the generosity of the state of California but have not signed up. There's 50,000 individuals in L.A. County that are eligible but have not signed up for health care.

Housing. We work on permanent housing for the homeless. There's a homeless epidemic in Los Angeles right now. Over 50,000 individuals sleep on the street every single night. Our particular niche is to try and work with the hardest-to-serve homeless who need not only housing, but they also need wraparound services and case management because the conditions for them individually are so severe.

Education. We are the largest scholarship provider in Los Angeles County through the generosity of our donors with a particular emphasis on community colleges.

And immigration. You may not know this, but L.A. County has 800,000 people who are eligible to become US citizens but are not US citizens. We are encouraging them to take that step of citizenship because they have a Green Card. They're here legally. They are eligible for citizenship, but they're not taking that next step.

So the state of philanthropy. Let me talk for a few minutes about some broad trends that we see and the state of this in general, and then I want to give some personal observations. The categories that people give to have remained fairly steady over time, and philanthropic giving has been very generous over the last few years.

Philanthropy is up to almost $400 billion a year across the US. That's over $1,000.00 for every American. The largest category consistently year in, year out, is religious organizations. They tend to be small contributions, but spread out among hundreds of millions of Americans.

The next category is education, and in particular higher education is doing particularly well. The third category is human services, and the fourth is health care, primarily hospitals but primary care as well.

Some of you may not know that when you think about the giving that occurs with charities, 90 percent of that giving comes from individuals. You'll often hear the 70 percent number, but then if you take into account the fact that foundations are almost entirely individual wealth that has been moved into a private foundation and combine that with bequests, you're up to $0.90 on every $1.00 is coming from individuals.

So in any nonprofit that you're working with, if philanthropy is a key part of what you do, working with individuals and having them get close to your organization is just critically important.

Okay, a question for the group. When you think about all this charitable giving that's happening every year, think in your mind: Who do you think is the largest charity in America? Who gets the most money in the last year?

Audience: The US government.

[Laughter]

Paul Schulz: The US government. They're not tax-exempt.

Audience: Foodbanks.

Paul Schulz: Foodbanks. Any other guesses? Give me a name, though. Give me a name of a –

Audience: Red Cross.

Paul Schulz: Red Cross, good guess. Any others?

Audience: United Way.

Paul Schulz: United Way, great guess. Any others?

Audience: Cancer Society.

Paul Schulz: Cancer Society, great guess. It's Fidelity. Fidelity is your number-one charity in America. Surprise some of you? Let's look at the top ten. Here's your top ten. Not sure if you're contributing to Fidelity or Goldman Sachs. I'm not sure if they're passing the hat around.

The reason six of the ten are on this list is something called a donor-advised fund. I hope you all are familiar with or become familiar with donor-advised funds. They are an easy, efficient way for people to open a fund and then give money over time.

So we have them at the California Community Foundation, but many other organizations, and particularly financial intermediaries, have discovered donor-advised funds. So they have the money. They have the client. Why not set up a fund?

So this is what your top ten looks like now. So you've also got Schwab on there, Silicon Valley, the National Christian Foundation. That's donor-advised funds – and Vanguard Charitable. They are funds that then will be released to individual nonprofits, but there's a lot of discussion around donor-advised funds right now because this is what your top ten looks like.

And so people are asking questions about that, and they're asking questions about Fidelity as well as the California Community Foundation in terms of, "Okay, is there transparency? Is that money getting out to the donors?" It's become a real interesting topic of conversation.

But the role of intermediaries within philanthropy has grown tremendously over the past several years. So not only financial intermediaries, but CPAs, estate planning attorneys. Private foundations are a huge part of giving, and I expect that trend to continue.

How do charities make their money? So philanthropy is an important part of the mix, but it is by no means the exclusive part. This is an interesting test for any of the nonprofits where you sit on their boards, and that is where is the revenue coming from.

Three-quarters of the revenues for nonprofits come from fees that are charged. So think back to the universities. Think back to the hospitals. They're charging fees to their clients and their patients and their students.

Yes, contributions and endowments make a difference, and then individual government grants. But most of the good nonprofits that you see or that you will work with have a revenue stream outside of and in addition to fundraising. This is a great area to explore for those boards that you're on.

The industry is growing. If you think of this as an industry, nonprofits are up to almost six percent of GDP, and I expect that to continue in the coming years. So it is a real force within the economy of the United States, and it will continue to grow.

Now different sectors are doing some very well, some not so well, when you think about where that money is going and where the growth is going. So we saw the donor-advised funds. That area continues to explode. I think Fidelity will add probably another $3 billion to their total in 2017. So they'll go from $4 billion to $7 billion, unprecedented growth compared to a regular nonprofit.

Colleges and universities are doing phenomenally well, particularly the top 50 universities. They are just on an absolute roll. Children and youth in international have done particularly well the last five years.

An area that has not done so well in growth, social services: only five percent growth the last five years. That's not even keeping up with inflation. If you look at that as a share of the largest 400 philanthropies in America, they're taking a real hit.

This is the social safety net. These are the organizations that work with the least well-off in your communities, and they're absolutely taking it on the chin. So when you think of philanthropy, it's really – it's *A Tale of Two Cities* right now. Just like there is across a lot of America, it's no different in the nonprofits.

If you're a major university, if you're a major hospital, you've got it figured out. You've got your legions of fundraisers. You've got an effective board. You're raising lots of money.

If you're a small to medium-sized social service agency that doesn't have the professional fundraising or they work in a very small geography, declining share of revenue and contributions over the past several years, and that trend is not going to reverse itself. So that's tough when you look at the real safety net within America. The groups that support that are suffering.

I'd like to switch for a minute to talk briefly about observations of nonprofit boards. One of the things that struck me struck me over the years is the difference in culture and climate on a nonprofit board versus a for-profit board.

Can you raise your hand if you have been or are currently on a nonprofit board? Please raise your hand if you have been or are currently on a for-profit board. Terrific, so we have lots of comparison points to be able to make here.

From the boards that I have sat on, and here's a few of them, over the past 20 years, I would see the same people, the same backgrounds, the same intellect, the same energy on a nonprofit board that I would see on a for-profit board. So the type of people that I'm interacting with, very similar across those two.

But when I would go to my typical nonprofit board, the culture was completely different. The culture would be let's say very sympathetic, very collegial, very supportive, often talking about stories or narratives. But there would be a real coming-together of that board.

I've taken a shot of my last nonprofit board meeting, and I want to see if any of you can relate to this.

[Laughter]

There's some singing, some dancing, a lot of, "Attaboy."

I wish you could write down every time someone says, "I'm really busy. I'm really busy. I'm an executive, and I'm super busy." A lot of talk about constraints: "We're constrained. Our executive director is underpaid, and it's hard to find good people." So there's a little bit of, "Well, we're doing the best we can."

Now contrast that with your for-profit boards that you're thinking about. The for-profit boards that I have been involved in, it was, "What's the best idea," and, "Are we going with the best idea," and, "Whose bringing up the best idea?" They talk about market share. All things that are equally important in the nonprofit world, but are fair game for the board-level discussion in a for-profit board.

With my phone I was able to capture my last for-profit board photo.

[Laughter]

It was a little contentious. But the main point of it was everybody wanted to contribute. Everybody had something important that they could add to the meeting, and they spoke up. It reminded me a little bit of the last panel here.

There's too often on nonprofit boards where I feel like we're passively investing: "Someone else is responsible for it. I'm there because a friend asked me to be there. I like the cause." But you're being quiet.

And I heard this a lot last night. "Why didn't we bring up that issue with the executive director? We know that person has experience in that area. Why didn't they bring it up?" I would posit it's because it's the culture. The culture is very different. And I think that does a disservice to nonprofit boards.

So there's three areas that I think nonprofit boards in general could benefit from. For those of you who are on high-performing nonprofit boards, and there are many of them, you're already doing this. So I'll go through a few, but in my general observation, about a quarter of nonprofit boards are probably helping the organization and doing a fine job, but there's probably three-quarters that really need a lot of help and could do things differently.

If you're on one of those boards, I'd love you to consider are your boards doing these kinds of things? Are they doing financial reporting? And we'll talk a little bit more about that. Do they measure performance in a meaningful way? Do they evaluate themselves? Do your boards evaluate themselves in any kind of a formal process?

So on financial reporting, there are some very basic things that I see on the for-profit side. Everyone has an audit committee. That's just a basic. You have an audit committee. If you don't, how are you sure of the numbers that you're getting?

Second thing that was very common on the for-profit side is of course everyone has a budget and everyone has actuals. But on the for-profit side, we were much more stringent about making sure that we reviewed those not only quarterly, but then after the whole year: How did we do relative to what we said we were going to do?

I have been on so many nonprofit boards where we would set up the budget, we'd go six months into the year, and in the seventh month, it's, "Okay, let's look at next year. Okay, what's the budget gonna be for next year?" And all of a sudden, things get forgotten about this year.

Sometimes for executive directors and the management teams that can be very convenient. But it can be incredibly useful to say, "No, let's look for the full year how did we do."

Performance measurement exists, but there's a lot of research that says board members are not satisfied with what is being measured by the nonprofit board. Now it's more difficult in a nonprofit to measure performance than it is in a for-profit. Having been on both, I think that's quite clear. But it doesn't mean that you can't really drill down and understand how your organization is doing and what it needs to be doing effectively.

Let me skip to this. Stanford did a series of questionnaires surveying board members and asking questions around organizational performance: How many of you are satisfied by it? And in the detail of the study, what they talked about was, "Look, everybody does some performance of the organization."

But board members were incredibly dissatisfied that the performance they were measuring actually tied to the mission and the strategy and the annual goals of the organization. So there's a sloppiness there that's being detected. Three-quarters of board members are not happy about that.

To me, that says it's an opportunity for you as a board member to reach out and try and see if you have the right metrics; you're measuring them. Are they quantifiable? Would they make a difference if you were to meet those goals?

Board performance evaluation. Again, I've been on boards where I was evaluated on an annual basis. Oftentimes, it's a one-on-one discussion with the executive director or maybe the board chair, but on the good boards you know where you stand and you know if your contribution is making a difference.

On the so-so boards, that often doesn't come up. Again on a survey from Stanford, yeah, a third are getting it right. A third are evaluating themselves on an annual basis, but two-thirds are not, and many are never evaluating how they're doing.

So how do you know where you stand as a new board member? It's very difficult, especially if you don't have things written down. So there are basic, basic ways that I think nonprofits can make a difference, and so many of you are on nonprofit boards.

So my general observation would be the analytical rigor that you're applying today in sessions like How Are We Doing with Our Money and How Is It Gonna Grow, use that same rigor and that same analysis and the same skills that you bring in life, bring them to your overall nonprofit board experience because you can make a huge difference.

So, yes, you're asking harder questions. Sometimes there's a little bit of a pushback. But if the goal is to have a high-performing nonprofit organization, these types of questions can really make a difference for your organization. So don't be the passive investor, be the active investor.

Finally, don't leave those skills and services at the door. Bring them into your nonprofit experience. We need you right now. We absolutely need you in the nonprofit sector. We're at a difficult time. There's a lot of challenges out there. Many of you are already doing that.

So just make sure that the organizations you're supporting are being effecting and that they're having impact and that you can measure it. If you can, then you're helping make a difference. Thank you.

[Applause]

Questions? Yes.

Audience: Talk to me a little bit about the social service aspect of the Community Foundation and the anemic picture there. I'm involved with a foundation up in Oregon, and we're seeing – it's a private foundation. But we're seeing a lot of movement in the private foundation world toward inclusion, diversity, and social service. I think it's not just in Oregon. I am curious if you could respond to some of that.

Paul Schulz: Yeah, absolutely. So the question was: What are we seeing at the Community Foundation around social services and particularly some of the movement around diversity and inclusion? I would say as a whole within the nonprofit sector, certainly in Los Angeles, there is a huge emphasis on diversity and inclusion.

The biggest challenge that we've had I would say is a lot of it starts on the funding level. There are so many small and medium-sized effective social service organizations that are dealing with half the revenue streams that they dealt with five years ago. Many of them are either closing down or they're shrinking their footprint, and so they're not able to be effective.

The private foundations have not been able to fill that gap, at least not in Los Angeles, and the government is certainly not filling that gap and won't be in the foreseeable future. I think a lot of it starts with just the revenue and the economics.

There's a tremendous amount of angst in the nonprofit community, certainly in Los Angeles, around the State of the Union, and I think that angst and that anxiety, it really wears on the sector. It's made it very hard for a number of those individuals.

Less so I would say at the Community Foundation. We have benefited from some of this *Tale of Two Cities* that we talk about. Most of our clients are high-net worth or ultra high-net worth individuals who are doing quite well. So that's part of the reason we've seen record contributions over the last couple of years is some folks are doing incredibly well in America.

What's interesting is most of those donors choose not to give to social services. We give our endowment dollars to social services and to that safety net and to the least well-off. But a lot of our donors, and we work with them wherever they want to go, we would see a lot more money going to universities, going to hospitals, going to their religious organizations. That's what they have chosen to focus on. But it does make it quite difficult.

Audience: In those statistics, if my donor-advised fund gives to the local Red Cross in Orange County, does that show up as a donor-advised fund or does that show up as a benefit of the social service piece of that statistic?

Paul Schulz: It depends on which statistic you're looking at. Initially it would show up as a donor-advised fund. So when you're seeing that top ten, the money that you donate to a donor-advised fund, it would show it the year that you made the donation in.

Now what that means is community foundations and donor funds are major providers to the nonprofit community in Orange County and elsewhere. But that's masked a little bit because remember we're a public charity.

So you've already donated to charity when you give to your donor-advised fund. It's almost at that point then charity to charity, so it does mask the numbers a little bit. But I will say for most donor-advised funds, the majority of it is still not flowing to the social service sector. I hope that helps. Yes?

Audience: Going back to your slide there about the top ten, which kind of blew me away. I've never heard of these financial institution charities, and I've been a Fidelity customer for 30 years. So that's kind of strange.

What is the benefit of giving your money to a financial institution's charitable arm versus directly to charities?

Paul Schulz: Great question. There's a few benefits that have really taken hold that are driving a lot of the growth that you'll see here. Number one, as soon as you make your contribution, you get a full tax deduction immediately.

Second thing is you can invest that over time, either with the institution – "We have an investment committee. We'll invest your money for you" – or in some cases, if you're large enough, you can even keep your fiduciary interest in your money. It can grow over time.

A third big area is, "I want to give to a variety of charities." So they'll treat that fund as their charitable checking account. It's just simpler to go online and send those three checks out or those five or those 15.

Another area is if you are getting lumpy income. We often see our funds are set up when someone has a liquidity event, for instance. So they sold their company. They want to give some to charity, but they want to give to that charity over time, but they've got a nest egg, in effect.

So they get the full deduction, they put it in a fund, and then they pay that fund out over time to the charities that they care about. So those are some of the reasons that people are choosing these donor-advised funds.

The other area is it's a bit of a substitution for a private foundation. So even though private foundations have something on the order of $800 billion in assets, the donor-advised fund is a good substitute for that, particularly if it's a small to medium-sized fund.

So anything under let's say $5 million, it makes in many ways a lot more sense to just open a fund. You can call it the Schulz Family Foundation, but it's actually a component fund within a community foundation. There was one over here. Two, okay.

Audience: Paul, in the for-profit world, we hear of mergers and acquisitions, economies of scale, or the sum is greater than the total of the parts, and so on. It would seem to me there's some merit for some consolidation and mergers in the nonprofit world for the reasons you just specified.

Paul Schulz: Absolutely. If you've ever looked at the nonprofit sector, it's completely subscale. There's 50,000 nonprofits in L.A. County alone. The vast majority, 90 percent, of those are subscale from a business standpoint. A sustainable business, they're not there.

There's no market mechanism in philanthropy to do what happens in the for-profit sector. You'd never last in the for-profit. You'd go out of business or you'd get bought. That doesn't happen in the nonprofit sector.

We've created a sustainability fund where we encourage those in Los Angeles to do exactly what you're saying: "Hey, come together and talk about the power of a merger or an acquisition, in effect, but the coming together of organizations."

The number-one reason that doesn't happen, because it rarely happens, is ego. Ego gets in the way. And it's not just executive directors. Oftentimes it's board members, too. The ego gets in the way of the mission of what are we trying to accomplish, unfortunately. Yeah?

Audience: Following up on the question on the donor-advised funds, is there any record or regulatory requirement or information regarding where that money goes as it flows to the end user, to the charity?

Paul Schulz: Yes, there is. We record an aggregate. You can look up any community foundation. They're 990, and in the 990 it would state every organization that received funding from us. There's tens of thousands of them. So you would see them all listed.

Now what you won't see is you won't see which fund donated – which fund granted the money. You'll see it in aggregate, because we are considered the nonprofit. So there is visibility at that level. Yeah, here and then back.

Audience: With the new tax law, do you think that's gonna affect charitable giving?

Paul Schulz: I do think it's gonna affect charitable giving, but I don't think it's gonna affect it dramatically. Charitable giving, I think we'll have a record year in 2017. I think that will play out.

We're on a nice run since the Great Recession. Giving dipped during the Great Recession, as you might expect, and it's been coming back very nicely the last few years. As long as the economy stays fairly healthy and the stock market doesn't crater, you're gonna continue to see good contributions.

Now most of the tax code, it's not specifically helping charities. The standard deduction has gone up. That makes it easier to not itemize your deductions. The estate tax benefit that exemption has doubled to over $20 million. So there's less of a reason to give to charity.

What I know you are gonna continue to see is a bifurcation. Those in the middle class and below will continue to give less to charity. They feel increasingly stretched on a variety of fronts. The high net-worth and the ultra high net-worth I believe will continue to give to charity in record numbers because that's how they want to influence the world and that's how they want to give back.

Audience: Taking a look at the corporate world, either public or private but of size, what percentage of the corporations have some sort of commitment formalized in their bylaws in terms of giving a percentage or some percentage every year?

Paul Schulz: That's a great question, and I don't know how many of them have it in their bylaws. I think that's a great question, and I'd like to take a look at that. I do know that there is a very strong trend for corporations to be socially responsible.

When you look at the interviews and if you have Millennial kids or if you talk to Millennials, they want to do business with companies that give back. So that ethic is very strong today.

There's even a separate class of corporation called a B corporation where you can formally include social benefit as part of your bylaws. So it doesn't have to be just maximization for shareholders and for the boards. You can literally give back.

There are successful organizations that have been built on that model. Think of like a Toms Shoes model where it's absolutely a business, but it's really founded upon giving back in a variety of places around the world. So I think that trend will continue.

What we are seeing, though, is corporate giving is lackluster at best, and it's showing no signs of accelerating. So the money is still with the individuals. It's not really with the corporations.

Audience: Thank you.

Audience: Paul, is there a process for other nonprofits to apply for grants from your foundation?

Paul Schulz: As a matter of fact, there is. Yes. Most community foundations will have a vetting process, and it is very much open to the nonprofits in the community. So you can find that on our website. As we focus more and more on those four key areas, there's lots of other needs of course in Los Angeles. But with limited dollars we have to be pretty narrow on it.

In our case, we have about $600 million in somewhat unrestricted endowed dollars. So we're granting out about $30 million unrestricted that's board-controlled. Now within that board control, you want to hear from the nonprofits their ideas and what their effective solutions are. So that's where the grant process comes in. But, yes, they can apply online, and then they work with the program managers to make sure there's a good fit. Yes?

Audience: Have community foundations promoted donations for social services, and what's been the effect of that if they have?

Paul Schulz: I believe that they have. I know that we have at the California Community Foundation. One of the ways we do it is by having sessions where we'll get together the key nonprofits that are really making a difference with a donor base. So we've got about 800 active donors, and by creating that opportunity where they can come here and see and experience something that is challenging for the community, it creates that touchpoint that they wouldn't normally have.

So in our case, we would normally do it through high-touch specific events. For instance, on homelessness, we would gather the leaders in homelessness and those that are building permanent housing, and create a forum where we might have 40 or 50 of our donors come and learn and listen about what's going on in Los Angeles.

I would say that what we typically then find is there's a few donors, maybe three or four out of this 50, that want to go deep and want to really make significant contributions. Most donors are pretty set on what they like to give to. So it is unusual to bring someone on board, but we do view that as part of our mission.

Audience: You were talking a little bit about measuring the effectiveness of the board and the organization. I'd just love to hear your thoughts a little bit about measuring the effectiveness of the giving or the impact that you read a lot about, especially as you hear about trends in the Millennials and what they're interested in, not just understanding where they give but how it impacts what the ultimate cause is. I'd just love to hear your thoughts on the challenges and where that's headed.

Paul Schulz: Yeah, absolutely. I think measuring the impact has been a long-term trend in philanthropy, and it's talked about a lot. But what I often see is a disconnect between what the nonprofit wants to provide and what the donor is seeking.

Most nonprofits are really good at storytelling and really good at providing a narrative and showing you a client that's benefited. Studies show that that's the most effective way to get you to give is tell a story. What they're less effective at is really understanding and being willing to do the hardcore metrics and analysis that really looks at how they're doing, almost like a business would do.

That I find is often lacking, and there's a lot of factors that are involved in that. Some of them are just experience and skill level and ability to do that type of thinking. Some of it is just an inability to really make implementation of data that they can honestly say makes a difference.

If you think about some of the studies I've seen where they will really measure a nonprofit almost on a blind basis of were clients actually benefited by your organization, if you're a nonprofit that's incredibly risky, 'cause it could come out that you're not benefiting them.

Okay, now where do you go with that, right? So there's a huge lack of desire I would say that's not talked about but is felt on the nonprofit side. Having run a Red Cross and been involved in other nonprofit boards, yeah, you want to be open and you want to be transparent. But at the end of the day, you are trying to so hard just to keep the doors open and keep everybody employed and keep the clients satisfied that it often falls by the wayside to do the type of rigor that you're talking about. Yes?

Audience: What kind of characteristics do you see in families who are very effective at intergenerational philanthropy?

Paul Schulz: Intergenerational philanthropy, it's a fascinating topic. We had a tremendous talk by a couple of philanthropists in L.A. just recently on that topic. One of the things that came out loud and clear was they started at a very early process.

Some of the most effective families that I've seen are those that introduce the kids to philanthropy, and kids want a hands-on experience. So it's not always the sit-down, "Let's decide how much money to give," let's say during a holiday season.

It's, "Let's go put a meal together. Let's go do something physical," where they can touch it and they can feel it. And then that leads to the conversations in the car on the way home. That's the part that I see that is most effective.

In most communities, and it's certainly true in L.A., most people in high-net worth communities don't go to low-net worth communities. They're not familiar with and they don't tread in areas that are either not comfortable or not safe or they just have nothing to do there.

The intergenerational giving, if you couple it with the right nonprofit or the right community foundation, creates opportunities for you to go experience things that you wouldn't normally experience, do it in a completely safe way, but where you can start to have those conversations in the car on the way back. So I think that's extremely important.

The second thing I see more of is I see a lot of families who, yes, as the kids get older, and let's say that they're Millennials now, having the annual meeting and really talking to them about the family net worth and this component of the net worth that they want to give away.

A lot of families are very reticent to do that, and I still meet lots of individuals who haven't told their kids how much money they have. These are folks that have $50 million, $100 million. My perspective is the kids are a lot savvier than they think they are.

So there's an opportunity to have an honest conversation there about the type of wealth that the family has and where you want to go and what is that money for. So the best conversations are, "Yes, we have money. We're very gifted. We're lucky. But what do we do with that money? What's important to us?"

They will often gravitate around things to speak to others and speak of having an impact. When they do, that's the most rewarding part because there's nothing like – you're all on nonprofit boards. There's nothing like that feeling of giving back and getting outside of yourself and seeing real problems in the community as opposed to some of the problems that we have to deal with. Yes, some of them are real, but some of them you would wish for those problems if you lived in some communities.

Audience: I've served on boards probably for the last 40 years of nonprofit and raised actually $50 million to $100 million in charitable donations. The one thing I've noticed over the last ten years, when you talked about the social services are having more problems, is that large donors now want a more hands-on or a more targeted item for their money.

They don't just want to give that money to the organization because what they're seeing especially is that the organization doesn't use the money in a wise manner. That's what I think is the problem that you have with social service organizations.

Paul Schulz: I very much agree with that. I also think it's a little bit of an evolution. People used to give to United Way, and then United Way would give it. Well, people said, "Wait a minute, I know which cause I want to give it to."

So accelerate 30 years, and now it's like, "Okay, I know what cause I want to give it to, but now I want to make sure – what's the program that I'm supporting in doing that?"

One thing you've reminded me of that I would like to talk a little bit about is this notion of overhead costs. So that's often a shortcut that people will use: "Well, what's your overhead rate?" First of all, that number can be gamed. You give me any number, and I can game a number, okay?

Secondly, what it forces many nonprofits to do is not make investments in human capital or other things that make them sustainable. When's the last time you asked Google what their overhead was, or Microsoft or Amazon? Who cares? What you care about is impact.

So what I'd encourage you all to do, measure the heck out of impact. Who are you helping? How do we know that? How can we prove it? Why is that group better off than the group that we didn't help? Those are great questions. Overhead rate, eh. Talk to me about impact.

But I understand why we do that, and I used to do that as well because that was my surrogate for, "Are you just feeding yourselves or are you actually doing the good work you claim to be doing?" I just happen to think it's a really bad surrogate. Okay, one more. Yeah.

Audience: It's actually more a comment than a question.

Paul Schulz: Go for it.

Audience: My family, we have a family foundation. We have a family foundation. We've been around for 28 years in San Diego, and along the way we learned a few lessons. To others that are in a similar situation, you might have learned the same thing.

But we've learned that we're not an annuity, that when we go in and provide funding for a group, we say, "After five years, we're gone." We pick a timeframe. "We're gone." It gives us a graceful exit. "Don't count on us."

Paul Schulz: They know it's coming.

Audience: "We may be back in a year or two, but you're back in the mix." We also want either a board seat or attend at least one board meeting before we put money in. If it's over a certain level, it's either a board seat or visitation rights. So we want to make sure that they're worthy of the next time around. We want to see the work that they do and understand whether they're serving themselves or the community.

So for others in the same situation, sometimes it's hard to say no.

Paul Schulz: Yeah, there's no shortage of requests.

Audience: Exactly. And some of these things don't get a lot of support. My colleague here, Jeff, and I are on a museum board in San Diego. It takes $1 million a month to keep the doors open. We have a $50,000.00-a-month electric bill.

How do you raise money to pay the electric bill? A big question. You can't put your name on it. We wish we had more walls. Walls are always good. But those are some of the things that we have learned in all of this.

Somebody over there stole my question about mergers and acquisitions. I've done a lot of that in the private sector, and I have yet to be successful in the nonprofit sector of putting two organizations that obviously need to get together together. It's ego and siloing.

Paul Schulz: I couldn't agree more.

Audience: It makes me crazy.

Paul Schulz: Though, the one tip that you reminded me of, John, that I have seen successfully used, and I think it will be a continuing trend, and it kind of addresses this overhead question: if you can get the insiders to pay the electric bill, if you can get the board and others who are committed to the cause and know that, look, the dollars are fungible.

So we can pretend they're over here, but we really understand this is supporting the organization. If board members will support the overhead and the electric bill, you can go to funders, especially outside funders, with a more compelling story because you can say things like, "A hundred percent of your dollar is gonna go to programs and services because we've covered the overhead and the administrative burden."

It's a little bit of a shell game, but I tell you it's amazingly effective when you talk to donors, particularly those who aren't insiders to your organization.

Audience: There's one other thing we've learned from actually the Jacobs Foundation, the construction company, not the Qualcomm company, in San Diego is we use our balance sheet. And so rather than give outright grants in some cases, we'll be a line of credit guarantor.

So if somebody is in danger of missing payroll and they need $100,000.00 or whatever, we'll put up $100,000.00 on the credit line out of our balance sheet that they can draw down on if they need to so that they have time to recover. We figure if they lose it, then it's a grant, and that's the way it is. But it also gives financial discipline to the organization to get well.

Paul Schulz: Absolutely. I would encourage you to use your balance sheets where prudent. We have begun experimenting with our donors in not just making grants, but making loans. The permanent housing that we're supporting in Los Angeles, we've opened a loan fund with our donors where they will provide early money to get the project going, and as soon as they secure the loan from construction, it pays back the initial cost.

We've raised about $5 million that way, and it's helping expedite the permanent support of housing that's going on in Los Angeles. So don't be afraid to use your balance sheet.

Thank you so much for your time, and more importantly, thank you for your service on those nonprofit boards. I know you can make a difference.

[Applause]

Bob: Great. So don't everybody just get up and leave. There's no break. Next panel is on fixed income, and Mike Laven will be ushering our three guests to the stage. Mike, I guess I'll let you do the introductions of your guests.

Michael Laven: Thank you, Bob. I'm Mike Laven. Nice to see everyone. This is the credit panel. We're going to be talking about assets that probably just about everyone in the room owns but maybe, like Jim Paulsen, wonders why. It's interesting because the credit markets are so important, but it's equities that get the headlines Dow 26,000, everyone's familiar with that.

But the credit markets really make the world go around. It's the extension of credit to governments, to businesses, to individuals that make our global financial system work. They may seem boring, certainly at times like this when interest rates are low, when volatility is also low. But during times of spike volatility or turmoil in the financial markets, all of a sudden they become very, very interesting.

So we're gonna talk about fixed income, we're gonna talk about credit, but more broadly we're gonna be talking about the economy. We're going to be talking about investor behavior, and we're gonna be talking about risks and opportunities.

The three gentlemen to my left have had very distinguished careers. We've known each of them for quite a while. To my direct left, Tad Rivelle is the chief investment officer of Trust Company of the West, which oversees I think as a firm $200 billion, $180 billion of which is in fixed income, including about $100 billion in mutual funds under the brand names of TCW and MetWest.

Prior to becoming the CIO at Trust Company of the West, he was also the chief investment officer at MetWest, which over time had won a number of awards for its performance over multiple cycles, including Tad and his team being recognized as Morningstar Fixed-Income Manager of the Year in 2005. Tad is a graduate of Yale with a degree in physics, applied mathematics master's from USC, and an MBA from UCLA.

To Tad's left is Jeff Aronson, managing principal and the cofounder of Centerbridge, which is a $28 billion firm based in New York investing primarily in the world of private equity, credit, distressed strategies, and real estate. He is, as I said, a founder and manager of the management committee.

Prior to joining Centerbridge, he was a partner at Angelo, Gordon, a firm that we'll also work with over time in the distressed debt and real estate areas. Prior to that, he was a securities attorney. Jeff is a graduate of Johns Hopkins, where he chairs the board of trustees. He's also on the board of the medical school, I believe. Also a graduate of NYU School of Law, where's also on the board.

To Jeff's left is John Fekete from Crescent Capital. Crescent is a firm based in Los Angeles, $25 billion under management, specializing in all forms of below-investment grade credit investments. John is the lead portfolio manager for the high-yield bond fund and their bank loan strategy as well as what – and many of you have exposure to, the high-income fund, which actually is a combination of both high-yield bank loans and some private debt.

John's had vast experience even prior to joining Crescent in credit analysis. He's an MBA graduate of Cornell and undergraduate from the College of New Jersey.

So this is our panel, and I really wanted to – besides the bios, I wanted to start with, in a way, a question that will allow the audience to get to know you a little bit better as investors. So if we can just kind of talk about the things that really forged your investment philosophy – either the person, people, mentors, or experiences that you've had early in your career or even more lately – that have impacted you and the way that you look at the capital markets.

Tad, I'm looking at you, so I'll just start with you.

Tad Rivelle: All right. Well, thank you for that. Actually, rather than speaking grandiose terms about how the investment philosophy evolved and developed over a long period of time, I'll just share a quick anecdote. So I cut my teeth on fixed income about 30 years ago at a local firm, PIMCO, and Bill Gross of course was still very much large and charge even 30 years ago. When he schooled you on something, you usually remembered it for a long time. I remember some of these to this day.

So there I am. I'm new to the organization, and I'm looking at one of the investments that he's actually been making personally. I decided to comment on it. Okay, one mark in the bad judgment department. I used this newfound skill and knowledge, and there was a whole quantitative culture that was coming together in bonds. I was out of business school, and of course I knew everything already.

And so the comment I made is that, "Well, it's an interesting investment, but when you run it through a quantitative options-adjusted spread model, it really doesn't look all that appealing or interesting."

And Bill calls me over. He reads the memo. It was before e-mails, of course. I remember he looks at me in the face, and he says, "You see this bond here? You see this bond here?" It was a callable bond. He says, "It's ten percent to any day, any day."

Essentially what he was basically saying is, "You've completely lost the forest for the trees." He didn't say it that way. He basically said, "Don't you know how stupid you are commenting on it?"

[Laughter]

And so I guess I maybe started down the road of hopefully greater wisdom, beginning with the humility to recognize that, actually, you don't really know all that much ever in this field, that it takes a long time, and you're always learning something.

Michael Laven: Thanks. Jeff?

Jeffrey Aronson: I don't have such a colorful anecdote. I've been investing for about 30 years. I had a very brief, undistinguished career as a lawyer where I crashed and burned, and I found my way to Wall Street at a firm which arose out of the ashes of a firm that had gone bankrupt.

The firm that had gone bankrupt was a midsized brokerage firm. It was called LF Rothschild, Unterberg, Towbin. There are probably one or two people who may remember that name.

And out of the ashes of that firm came a firm called Angelo, Gordon. It was started by two gentlemen, John Angelo and Michael Gordon. I worked at Rothschild with them, and I became an analyst.

The phrase "hedge fund" really wasn't in the popular vocabulary at that point. This is end of '88, beginning of '89, and we were called a nontraditional money management firm.

John Angelo cobbled together some money – it was about $130 million – really from friends and family, all high-net worth individuals. There were no real institutional investors who were looking at what we were doing, and we were doing all types of esoteric stuff.

When I met our clients, and I had never been involved in investment management before, it quickly became apparent to me this was their money. It wasn't a faceless institution. The people that I was chatting with, this was their hard-earned money.

That was something that both John and Michael continued to emphasize, and I worked with them for many, many years, that, one, never forget it's not your money. I think people who do what we do, we tend to forget it. We have clients, but it's not – in a way, it's kind of an abstraction.

And the money does belong to real people. When you're managing institutional money, you have pensioners, for example. It is their money. That is something that always stuck with me and that I try to tell our younger people, "It's not your money."

You can be frivolous with your own money. You can buy a sports car. You can go gamble. You can't be frivolous with someone else's money.

And the most important thing as an investor, and I believe this, don't lose it.

[Laughter]

I tell people, "If we don't make a lot of money, that's not a disaster." It's not great, but it's not a disaster.

If we lose money in what I call an uncontrolled fashion – so we always take risks. If you're a skier, if you don't fall, you're not pushing yourself hard enough. But don't lose money in an uncontrolled fashion, and that was something that both John and Michael taught me that has stuck with me to this very day.

Michael Laven: Thank you. John?

John Fekete: For me, I think it was an experience, and it was coming out of college. When you're getting out of college, you have a high level of energy, and you feel like day one on the job, you're gonna make this huge impact. I went into banking, and to commercial banking is where I started. I expected on day one we were gonna start driving around, making loans, handing money out. And thank God we didn't.

The bank had a different plan for us. They had a two-year training program, which was tremendously influential in my career, where we spent two years basically in a classroom at the bank headquarters learning about financial statement analysis, learning about how to value collateral, learning about how to write contracts.

It's not the most exciting stuff, but in terms of understanding that and using that to build upon that foundation to go out and do things today like buying high-yield bonds or extending private credit, things of that nature, even though it was 25 years ago, it's still something that today I remember. I think it was really, really helpful.

I built that foundation and then decided commercial banking was a little bit too boring for me. But I'm very grateful for the opportunity I had to build that foundation. It's really helpful to me today.

Michael Laven: Great, thank you. So I want to turn to the economy and to interest rates and thinking about some of your comments about having humility, don't lose money, building blocks of a career in credit analysis. It is widely anticipated that the Fed will continue to raise interest rates maybe three or four times this year. We're going from a phase of quantitative easing to quantitative tightening.

Question, and again I'll start with you Tad: What impact do you think this might have? How dire might it be as we start to see interest rates?

You weren't here this morning, but I think I mentioned when we were outside that our first speaker, Jim Paulsen, thought by the end of this cycle we'd get up to a ten-year Treasury at 4.5 to five percent. We had somebody on the equity panel saying that they didn't think the economy could survive that so it wouldn't get that far.

But where do you see interest rates going, and how tough might the impact be for fixed-income investors?

Tad Rivelle: Right. If I could phrase it this way, is it a big deal that the Fed is tightening and that the central banks in general are taking away the punchbowl, in some cases a little bit reluctantly?

But in the Fed's case, they're probably more painted into a policy corner than many acknowledge, or they themselves for that matter. We obviously have an economy that in many respects is seemingly pretty close to full utilization. There's certainly anecdotal stories of wage pressures and price rises.

I think one of the things about inflation is it's one of those things that it's probably very difficult to measure, and by the time the bureaucrats have figured out that you actually have it, it's probably so readily apparent to everyone else in the capital market that it's a bit late.

But being a bit simplistic about it, if you're the Fed and it's four percent unemployment and you have all of this optimism and you've got basically a galloping freight train with respect to asset prices, if you can't raise rates now, when would you think would be a better time to be doing it?

And if you don't think that there's a better time to be doing it, then you're in effect already implicitly making a judgment call that you're going to end the cycle more or less at around these rates.

So I think that the big story of this cycle obviously has been, as we said, what the central banks have been doing, their support for the capital markets. I'll express this in opinionated and maybe terms that others don't necessarily have to accept. They've been falsifying asset prices so as to encourage both animal spirits and credit creation.

So I think that some of the things to watch is not only the reversal from quantitative easing to quantitative tightening, but also maybe, very importantly, and this is maybe – if I could put this in maybe a less humble way. I think this is one of the issues that fixed income maybe can provide as a more fundamental insight that I think sometimes gets overlooked, not by everyone of course, is not so much where are the rates going, but what's happening to the yield curve, which seems like, "Well, who cares? That sounds as technical as anything. What's the difference? Ten-year rates versus two-year rates, flattening of the term premium."

What matters I think is that whatever the reason that causes the shrinkage in the spread between short rates and long rates, the reality is, is that every financial intermediary on the planet lives on leverage. You basically have a business model that essentially borrows shorts, lends long.

When there's significant net interest spread, you have significant incentive to create credit. As that spread starts to disappear, your choice as a financial intermediary basically comes down to this. I either say, "I've got the same amount of capital at risk for less net interest margin. Maybe I should delever." And if too many people do that at the same time, we know the consequences of it.

Or others say, "You know what, I'll keep the same amount of capital at risk, but what I'll start to do is see if I can start to impose a higher credit premium at the yield curve and start to in effect justify having six, eight, or ten turns of leverage on my overall balance sheet."

And so if that yield curve continues to compress because of the Fed tightening, I think that that's usually a pretty good signal that the party, it's gotten really late in the morning. It's time to go home.

Michael Laven: Jeff or John, how do you see it playing out in the corporate credit markets? Is the party over?

Jeffrey Aronson: I don't think the party's over. I'm gonna read you – I'm not doing e-mails. This was on my phone earlier today. It's a headline from *Bloomberg*.

"Investors Pile into the Ugliest US Junk Bonds. The riskiest US junk bonds have already gained 1.7 percent – that's for a bond – this year through January 17th." And it continues. That's a big number. That's a big number.

It's impossible to predict the future. Even Warren Buffett can't predict the future. What we like to think about are probabilities. What do we think is likely to happen?

The phrase we use in our office is "anticipatory thinking," not taking what's today and assuming it's gonna happen tomorrow, which is what most people do, but really trying to see around the corner as an investor. What do we really think is likely to happen?

And as we look at the landscape – and Tad put his finger on it. He used the word "cycles." We really deeply believe in cycles. We don't think that the world will continue inevitably like this forever. It will go like this, but it gets there like this. It's never, never, never a smooth line.

And when we look at the length of this cycle and when we look where earnings are and profit margins, which are also very high, and we look at the easy credit markets that we're all experiencing, and we look at unemployment rates – we have a little laboratory at our office.

We have a big private equity business. We own over 35 companies, everything from financial services to consumer businesses to industrial to health care. So we don't have to speak to an economist at JPMorgan to get their view. We call our CEOs: "What's happening?"

And we ask about the labor markets in particular. And you've all read this. It's really hard to hire people, really hard. Now interestingly that has not, at least at our businesses, translated into wage pressure. But as we just apply a commonsense framework, our guess is it's more likely than not that that will happen.

We put all of those things in the mixing bowl, and we believe it's late cycle. Predicting the timing of it is futile, and I don't think it's a good use of time. We try to do it all the time, and we're always wrong consistently, 'cause you only see the turn after it's happened.

But as we think about risk in our investments, we are certainly more towards the cautious side. I bet most people would say that. So you really have to distinguish between what people say – everyone always says they're cautious; everyone always says they're careful – and what people do.

When I look at how much cash we have as a percentage of our assets, we're well probably into the 20, 30 percent. So we actually mean it that we're being cautious, as opposed to saying we're really cautious, how much cash to have, about $1.00. And we have to be really, really careful.

We played this game recently at an investment committee meeting. I'll ask people here, what do you think is the likelihood over the next year or two there's an article in the *Wall Street Journal* that says, "Fed Behind the Curve"?

Audience: A hundred percent.

Jeffrey Aronson: I don't know if it's 100 percent, but I think it's high. So that's kind of how we think about it.

Michael Laven: Thanks. Jeff, you said something about viewing the economy through the lens of the 35 companies that you own in various industries, I presume.

That reminds me. John, I want to ask you about that, too. In 2013 you were kind enough to come to a board retreat for one of our mutual clients, and you were asked a question about how you saw the economy.

John Fekete: Oh, gee. I hope you didn't record that.

Michael Laven: *[Laughs]* Well, you gave a very good response. But the response was basically I think you said, "I'm not an economist." But the way that we tend to view things is through again the lens of, in your case, roughly 300 credits I think in the high-income fund, the businesses to which you lend money and how they are operating.

So that was four-and-a-half years ago 'cause it was in the fall of 2013, but it was earlier in this global economic recovery. We're all on seemingly more shaky ground. How do you view it today through that same lens?

John Fekete: That's the perspective that I would use again today is at our firm and my team we have over 300 portfolio companies that we're following every week, every month, every quarter. I think the perception out there is that we are very late in the credit cycle, right? I don't think anybody would really – not a lot of folks would take the other side of that.

But when you separate out the perception or feeling, which I think is a legitimate feeling eight years into a recovery, that you would be on somewhat shaky ground, the data says otherwise. This is what we have tried to do is focus more on the data.

So when I look at the portfolio companies, the perception that things are getting weaker is actually completely untrue. It's actually the opposite. The revenue and EBITDA growth of our portfolio companies is accelerating.

In the last quarter, the revenue growth was high single digits year over year. That's the highest in three years, and it's been growing. On an EBITDA basis even more with 20 percent year over year. Now a lot of that is because of the recovery in oil prices and the energy sector. Even if you take that out, it was over eight percent year over year growth.

So if you're thinking, "Okay, we're in the late stages of the credit cycle," but revenue and profitability for the companies in my portfolio is growing, not shrinking, and it's actually accelerating, you do have to scratch your head because generally from a fundamentals standpoint what we see from our companies, what we hear from the CEOs and from the management teams and we see in the numbers is actually quite strong.

There's no question that – first of all, I don't think I've ever seen a positive headline on high-yield, period. So *Bloomberg*'s headline doesn't really surprise me. But I think the things that we try to look at are fundamentals like that: revenue, earnings, leverage ratios. I think that's something hopefully we can talk about today.

The amount of credit that's flowing to very vulnerable, low-rated CCC companies is another thing that we look at to try to assess where we are in the cycle. Underwriting standards is another thing perhaps we'll talk about.

From what we see, I would say things look pretty good, and defaults, which is the number-one headwind that face below-investment grade credit, defaults last year were cut in half from the year before, and they're going even lower. This year probably two percent, give or take, of the market is expected to default, and that's a passive market, right? You're not hiring an active manager to make active credit decisions. Two percent is less than half the long-term average.

Again, you have this feeling that we're very late in the credit cycle, but if companies are growing and they don't have any debt amortization and they're not defaulting and there's very little stress in the system, it's probably not gonna happen this year.

Will it be next year? Will it be 2020? That I don't know, but I feel pretty good going on the record this year in saying we're not gonna be in a recession, that's for sure.

Michael Laven: Just taking that a step further and thinking about, whatever the eventuality is, the other side of the cycle – and Jeff, I'm gonna start with you on this question.

Given the generally good news, growing economy, low default rates, as you do look forward, timing aside, are there industries, are there sectors that you're concerned about where you think there are greater risks? And when you think about where you may pounce eventually in the distressed when that distressed cycle comes, what areas are you focused on?

Jeffrey Aronson: First of all, I would agree – I completely agree with you. When we talk to our portfolio companies, it's really amazing. Business is really good. Business is really good. Top line is growing. Profit margins are strong. When you look at broader markets, yeah, defaults are low. I don't think they're going up any time soon. Business is really good. So the economy is really good. We see it real-time.

But then we have to ask ourselves – it's the difference between how a company is doing, whether it's prospering, and then what's the right return. So business could be great, but then we'll ask ourselves, "Okay, that's great. If we're buying a business, if we're buying a stock, if we're buying a bond, notwithstanding that business is great, which it is, how much should I get paid for that?"

And that's something that we're concerned about: Are we getting paid enough? Even in light of a really good environment, even in light of strong earnings growth, are we getting paid enough?

In a way, I think it's harder for all of you because there's this notion: You have to put the money to work. That phrase makes me crazy, 'cause I always ask, "Why?" If there's nothing good to do, I think you're not supposed to do anything.

But that's easy for me to say because our clients have to generate returns. Whether it's a pension fund, whether it's an endowment, whether it's a family foundation, you have to make your nut.

That's why you couldn't give all your capital to a firm like us because at times in the cycle, we say, "We choose not to invest." But I don't think that's real world. You couldn't manage all your capital that way, otherwise you'd have a lot of cash. That's really not practical.

In terms of the things that we're worried about as we look at the economy, we don't see a lot of sectors of the economy that are under pressure or that we're concerned. We're paying close attention to commercial real estate. We think that there could be some great opportunities down the road there. There are opportunities today, but they're really eclectic.

We pay close attention to what's happening in automobile lending, and we think that there's a lot of exuberance there. There are always certain economies – excuse me, sectors of the economy that are in trouble. Retail, it's a popular whipping boy these days. But retailers always get into trouble.

I asked some of our younger people recently what was the most famous retailer ever to file for Chapter 11, and I had to point out it was Macy's. Most people forget. Certainly the young people in our office had no idea that Macy's in 1990 or '91 was in Chapter 11. Their competitor down the street in New York City called B. Altman had just liquidated, and so a lot of people thought back then that Macy's would liquidate.

Macy's is an example. Retailers go up and down because they're cyclical, and the barriers to entry are low. Now you have this further headwind. You have secular challenges in terms of online.

So that's something that we are concerned about, but I don't know if it's going to be a particularly ripe investment area for us because a lot of these companies are really troubled, and you question whether they're gonna come back.

But by and large, when we look at different sectors of the economy, there's nothing out there today that's screaming to us it's in trouble. We think about it from the opposite perspective: Are we getting paid enough to invest in a sector which is still thriving?

Michael Laven: Tad, I want to give you a chance to weigh in on your views on the economy. Big question, but take it anywhere you want.

Tad Rivelle: Well, maybe I'll synthesize a few of the points being made. I think there's a little bit of an emerging consensus. Entry points with respect to your investments, of course, duh, they matter. So even if you want to be agnostic and say, "I don't know if it's early cycle, mid-cycle, late cycle, I can't figure it out," that's reasonable.

You're still buying at pretty elevated valuations, which suggests that your go-forward returns, no matter what – you know what multiples, or you have a pretty good idea at least, of what multiples you're paying or what kind of yield proposition is being put in front of you.

I think another perspective is that – and I think most investors are this way, and certainly fixed-income investors. You recognize that there's a degree of mean reversion in the way the world operates. I guess that's another way of saying that there are cycles, of course.

So when valuations, or indeed any metric, has gone to a historical high or a historical low, there's usually a reason for it. It's that you've gone usually past the point at which historically mean-reverting forces were already sending you back in the other direction.

And so on the one hand you can look at the labor market and say, "My goodness, it's never been better. Four percent unemployment and worker shortages, this is great." The other perspective is that's usually around the level and the time when things start to change, and the trend in the data when it reverses on you tends to be oftentimes a lot more powerful than the level of the data.

When we look back at prior cycles, if this was 1999 or 2000, you would look around and you would say, "I don't get it. This environment has never been better. Prosperity for everybody. Everybody is an instant dot-com millionaire. There's no reason not to be fully committed with your investments. Why not?"

And in 2007, even I'll quote our prior – prior prior now – Fed chairman Ben Bernanke, who – I say this with irony and maybe I shouldn't. Maybe it's not fair. But sometime around May of 2008 – so what is this; this is Lehman less four months – made a statement to the effect that: "The Fed sees no risk or hardly any risk of recession. The only thing we're worried about is maybe some inflationary tendencies."

So this is the Fed, that employs 700 Ph.D. economists, that theoretically has the best information. They've got their *Beige Book*. They talk to everybody in the universe. Like I said, maybe I'm being a little bit unfair, but they couldn't in this particular case – with the benefit of hindsight, I'm not saying I could have done or we could have done any better. But two plus two, they couldn't put it together even four months in advance.

That doesn't mean that we're necessarily at one of these cataclysmic points, but I think it goes back to the point of humility. Don't be too sure that just because it looks good at the moment that six months, 12 months, 18 months down the road that the picture may look a whole lot different.

What we also didn't add into the picture is over the course of this cycle – and the numbers are approximate, and some of these numbers probably had more precision to them than others. But China plus the US have supposedly supplied two-thirds of the global growth of the global economy, and the Chinese economy I think is understood by its own government and its own policymakers to be extraordinarily leveraged.

This is the old Keynesian argument. If a trend is unsustainable, it will stop at some point. If it stops in a place like China and you start to have a slowdown in new leverage or deleveraging, it may be a case also – I guess I'm the one with the history on excitements here. It could be a little bit of, "Look out below."

But just to throw in an anecdote, many of you may be familiar with the name HNA which has been in the news, one of these large Chinese conglomerates. I don't know, it owns 25 percent of Hilton Hotels and lots and lots and lots of other stuff. They've been struggling for the last two to three months with their financing. There's stories about them almost every other day.

So there are places where potentially these may just turn out to be anomalies or they may turn out to be signals of the delayed-cycle environment that we would agree is in front of us.

Michael Laven: Thank you. As long as we're – well, you used the term "histrionic statements." I'm gonna borrow from something that you wrote in your June newsletter and try to bring this around to lending standards and getting compensated for risk being taken and whether or not we may have a cataclysmic event again.

You prefaced that newsletter – the newsletter was entitled "The Fed's Quixotic Journey." It was in June of last year. You had a quotation from Alan Greenspan, which he uttered in 2005. You said, "History has not dealt kindly with the aftermath of protracted periods of low-risk premiums." And you also said in your own words later, "If this cycle doesn't end badly, it will be the first one in the history of financial capitalism that hasn't."

Trying to reconcile that – I think we all are trying to reconcile that with the economy is good, and as far as we can see it looks to be progressing. But we're not being paid that much. Spreads for taking corporate or below-investment grade risk aren't all that great. Defaults are very low.

How does this unravel? I know we're generally saying that it probably won't happen any time soon. But what's the view, especially for Jeff and John, who are really intimately involved in the corporate and the low-investment grade sectors?

John Fekete: Typically if you look back at other credit cycles – and it's of course always great to look back, right? Because there are some things – you look back to 2007 and some of the statistics, and you wonder, "How did we not see it? How did everybody miss?"

There's one of the statistics about 30 percent of all new bonds and bank loans that were issued in 2007 were rated CCC, which for those that don't know is basically one step above bankruptcy, right?

So you look back and you say, "Gosh, 30 percent, it had to be a red flag waving in everybody's face." Yet people didn't realize it. Leverage levels and ratios were much higher than they are today. These are the things we typically look at when you talk about underwriting standards.

Before I cite a couple statistics, what's interesting to me is that every day basically is another record, right, for the stock market. Spreads and yields are near historic lows. Yet I know at our firm and many investors I speak with, people are really girding for something bad happening, right?

I feel like I've got a flashlight in each hand. I'm looking under every rock, around every corner. I hear footsteps everywhere of something bad that I'm really prepared for happening. I feel like I've been prepared for it for a few years, and it hasn't happened.

We could have had this same conversation probably last January. Returns I think for equities were phenomenal and for credit were very respectable for the first time in a long time. They were coupon-like, high yield, up seven percent, the AG 3.5, bank loans, 4.5, in line with the coupon. So a very respectable year, similar situation to where we are today.

So some of the footsteps that we're listening for are level of issuance for very vulnerable companies, nowhere near where we were in '07. Last year ten percent of all issuance went to CCC, the year before five percent. So a notable increase, but still a very low number. Leverage ratios are lower today than they were at any point since 2009 in the below-investment grade market.

Again, I think the perception out there is any company that has a pulse could borrow money, but the reality is that there is some – notwithstanding that headline, there is some discrimination. You're not seeing a lot of companies that are rated very lowly or have a high degree of leverage getting money lent to them from the market.

Where we are seeing some standards slip that would concern me, covenants – we get asked a lot about the lack of covenants in the market. High-yield bonds haven't had covenants in ten years. That's not anything new. Bank loans historically have had covenants. Those are rapidly disappearing. That makes it a more borrower-friendly structure.

That's a relatively new phenomenon and something that would concern us. It's one of the reasons why today we prefer private credit because that's one of the places where if I make a – I can still force them to accept covenants. I get a better structure and better protections.

Another thing that we think is a bit concerning is the level of what we would call EBITDA addbacks that we're seeing. So when a new deal comes to market, there's an advertised number for the amount of cash flow. What we're finding is that that advertised number and the historical cash flow has a very significant delta.

There are a lot of things that are baked in that haven't been achieved yet. So a company wants to get credit for layoffs that it hasn't even consummated yet. It's gonna move its headquarters in 2019, but it's gonna take the – it's gonna estimate a benefit today, and it wants you to lend money based on this cash flow that hasn't actually occurred.

So we're finding we're doing a lot more scrubbing, more than normal, to try to not use – not rely on that advertised number, but parse through, because that's an area where I think people can get hurt. If you think you're lending to a company that produces a certain level of cash flow and 20 or 30 percent of that ends up being bogus and doesn't materialize, that's where I think you'll see future stress in the capital market.

That's probably not gonna be for one or two years. But that would be something that I would monitor that we're watching closely.

Michael Laven: Just for a moment – I want to stay with you – on the covenant-lite issuance, if you're turning away from that to go to private debt say where you can negotiate better terms, what percentage do you turn away? Do you see a lot of deals that you just say, "No, we can't stomach it. Even though we have money to invest, we're just not gonna do it"?

John Fekete: It's getting easier because – and this was to the point made earlier. It's getting easier because a lot of these broadly syndicated loans, these are large-cap loans where we're seeing these covenant-lites.

The return potential on those is so low – it's three or four percent – that we're saying, "You know what, the cost of being wrong and forgoing that transaction, even if everything turns out fine, it's not that big, right?"

I could make that up in a lot of different ways. If we allocate that dollar to private credit, we can probably make a loan to a company that has a similar credit profile except that it's much smaller. We can probably make that loan at seven percent. So would I rather allocate the dollar at seven or allocate the dollar at three or four getting better protections?

The difference is – there's no free luncheon in life. The difference is it's gonna be less liquid. So if you're a client that needs daily liquidity, this kind of thing you would not put in a mutual fund. It'd be totally inappropriate. But for institutional clients, for endowments, for pensions that have a longer-term horizon, we've seen a lot of I would say appetite for that type of product these days.

Michael Laven: Jeff, I want to ask you about a somewhat different topic. A quarter to maybe a third of your business is real estate-oriented, obviously an important part of the economy. You approach it through direct investment but also through the credit side.

Can you address that after multiple years of appreciation within real estate and how you're finding opportunities there? I know just from our little conversation beforehand you might have some specific examples. I'm not sure if it was on the credit side or the real estate side.

Jeffrey Aronson: It was on the real estate side, and it was purely a coincidence. There was an article in yesterday's *Wall Street Journal*. For religious readers of the *Wall Street Journal*, Wednesday is also its real estate day. There was an article in yesterday's paper, pure happenstance – I don't think they know that I was coming here – talking about what was happening in the self-storage area. I don't know if people saw it.

But self-storage has been a really – a bit out there. It's not exactly mainstream, but a very strong-performing part of the real estate market over the past several years. It's a pretty simple business. The capital intensity is quite low. It's not terribly complex. It's very high-margin.

It's sticky. The *Journal* article correctly references that if you're charging someone $80.00 a month and you raise it to $85.00, are you really gonna go and get your stuff out of there and move across the street to save $5.00 a month?

It's been a really strong-performing asset class, albeit a small one – the real estate market in this country is obviously gigantic – for many, many years.

Now what happens when you have a strong market? And this was the premise of the article. Capital comes in. It talked about the growth of new self-storage centers because of the very fact that they're simple. They're easy to build. They don't cost a lot to build. And so the point of the article was questioning whether this growth would continue.

I used the phrase "anticipatory thinking" a little while ago. Last spring we saw what was happening. We had never invested in self-storage. But we saw what was happening. I think a lot of investing is pattern recognition, as my colleagues here can attest to. When you've been doing this for a long time, you tend to see certain patterns.

And what was happening in self-storage reminded us of what had happened in what I'll call inexpensive hospitality prior to the crisis in '07 and '08, particularly in what are called extended-stay hotels. You've probably heard of a chain, Extended Stay America.

Very inexpensive to build, pretty sticky by the very nature of the name, incredibly high margins, EBITDA margins approaching 50 percent. They don't require a lot of capital. It's not maintaining the Beverly Hilton. All you have to do is you need some paint and you've gotta replace the furniture every few years, and easy to build.

A lot of capital came flowing into that market, and then the largest company in the sector was sold in 2007 at a very high price. It was called Extended Stay America. You see them around here. There are lots of them in Southern California.

And that didn't work out so well because the hotel business is still quite cyclical. I think someone paid $7 billion for the company. We recapitalized it at a valuation a little over $4 billion and over a period of years took the company public and exited.

We see the same pattern in self-storage. There's nothing wrong with the asset class, but if you build too much of them, it's not going to work. Last spring we put together a team of people. We lifted out a team of people from a well-known real estate firm to start thinking about this.

This is an area, and the paper called us on it yesterday – we weren't mentioned, fortunately – that there's likely to be excesses in. It's still a good area, and it's exactly the type of thing that we want to focus on, not necessarily today.

So we're buying bits and pieces today in secondary markets and trying to buy them below replacement cost by getting ready and trying to anticipate what we think will happen.

That's as real-time as I can get from an example perspective.

Michael Laven: Thank you. I think there actually are a lot of religious readers of the *Wall Street Journal* in this audience. Many people saw last week, and Tad, I'm gonna direct this to you, an article in which your former mentor, Bill Gross, was commenting on the ten-year Treasury hitting a point at which it signaled, in his view, an and to the 25-year, really 35 or almost 40-year, bull market in bonds. It was a pretty bold or histrionic statement, I guess.

How do you view that? Do you see this as the end of the bull market or the beginning of a bear market in bonds, a serious bear market for bonds?

Tad Rivelle: Well, as we've said and as you have pointed out, it would appear that a lot of the good news with respect to the low-rate environment is behind us, the quantitative tightening of the Fed actually raising short rates. Maybe a little flippantly, we said, "Is that a big deal?"

Well, of course. We were just talking about commercial real estate. Well, we could have also added – I may not be quite as knowledgeable as you on it – is that one of the big stories of commercial real estate this cycle is the prices on average – this is aggregated across a lot of different asset classes within commercial real estate – are up 100 percent or so. The net operating incomes are up like ten percent cumulative over that period of time.

So this has been a story of lower and lower cap rates. The lower and lower cap rates eventually collide with a ten-year Treasury now yielding at 2.6 percent. At some point even the most rose-colored glasses aren't going to be able to keep you unable to see that if a riskless rate of return has become that much more attractive relative to every other risk-based opportunity, you've got a problem in front of you.

Maybe I'll free associate another anecdote and try to make a point out of it. In many major metropolitan areas, we've seen phenomenon such as the one – the anecdote that I'll share. Your firm obviously may know it quite well given your office there.

So I'm told that there are only 100 properties, residential properties now, for sale in Seattle with prices of less than $1 million. The backstory behind it, in effect, and I'll be a little over the top here, what you're seeing is a market that's not clearing, in effect.

The prices go higher, and the sellers don't want to sell because the sellers presumptively – this is inference – are either in a situation where they have to trade up, and how do you trade up if you've got nothing to buy on the other side of it? Or sellers have also become maybe very acclimated to or habituated to the idea that, "Why should you sell? The prices only go up anyway."

That tells you that it may not exactly, so to speak, be exactly a bubble along the lines of what we saw in the last time. But the fact that you're not – that higher asset prices are not producing a counteracting behavioral response is in general worrisome.

So to the extent to which what Gross may have been referring to, which is that investors have gotten very accustomed to this tailwind of lower rates and very low rates for the last eight or nine years, and maybe what he was raising a bit of a red flag about is that maybe you can't depend upon that any longer, given all of the other issues. So without knowing whether it's the end of the secular decline in rates, we'll see about that.

And then I'll maybe just add a pile-on with one more statement. We've talked a little bit about low volatility, and everybody knows that over the course of the last year, the VIX, the equity volatility index, has closed at some phenomenally large number of days below ten, and phenomenal again in the historical context.

It never did that before. It was a very rare type of occurrence, and now it's occurring all of the time. But it's not just low volatility in the equity market, it's low volatility in lots of asset price markets.

So if you put on your academic hat for a minute and you say, "Well, if volatility is that low in an extremely low-risk environment, why else would volatility be that low?" Or you throw your academic hat off and you put a trader hat on, and you say, "That's not what's happening," or, "I don't think that's what's happening."

I think what's happening is that basically the sell volatility trade in all of its forms, getting long credit risk, getting long prepayment risk, getting long risk in every way, shape, and form imaginable in exchange for getting some additional yield has become an extraordinarily crowded trade.

Markets move in response to fundamentals and data, it's true. But oftentimes they are also moving in response to the underlying positioning in the marketplace. If the underlying positioning in the market is that everybody is in the pool, if there is something to Bill Gross' theme that rates can potentially go higher, there is always the risk of a pile-on effect and maybe a mini panic.

Michael Laven: Thank you. We're almost to 2:30. I actually have more questions, but I'd rather open it up to anyone in the audience that might have a question for our panel as well. Bob?

Bob: So you hear a lot of concern that there's a lot of credit packed into products that provide daily liquidity – there's been a hell of a huge increase in issuance – and that the day of reckoning is gonna come upon us, that all these, whether it's retail unsophisticated investors or sophisticated institutional investors, that want to take their allocations in these areas down, whether it's by cap or by some number, they've all gotta get through that little door at the same time, and there's gonna be a virtual train wreck.

And you've been hearing this. It's along the same lines as, "What if they ever started piling out of index funds? What's gonna happen to the top 15 stocks?"

Talk about the structural reality of high-yield investment-grade and how it's packaged today and how that – and the risks that are associated with that, and what the investor can do about it.

Michael Laven: You want to take that, Tad, on mutual funds.

[Laughter]

Tad Rivelle: No. Well, one of the big changes was the regulatory environment, the Dodd-Frank, right? We've seen it in the FICC, the fixed-income trading profitability numbers coming out of the Goldmans and the large banks, which is to say it's fallen off a cliff, basically.

One of the reasons it's fallen off a cliff is because of the very low volumes of trading and the fact that Wall Street firms will not principal risk in any manner that they did ten years ago. They will act as agents of risk transfer. They'll sell your bond if they have a buyer immediately on the other side of it. They won't put it on their balance sheet. Again, most of this is due to regulatory issues.

But it's also been accentuated by the fact that in a low-volatility environment, why do you – why would anybody commit capital resources? What do you need $5 million-a-year bond traders for when bonds never trade and they never change in price anyway?

It's a big risk because just take the investment-grade credit market. It's grown to I think $5 trillion, something like that. It has experienced phenomenal growth over the course of this cycle. Your question referenced the general growth of the credit-based asset. There's been a lot of it.

The leverage ratios as calculated by the Morgan Stanleys and the JPMorgans – and people can argue and debate methodology. Are you doing gross leverage, net leverage? Exactly how are you calculating these numbers? However you calculate them, you are either beyond leverage levels that existed in 2007 in the investment-grade market or you're right there as we speak today.

So there is vulnerability in that asset class with respect to the potentiality of seeing downgrades and negative price action. If there is a rush to the exits, don't expect Wall Street to basically take the bonds off the hands off mutual fund managers like ourselves.

So you've gotta be thoughtful about how you build your portfolios, and getting all in in anything this late in the cycle is probably not a wise thing. But what can you do about it? Only a little bit. You can only manage it around the edges. At the end of the day, if you're in an environment where the market is not clearing, it's gonna be interesting. I guess we're gonna get schooled again.

Michael Laven: John, did you want to add?

John Fekete: Yeah. I think another dimension of the question you asked, Bob, relates to the mismatch between the liquidity of a fund that's offered to investors and the nature of what's put in that fund. That's something that I think has changed in the last few years. It is worth monitoring.

You see these daily liquidity mutual funds that have a very significant allocation of private credit, which in our opinion should be a very, very small – ten percent, five percent – allocation in something, because if you do have a run – the proverbial run, you're not gonna be able to sell that, right?

Bank loans are very, very popular these days. Many people probably don't know that if I sell a bank loan today, it takes on average three to four weeks before that bank loan trade settles. So what that means is I sell something today to meet a redemption. I don't get the cash in my account for another month, right?

So I don't think a lot of investors when they – potentially when they signed up for these funds, probably there are investors that don't know that, aren't aware of it, didn't make themselves aware of it, don't think about the implications.

The implications are five percent and ten percent redemption could be problematic for certain funds. I don't think it's indicative of the fund industry as a whole. I think most funds are properly structured where the asset mix and the liquidity is a good balance.

But there's no question as people are looking for yield, right, anywhere they can find it, whether it's risker things to get more yield, whether it's longer duration to get more yield, whether it's less liquid to get more yield, sometimes those things shouldn't be in a daily liquidity product, and there could be some investor disappointment, let's say.

Audience: And we get victimized with collateral damage because of the new marks, even though it's not your fund that's having to keep bonds out, even if it's ten percent. But you have new marks, and that impacts all three of you out there.

John Fekete: You certainly can, and that's a big part of what happened in 2008 in less-liquid markets like structured credit where somebody was forced because they were liquidating. They had no choice. They sold it at what you would consider to be an uneconomic price to the point where I'd rather go buy it, right?

One of the things we think about because we're primarily an institutional firm is we try to use those opportunities to our advantage. When other people are forced sellers, we try to step in.

But no question, if you own it in your portfolio even if you're not a seller, you potentially could get hurt. We would call that mark-to-market risk, and you have to be aware of that. That could be a new element of whatever the next correction is, and whenever it occurs, that could be something that we haven't seen so much before.

Jeffrey Aronson: I'm waiting patiently.

[Laughter]

Michael Laven: Any other questions? Doesn't look like it. I want to thank Tad and Jeff and John. Thank you for participating today. It was very great information.

[Applause]

I want to thank all of you attending today. As Bob said at the outset, we're humbled and we're very, very grateful for the trust that you place in us as a firm. What you do as institutional entities, as family offices, all the good work that you – I would say that collectively for all of us. Jeff, I think you said earlier this is real people's money, and it's going to good works.

So we're very appreciative of the relationship, the association that we've had with all of you. Thank you for coming. May you have a prosperous and fulfilling 2018. See you next year.

[Applause]

[End of Audio]