Program #1418
Broadcast: October 20, 2017

On this week's program: On the 30th anniversary of the 1987 market crash, leading financial risk expert Richard Bookstaber identifies the biggest risks in today's markets.

RICHARD BOOKSTABER
Author
THE END OF THEORY: Financial Crises, the Failure of Economics, and the Sweep of Human Interaction

CONSUELO MACK: This week on WEALTHTRACK, leading risk expert, Richard Bookstaber identified the looming financial crisis on WEALTHTRACK in 2007, before it happened. He says there are different risks building up now. What are they? That's next on Consuelo Mack WEALTHTRACK.

Hello and welcome to this edition of WEALTHTRACK, I'm Consuelo Mack.
This week marked the 30th anniversary of the October 19th, 1987 market crash when the blue chip Dow plummeted nearly 25%, behaving like the shakiest of emerging markets.

What caused the Dow to drop 508 points in a single day, now forever known as Black Monday? As Ben Levisohn wrote in his excellent article in *Barron'*s titled *Black Monday 2.O: The Next Machine-Driven Meltdown:*
"…experts found a culprit: so-called portfolio insurance, a quantitative tool designed to use futures contracts to protect against market losses. Instead, it created a poisonous feedback loop, as automated selling begat more of the same."

Fast forward 30 years and that type of automated trading program seems almost quaint. Quantitative, rules- based systems known as algorithms, computer- based, trading programs and strategies have grown exponentially in number, trading volume and complexity since then. And as Barron's Levisohn wrote: "…bear a resemblance to those blamed for Black Monday."

How risky are the markets now? That is the focus of this week's WEALTHTRACK and our guest, a leading expert on risk. He is Richard Bookstaber, Chief Risk Officer in the Office of the Chief Investment Officer for the $110 billion University of California pension and endowment portfolios. Bookstaber has had chief risk officer roles at major investment firms ranging from hedge funds Bridgewater and Moore Capital to investment banks Morgan Stanley and Salomon Brothers. From 2009 to 2015 he switched to the public sector, working at the SEC and U.S. Treasury. Among his projects was helping build out the risk management structure for The Financial Stability Oversight Council and drafting the Volcker Rule which restricts proprietary trading by banks. Bookstaber is also an author of two highly regarded books on financial risk. His most recent is *The End Of Theory: Financial Crises, The Failure of Economics, and the Sweep of Human Interaction*. His first, *A Demon of Our Own Design: Markets, Hedge Funds and the Perils of Financial Innovation,* published in 2007 presciently warned of the perils of the explosion of financial derivatives, some of which he helped create.

In a 2007 WEALTHTRACK appearance he alerted us about the twin risks of high leverage and complex financial instruments. How right he was. I asked him why he had identified that combination as such a big problem, before it became one?

RICHARD BOOKSTABER: Well, the problem is if you have complexity, you can't see if there's a problem in one part of the market how it can propagate or affect another part. These events occur where in the normal world you might say, "Oh. I see that this shock occurred and is propagating through to affect another part of the market," but now when you put leverage on top of that, you no longer have the luxury of time. Because something goes wrong because people are leveraged, they have to liquidate. When they liquidate, that puts more pressure on the market, and you get this cascade that moves forward faster than anybody can sit back and try to take steps against it. If things were moving in slow motion, everybody would have plenty of time to slowly sell, to slowly readjust their positions. But when you have the complexity, so you don't know what's going to happen, and then you have the leverage that forces you to move very quickly, that's really the characteristic that leads to a crisis.

CONSUELO MACK: Did we ever have a time when the markets weren't pretty complex?

RICHARD BOOKSTABER: Yeah. I think they became more and more complex almost year by year up until 2007, 2008.

CONSUELO MACK: Because of ...

RICHARD BOOKSTABER: Well, largely because of derivatives and structured products, credit default swaps, all these "innovations" which essentially held ... what they basically did is they hid risk and they allowed people to be more leveraged and take more risk than in some cases they were even supposed to take.

CONSUELO MACK: Have we addressed those risks of leverage and of financial complexity?

RICHARD BOOKSTABER: We've addressed leverage. Some people might argue we haven't addressed it enough. Some might say we addressed it too much, but through various regulations, banks now have reduced leverage that they can take. We also have more transparency, so we know the sort of leverage that say hedge funds are taking whereas before '07 or '08 we didn't even know the leverage of hedge funds of the positions they had.
We also have less complexity in the sense that the standard sorts of derivatives have now become even more standardized, and the appetite for derivatives are so complex that you can't figure out what's going on. It has dropped a lot. So, I think in terms of transparency, in terms of the type of complexity we had then, in terms of leverage, we are in better shape than we were in say '06 or '07.

CONSUELO MACK: However, one of the things that you said is that the next crisis is not going to be like a past crisis. In fact, there's that expression that history doesn't repeat itself; it rhymes. Does that even hold any more?

RICHARD BOOKSTABER: I think sometimes the problems that we have occur from trying to get rid of the problems that existed before, and this certainly is the case with '08. We took steps to reduce leverage. We took steps to reduce the ability of banks to essentially add risk to their portfolios through proprietary trading, through trading on their own account, and doing that created sort of a collateral damage that we didn't except where now liquidity is lower.

CONSUELO MACK: You have said that one of the big risks in the market today is the lack of liquidity. So explain.

RICHARD BOOKSTABER: So, two things can cause problems in the market. One is if everybody has to sell because they have a margin call, now all of these instruments go flooding into the market. Somebody has to be on the other side to buy. Prices drop.
The other thing that can cause problems is illiquidity where when people sell, the other side of the market prices drop a lot because nobody's willing to buy, and we have a situation now where the bank dealers who are the key market makers for a lot of fixed income instruments don't have the wherewithal to hold inventory because they can't lever as much, and they don't have the incentive to do it because they can't trade on their own account.

CONSUELO MACK: You mentioned fixed income. Is this primarily lack of liquidity? Is that primarily a problem in the fixed income markets and less so in the stock markets? What about the stock markets?

RICHARD BOOKSTABER: Yeah, it's primarily a problem for fixed income. The equity markets tend to be very liquid. Foreign exchange markets tend to be very liquid. So, when you're looking at the pockets where illiquidity can be a real problem, it's in fixed income.

CONSUELO MACK: Let me ask you about another major risk that you're talking about now, and that is volatility. You're saying low volatility is a problem. It doesn't mean less risk. It can create risk.

RICHARD BOOKSTABER: Right. This is what I call the volatility paradox. That when risk is low in the markets, really what's happening is under the covers risk is growing. Why? Because if volatility is half of what it used to be, you feel like you can take twice the leverage, and people are more willing to loan, lend money to people who are taking positions because you think, oh, things are not going to move up and down very much.

CONSUELO MACK: Is that happening? Are we seeing actually financial firms leverage up, or where's the leverage happening?

RICHARD BOOKSTABER: I think what happens is you could either lever or you can move towards riskier securities. You can take more exposure in things that are riskier because in a low volatility environment they don't seem very risky. But the problem is that a lot of people take on strategies that are sensitive to changes in volatility. So, for example, a lot of asset managers do what's called volatility targeting. They tell their investors, "We're going to manage positions so that we on average have volatility of say 12 percent," which means that in a typical year you may see your investments go down five or ten, maybe 12 percent, up five or ten, 12 percent, but you're not going to see except in a really strange circumstance 20 percent moves. Well, if volatility right now for the sorts of assets they're holding, say equities is 12 percent, if you have a billion-dollar portfolio, you can hold it 100 percent in stocks. Now let's say volatility shoots up to 24 percent. If you're targeting a 12 percent volatility, now you have to sell half of your assets. So suddenly half a billion dollars of equities is going into the market, and you're not the only one doing it. There are a lot of strategies like this where if volatility goes up, people have to de-risk. They have to reduce their exposure, and so a rise in volatility ends up leading to a drop in the market. That drop in the market adds further to volatility which leads to further drop in the market. So, you can get this cycle between rising volatility and reduction in prices and returns.

CONSUELO MACK: Have there been incidents where the volatility has risen where you've seen that kind of behavior?

RICHARD BOOKSTABER: Well, first of all volatility targeting comes in a lot of guises. So, what I talked about is one way people target volatility to determine what they do. One that has an even longer timeframe is called risk parity where over a much longer time period you want to have equal risk in all your asset classes. If one asset class suddenly pops up in terms of volatility, you have to reduce your exposure to it. Then there's shorter term where people are really dynamically hedging, and the more volatility there is on a very short-term they tend to reduce positions. So, the notion of volatility targeting exists in a lot of different guises, but we haven't really seen volatility targeting as an issue before, and this is always what happens. If it happened before, people wouldn't be doing it right now. So, where leverage was the issue in '08, and I think liquidity is the underlying issue now, the sort of strategy that might cause a problem now are the strategies that are related to volatility targeting. The big concern are strategies that have positive feedback, so a momentum strategy. People are doing momentum strategies. Just accentuate. Whatever the move is, they accentuate it. Volatility targeting strategy is going to accentuate so that when volatility goes up, what they do adds more fuel to the fire. So, the big concern are strategies that are rule-based but rule-based where what they do creates positive feedback, and in fact I think this is the problem as you go across the market. I think you'll find more of those being the case, risk parity being another example, than ones where if things are going in one extreme, people tend to basically take actions that pull against it.

CONSUELO MACK: So, the number of players using these strategies, has it reached kind of a critical mass in fact that it's created its own set of risks?

RICHARD BOOKSTABER: In fact, my bet is if you go through any sort of crisis, the models that existed at that time didn't include the seeds that were in that crisis. Crises occur because of new strategies and innovations and maybe gaming around regulations that were put in place for the previous crisis. So now we have some of these strategies that didn't exist or weren't really dominant the last time around. Now whether there are enough people doing these strategies for it to matter is always hard to tell ex ante, but the fact that liquidity is low means that whatever the size of the people who are in the strategy, they can have a bigger impact now than they could were liquidity higher. So, it'll take less of a push to kind of get us over the cliff.

CONSUELO MACK: Another area that you are focusing on is ETFs and the impact that ETFs. What's your take on ETFs and the impact that that could have on the markets?

RICHARD BOOKSTABER: So, ETFs is another great example of here's an innovation, and it's like so far so good, so far so good. Let's do more of it. So far so good, and it's very hard to say what can go wrong because we haven't seen anything go wrong. Everything's fine until it isn't. The problem I have with ETFs is ETFs and illiquid instruments. Take high yield for example. You can buy an ETF on high-yield bonds, and you can buy and sell that ETF intraday. Just in and out is no problem, but the high-yield bond market is not a liquid market. If you actually went in and tried to buy or sell the bonds themselves, you'd have to go to a broker-dealer who might take one, two, three days to be able to get the other side of that position. They almost trade by appointment. So, you know there's something fundamentally wrong. It's like a failure of the conservation of energy, to have an asset that's created that has very, very high liquidity when the underlying asset that's creating it has very low liquidity. So, you have to say something's got to be able to go wrong, and what can go wrong? Well, if suddenly there's a problem in the high-yield market and people with ETFs decide, "I want to get out," they'll discover that if enough of them are trying to get out, there's not enough people matching between the ETF and the high-yield bonds to allow for the liquidity that appears to be there when you're just seeing a little bit of it day by day. So, you can see a failure in that market where the ETFs just drop and drop and drop. Now okay, that's the high-yield bond market. You might say, so okay, so much for high-yield bonds, but the problem is let's say that issue goes viral. It gets on the cover of *USA Today* and all the equivalent that occurs now. People are just going to hear ETFs and it failed. They won't say, "Oh, but it was an ETF on something illiquid." So now people will lose confidence in ETFs generally, and people can start to try to liquidate ETFs much more broadly, and the same problem could propagate to markets that normally would have the liquidity to meet any selling of ETFs. The problem with ETFs is so the problem can emerge in these illiquid markets where you basically are doing the sleight of hand and creating something apparently liquid to have something that isn't liquid. But because ETFs permeate all the markets, you can get contagion across all the different markets through the ETFs as a vector.

CONSUELO MACK: These are things that Chief Risk Officer at very large endowments like the University of California ... these are the things that you think about. I just want to be clear that the ETFs that you're concerned about are in the fixed income and in smaller illiquid markets and that basically the ETFs in the equity markets and the stock markets which are the ones that everybody owns, you're not as concerned unless this kind of domino effect occurs in which case then all ETFs would be tainted by this negative brush. Right?

RICHARD BOOKSTABER: Because remember the issue is that there's a problem where the liquidity of the ETF being different than the liquidity that actually exists in the underlying. When you're looking at ETFs on the S&P 500 and so on, that's not the case. If you're looking at an ETF on the yen or the dollar or the S&P 500, the liquidity matches between the underlying instruments and the ETF itself, but if people just don't like ETFs because, as you said, it's tainted based on what occurred in this market, then it could have broader impact.

CONSUELO MACK: What do we do, Rick? So, what are you for instance recommending that the University of California do with its $110 billion endowment to de-risk its portfolio? Or what are strategies that we can do so that we would not be subject or we could protect ourselves from these potential risks?

RICHARD BOOKSTABER: Well first of all, part of being a risk manager is you're looking at risks that are not likely but not so likely as an asteroid hitting New York. So, I wouldn't go out and say, "Oh my gosh. ETFs are going to fail," or "Oh my gosh, volatility is going to spike and all these things will happen." These are scenarios that you have to worry about and think about as opposed to here's what I would trade against. But the key component I think of both the volatility scenario and the ETF scenario is that they're short term. They're what would be called technical. They deal with not the inherent value of stocks and bonds but the supply and demand imbalances that can appear short term. So, one thing you can do is say, okay, it sounds like a risky world out there. I'm going to reduce my exposure. Hold more in cash. Hold more in less risky assets or, okay, I see how these things could play out and they can be a problem, but it's a flash fire, and once it's done the world moves on. So, I'm going to make sure that I am not going to be caught up in that. I'm not going to be really leveraged. I'm not going to be in a position where I will have to get out. So, it's being armed with a concept of what could happen, and as it's occurring understanding the dynamic and not kind of being one of the people who's trying to crowd out the door.

CONSUELO MACK: When you were on during the financial crisis, you actually told us not to sell in the panic and, in fact, that turned out to be the best advice to take.

RICHARD BOOKSTABER: You hear everybody else is selling, but if you kind of have the perspective and you have structured your portfolio in a way that you say, "I'll need my money five, ten, 15 years down the road; I understand because either I have mentioned it or other people have mentioned this kind of thing is occurring and here's a way it's occurring," then you can stay out and not just add to the selling pressure and sell as the market's going down. In fact, now I'm getting into some nice little risk here. You could say, "Oh, the market's down ten percent, 20 percent. Now it's down 30 percent. I see why this is happening. It's really a technical as opposed to a fundamental event. I'm going to buy." Now that's called catching a falling knife, and of course there is always risk in doing it, but that's another strategy that people can be sort of set up to take advantage of. I was involved in the market in 1987, and you can go back beyond that. So, these things occur, and if we understand the dynamics of why this event is happening and that gives us some confidence, then we can actually not just sit it out but maybe even go in. When we do that, by the way, when you buy when the market's down, what you're doing is supplying liquidity the market is crying out for. So, it's not as if you say, "I'm smarter than somebody else." It's saying, "I've got cash available, and

I'm going to provide to market, and in return I might be making ten, 15, 20 percent on that investment."

CONSUELO MACK: We discussed some of the major risks that you are concerned about which is lack of liquidity and also the low volatility. Are they creating a situation where we could have another financial crisis similar to the one that we had in '08 and '09?

RICHARD BOOKSTABER: Hopefully nothing's going to quite hit the level of '08 and '09 because the problem in '08 and '09 was it wasn't just a financial crisis. It was severe enough that it spilled into very severe economic crisis, and my focus is really let's just look at what happens in the financial system and hope it doesn't spill over to create problems and a recession. So, having said that, I think low liquidity can be as much of a problem for us as high leverage was in '08 from a financial setting alone. Whether the spark that ignites the problems with illiquidity is volatility or any number of other things, I can pose different scenarios, but the underlying structural problem is that if a lot of people try to run through the door at the same time, they're not going to get through. What we see day to day is one person goes through. A little while later another person goes through. So, it appears that there's liquidity there, but I don't think it's there in the case of a really high level of liquidity demand. Again, can it be as bad as '08 even in the financial system? Well, the problem in '08 was you had the feedback from the financial shock to the economic back to more financial, so you ended up with equities down 50 percent. Do we get 50 percent? I think that's probably pushing it. If somebody would put a gun to my head, I would say that I could see equities down 20, 25, maybe even 30 percent. Fifty is probably pushing it.

CONSUELO MACK: Rick, what would your recommendation be for one investment for a long-term diversified portfolio?

RICHARD BOOKSTABER: If I'm going to pick a market, actually I pick India right now. There's a lot of capability in India, and I think the difficulty with India is finding the right implementation of a strategy. It's not as transparent a market. It's a little bit of a sort of inside baseball type of market, so I don't know whether the right way to implement a strategy of investing in India is just buying the five biggest companies, but I certainly would try to focus on India and try to think of ways to take advantage of what's going on there.

CONSUELO MACK: We will leave it there. Rick Bookstaber, thank you so much for joining us, and congratulations on your new book, *The End of Theory*.

RICHARD BOOKSTABER: Thank you.

CONSUELO MACK: At the close of every WEALTHTRACK we try to give you one suggestion to help you build and protect your wealth over the long term.
This week's Action Point is: **Never forget that markets are risky.**
There is a reason financial markets are called risk assets. At any given time they can decline,

frequently it happens at the wrong time, especially for retirees who are pulling money out on a regular basis.

How to handle? Have a bucket of liquid, short-term assets: cash in an old fashioned savings account, cash equivalents like short-term Treasury bills. This savings bucket is meant to see you through bear markets so you are not depleting your principal retirement account.

As Richard Bookstaber said the best strategy in a market crisis is not to sell and wait for an opportunity to buy. Having savings to fall back on allows you to do that.

Next week we are going to talk to Matthew Peron of Northern Trust Asset Management about his area of expertise: factor investing. Why is one of the oldest forms of quantitative investing gaining in popularity now?

In the meantime if you go to our website and click on the EXTRA feature you can hear Richard Bookstaber discuss his new book, *The End of Theory*, in this case traditional economic theory and why we need a new approach. Tell us what you think on Facebook and Twitter.

Thank you for watching. Have a great weekend and make the week ahead a profitable and a productive one.