Jacobs Levy Equity Management Center for Quantitative Financial Research 2018 Annual Conference September 14, 2018

2018 Jacobs Levy Center Annual Conference Welcome Remarks Christopher Geczy, Ph.D., Academic Director

Good morning, and welcome to the annual conference of the Wharton School's Jacobs Levy Equity Management Center for Quantitative Financial Research. I'm Christopher Geczy, Academic Director for the Jacobs Levy Center, and it's my pleasure to host today's event.

Today we'll examine the impact of the so-called Great Financial Crisis, and crises and market volatility in general. We'll hear from an outstanding lineup of speakers representing diverse viewpoints. Nobel Laureate Robert Shiller and Wharton's Jeremy Siegel will reignite their long-running debate on stock valuations for our keynote presentation. The slate of additional presenters, discussants and panelists also includes several former SEC officials, and many notable speakers from academia and the financial industry. We are looking forward to hearing from them and learning from them, and I encourage all of you to offer your questions and comments during the audience Q&A portions. If you would like to access slide presentations during today's event, please note that a link has been provided on the agenda page of the conference booklet, along with details on how to connect to wi-fi.

Exactly ten years ago today, Lehman Brothers' board capped a frantic weekend by voting to declare bankruptcy, after Tim Geithner, President of the New York Fed, refused a government bailout. The next week would feature some of the most terrifying (and then ongoing) events in global finance since the 1929 market crash. Among other events, the failing Merrill Lynch arranged a fire sale to Bank of America. AIG did get a huge Federal bailout, unlike Lehman. The Reserve Primary Fund, along with other money market funds, broke the buck, damaging global confidence in the entire money market fund universe. By the end of the week, Treasury Secretary Hank Paulson announced a plan for Washington to buy up more than 700 billion dollars of illiquid mortgage-backed debt – the Troubled Asset Relief Program.

The increase in S&P 500 volatility, spot VIX, was a bit slower to manifest to its local apogee, but relentless nonetheless. The CBOE VIX index, one of a number of reflections of environmental stress measuring implied volatility, opened the week of September 15th at 26, whereas its historical mean at that time was about 19. At the end of the week, the VIX was at 32. But the VIX then rose further. Two months later, on November 20th, it closed around 80. It pulled back to end the year at 40, but the next day the VIX would close below 30 was May 19th, 2009. Eight straight months of especially high implied volatility.

Part of our agenda today is to examine how these events and the reality of high risk settings are of import in quantitative financial research and asset management. We will also examine how stock market valuations affect market returns and of course risk management. Our keynote

speakers are possibly the two most fitting scholars imaginable to have this conversation: Robert Shiller and Jeremy Siegel.

With all of us aware how market events played out ten and more years ago, and also aware today of investor nervousness at high stock valuations, a rising global interest rate environment, and surging political uncertainty, our topics for today are clearly of deep interest to quant researchers but are of course are of far more than academic interest. We are looking both backwards and forwards at events and risks existentially dangerous, not only to our businesses, but to the whole global economy.

Before we get started, I would like to take the opportunity to thank Bruce Jacobs and Ken Levy, whose gift to Wharton starting in 2011 and whose ongoing partnership not only established the Jacobs Levy Equity Management Center for Quantitative Financial Research and the Wharton-Jacobs Levy Prize for Quantitative Financial Innovation but have helped our Center thrive. The gift was made to commemorate the twenty-fifth anniversary of their firm, Jacobs Levy Equity Management, which they co-founded in 1986. Since then, Bruce and Ken have played a major role in bringing quant investing to the forefront, publishing a series of significant articles in leading professional journals, co-authoring a number of well-regarded books, and generously supporting scholarship in finance.

Bruce and Ken's gift to Wharton has helped ensure the school continues to lead in research and scholarship in the field of quantitative finance. To date, among a number of deeds, the Jacobs Levy Center has awarded five significant doctoral fellowships, and more than fifty grants for faculty and student research projects. We have a working paper series that currently features more than 100 papers, and we award the Jacobs Levy Center Research Paper Prizes to the most exceptional submissions each year. I look forward to recognizing the recipients of the 2017 paper prizes later in the program.

Today we are hosting our sixth large-scale conference or forum, and next year we will award the fourth Wharton-Jacobs Levy Prize, which is given every two years. I will add that the nominating period for the 2019 Prize is open through September 30th, and I encourage you to visit the Jacobs Levy Center's website to make a submission. The Prize recognizes outstanding quantitative research that has contributed to a particular innovation in the practice of finance, and the next winner will join a highly esteemed group of past recipients: Harry Markowitz, Bill Sharpe, and Stephen Ross.

Many of you have likely seen Bruce and Ken's outstanding piece, co-authored with Frank Fabozzi, on Steve Ross in the special June issue of the *Journal of Portfolio Management* which was dedicated to him or the piece also therein by David Musto, who presented at last year's conference. The issue is available at the IPR Journals table just outside this room if you would like a copy. It's a great one.

Speaking of which, I would also like to thank this year's conference sponsors, who helped make today's event possible. They are Institutional Portfolio Research Journals, Jacobs Levy Equity

Management, and Wharton Research Data Services. If you haven't already, please do visit their tables outside the ballroom, which will be open throughout the day.

We're also glad to have Sirius XM broadcasting live from the conference for the fourth year. The show "Behind the Markets," which happens to be hosted by Jeremy Siegel along with Wharton alum Jeremy Schwartz of WisdomTree Investments, will be live on the air from 1:00 to 2:00 pm. You can stop by and check out their set up near the registration area.

I would also like to thank the Jacobs Levy Center's corporate members who help make everyday progress and research support at the Center along with the conference possible: A-Q-R Capital Management, Kepos Capital and McKinley Capital Management. Our corporate membership program directly aids the research of Wharton and Penn faculty and students in quantitative finance, and we are most appreciative of the ongoing support of our members. In addition, these members enjoy certain benefits including early access to research, involvement in Center activities and other advantages. If you are interested in learning more about corporate membership, information is included in your conference materials.

In addition, I want to recognize this year's conference committee. Professors Nikolai Roussanov, Amir Yaron and I reviewed the nearly 100 paper submissions we received. In addition, Bruce and Ken did as well. They were all incredibly generous in helping craft the final program. I thank them profusely for their all their efforts to make this event a success.

Now, it's my great pleasure to introduce the Dean of the Wharton School, Geoffrey Garrett. Dean Garrett's connection with Wharton goes back more than twenty years to when he was a faculty member in the Management Department from 1995 to 1997. In addition to serving as Dean, he is currently the Reliance Professor of Management and Private Enterprise and a professor of management at Wharton, and a professor of political science at Penn. Prior to his return to Penn, he was dean of the business schools at both the University of Sydney and UNSW, in his native Australia. A highly cited international political economist, he has been on the faculties at Oxford, Stanford and Yale universities. Dean Garrett is a respected commentator on global business, economics, and politics, and if you haven't already, I encourage to follow his LinkedIn Blog where he regularly posts about a wide range of current topics.

Please join me in welcoming Geoff Garrett.