# MESSAGE FROM THE RESEARCH FOUNDATION CHAIR

Joanne M. Hill
Chair
CFA Institute Research Foundation

For more than 50 years, CFA Institute Research Foundation has endeavored to educate investment professionals by providing independent, high-quality research that helps them effectively fulfill their duties. I assumed my new role as chair in September 2020, and my highest priority in this letter is to thank all of you who have contributed financial support for this mission. Many of you have regularly included these contributions with your annual CFA Institute membership renewal, sustaining the ability of the Research Foundation to provide topical content in the form of books, shorter articles or "Briefs," literature reviews, webinars, and workshops. In 2020, our content covered a wide range of topics: exchange-traded funds, retirement, artificial intelligence, ESG investing, several topics related to risk, and a publication in which leading academics celebrate Nobel Laureate Robert Merton's impact on financial economics.

In addition to authoring a book on ETFs for the organization, I have had the pleasure of serving as head of the Research Foundation board's Research Committee for several years. These roles have enabled me to observe the hard work and dedication of our volunteer board members and our small staff as they strive to carry out our mission for the benefit of our members and the investing public. CFA Institute has been our active partner, with leadership from Research Head Rhodri Preece as well as valuable production and marketing assistance, allowing us to raise awareness of our content. In the challenging year of 2020, we moved in new directions while continuing our focus on delivering research about current topics in financial markets and asset management to members and the investing public free of charge. This part of our mission became even more important as investment professionals shifted to a virtual world and needed ways to stay current on key and evolving topics in the investment industry and financial markets.

Our most prominent new initiative in the past year was launching the Investment Data Alliance, which enabled us to make US asset class return data available to CFA Institute members. The catalyst came with the publication of the 2020 Summary Edition of *Stocks, Bonds, Bills, and Inflation® (SBBI®)*. In partnership with Morningstar and Duff & Phelps, we were able to combine the publication of the latest edition with access to these historical data, along with monthly updates, by making this information available through the CFA Institute website. (The included data cover US large-cap stocks, small-cap stocks, corporate bonds, government bonds of various maturities, and inflation from January 1926 to the present.)

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The publication of *Stocks, Bonds, Bills, and Inflation: The Past (1926–1976) and the Future (1977–2000)* in 1977 by Roger Ibbotson and Rex Sinquefield was a milestone for the Research Foundation, and new editions were published annually for many years. When I was a young professor and later a Wall Street research head, access to these data was critical for me to try to answer so many questions about long-term return, risk, and correlation characteristics of asset classes. Recently, Roger Ibbotson, who is now a CFA Institute Research Foundation emeritus board member, offered to help connect us with Morningstar, where the data had resided for some time, and he worked with Executive Director Bud Haslett to spearhead this special project. Access to the dataset has been very well received by CFA Institute members, and the Research Foundation looks forward to providing more access through the Investment Data Alliance in the future.

As CFA Institute events switched to a virtual model because of the global pandemic, CFA Institute Research Foundation adapted by using social media to highlight the relevance and availability of our content and also by showcasing our authors at webinars sponsored by CFA Institute. The Research Foundation brief "ETFs and Systemic Risk," by Maureen O'Hara and Ayan Bhattacharya, two leading academic scholars in the area of market microstructure, was a good example of how salient our content became. Released in January 2020, this publication takes a close look at research on the impact of ETFs on financial markets and provides insights on regulatory risks associated with the growing use of ETFs as investing and trading vehicles. When the pandemic disrupted markets in February and March 2020, concern focused on the economic impact and uncertainty of the pandemic, making O'Hara and Bhattacharya's analysis even more relevant. In a CFA Institute webinar held in June, O'Hara assessed how ETFs weathered the storm of volatility earlier in the year.

Other publications released in 2020 also proved timely. The Research Foundation brief "Learning about Risk Management: Insights from Unconventional Risk-Takers" drew lessons from surprising sources, such as surfers and gamblers. The literature review *Artificial Intelligence in Asset Management* examined how the growing use of artificial intelligence in asset management has led to improvements and new challenges. Another literature review, *ESG and Responsible Institutional Investing Around the World: A Critical Review*, addressed an evolving area of great interest to CFA Institute members.

With support from your donations, CFA Institute Research Foundation will continue to provide quality research and data access to help investors deal with dynamic financial markets and improve investment decision making. We are proud that much of our content makes its way into CFA Program curriculum topics, provides a forum to educate on emerging areas of investing, and creates an important channel for academics and practitioners to share their knowledge with all investors.

Finally, I want to thank the board and staff of CFA Institute Research Foundation and CFA Institute for their help in producing this leading-edge research and express my gratitude to all the CFA Institute members who have generously contributed financial support.

# EXECUTIVE DIRECTOR'S REPORT

Bud Haslett, CFA
Executive Director
CFA Institute Research Foundation

In a year of unprecedented challenges, CFA Institute Research Foundation adapted and continued to move forward with achieving our mission. From using virtual models to deliver content to enabling access to valuable investment data, we strove to deliver timely research and resources to help investment professionals.

With the pandemic making in-person events impossible, we found other ways to deliver content. In collaboration with CFA Institute, we held virtual author webinars throughout the year. These efforts included Maureen O'Hara discussing her Research Foundation brief about exchange-traded funds (ETFs) and their influence on systemic risks; Pedro Matos elaborating on his literature review of academic research on environmental, social, and governance (ESG) investing; Elroy Dimson reviewing his Research Foundation book on financial market history; and Joachim Klement expanding on his forthcoming Research Foundation book, *Geo-Economics: The Interplay between Geopolitics, Economics, and Investments*. These events ranked among the most widely viewed of the CFA Institute webinars. Nevertheless, we look forward to supporting in-person events for local societies in the future.

The virus also changed the process for our two board meetings, which are normally held in person because they are so important for developing high-quality content. Both meetings were held virtually for the first time. Although the personal touch of face-to-face interaction was missing, the meetings were productive and efficient. We now have a model to follow should similar disruptions occur in the future.

As executive director, I always enjoy providing complimentary printed Research Foundation publications to CFA Institute local societies and other venues to be distributed to attendees of various events. In the absence of in-person events, however, the Research Foundation decided midyear to pause printing publications. Even though printing will resume when events start again, we have initiated an environmentally sensitive "digital first" philosophy for our publications that will carry us forward in the future.

This year was also remarkable for a reason that had nothing to do with the pandemic. The informative *Stocks, Bonds, Bills, and Inflation® (SBBI®): 2020 Summary Edition* and SBBI dataset returned to the Research Foundation after a 35-year absence. This reunion was made possible through a partnership between the Research Foundation and two leading investment information providers, Morningstar and Duff & Phelps.

Looking ahead, we anticipate publishing the 2021 Summary Edition of the *International*

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*Guide to Cost of Capital* (IGCC), which can be used to estimate country-level cost of equity capital globally, for more than 180 countries. This useful publication is based on the methodology highlighted in the 1998 Research Foundation publication on country credit risk.

In the future, we hope to add more datasets and publications to what we are calling the Investment Data Alliance, which includes SBBI and IGCC. Our goal is to provide valuable information for members of the investment community to help them excel at their jobs and better serve their clients. The plan for a board meeting scheduled for November 2021 in Chicago includes the formal launch event of the Investment Data Alliance with CFA Society Chicago and our partners at Morningstar and Duff & Phelps.

Additional plans for 2021 include a special 25th anniversary celebration of the Vertin Award as well as the 20th anniversary of the popular Equity Risk Premium Symposium. We are also working to publish translations for much of our content.

As always, we thank CFA Institute for its generous support of CFA Institute Research Foundation, which is particularly important during these trying times. We would also like to thank the tens of thousands of donors who have supported our mission over the past half century of our existence. We pledge to continue publishing high-quality independent research to assist the investment professional, and we look forward to serving you in the future.

# RESEARCH DIRECTORS' REPORT

Luis Garcia-Feijóo, CFA, CIPM
Associate Research Director
CFA Institute Research Foundation

Laurence B. Siegel
Gary P. Brinson Director of Research
CFA Institute Research Foundation

Managing risk turned out to be a theme for the past year. Fittingly, CFA Institute Research Foundation published a number of works related to risk management in a number of ways. These include retirement risk, personal risk, systemic risk, and the mother of all investment-related risks—that of fluctuations in asset values.

The risk of falling short of one's income needs in retirement is one that almost everyone feels personally. In a monograph titled *Is There a Retirement Crisis? An Exploration of the Current Debate*, George A. (Sandy) Mackenzie evaluates the amount of shortfall risk in the retirement system in the United States and other countries, based on a meta-analysis of industry and academic studies. Although "researchers offer a wide range of forecasts, with some warning of a severe crisis and others being more skeptical about the likely scale of the problem," Mackenzie concludes that those warning of a crisis are closer to the truth. Although many people are well prepared for retirement, an alarming number of people are not. Mackenzie also documents preparedness for health expenses and finds problems, especially in the United States.

In "ETFs and Systemic Risks," Maureen O'Hara and Ayan Bhattacharya review existing evidence on whether exchange-traded funds make financial markets more vulnerable to liquidity shocks, increasing instability. They highlight areas of concern and provide expert recommendations for regulators.

A different type of risk that may be closer to the typical investor's experience is the classic sense of volatility. Matthew T. Moran and Berlinda Liu describe and analyze volatility-based products in "The VIX Index and Volatility-Based Global Indexes and Trading Instruments." Although the first VIX Index was created in 1993, the widely followed futures and options instruments were launched more recently in 2004 and 2006. The authors explain the risks and possible benefits of investing in the VIX family of products.

In an extraordinarily productive career, MIT professor Robert C. Merton, 1997 Nobel

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Prize winner in economics, has changed the way investors think about option pricing, life-cycle financial decisions, continuous-time finance, and many other important topics. A *festschrift* was organized by MIT and Dimensional Fund Advisors to celebrate Merton's 75th birthday, and many of his most influential colleagues and students presented papers and speeches that are collected in the CFA Institute Research Foundation brief "Robert C. Merton and the Science of Finance: A Collection."

Allison Schrager's brief, "Learning about Risk Management: Insights from Unconventional Risk-Takers," involves a novel and creative take on risk. She profiles three individual risk-takers in detail. Labeling Hollywood as "the land of broken risk models," Schrager describes the efforts of Hollywood mogul Ryan Kavanaugh to develop a new economics of movies that takes into account the unpredictable environment that moviemakers face. She also chronicles poker champion Phil Hellmuth, a temperamental player who is nevertheless one of the best in the world and whose example shows how "we can overcome our biases when it matters." Finally, Schrager reports on a risk conference in Hawaii for big-wave surfers, one of the world's most dangerous sports, noting that the conscious management of risk is what makes big-wave surfing possible as an ongoing activity.

For many investors, particularly institutional ones, environmental, social, and governance (ESG) investing is also a risk-management decision. Pedro Matos reviews academic research on ESG investing from an international perspective, emphasizing the role of institutional investors, in his literature review, *ESG and Responsible Institutional Investing around the World: A Critical Review*. His analysis covers the past and present of ESG investing, as well as open research questions about the actual impact for society.

New technologies always present potential risks in addition to their advantages, and artificial intelligence is no different. In the literature review *Artificial Intelligence in Asset Management*, Söhnke Bartram, Jürgen Branke, and Mehrshad Motahari explain applications of artificial intelligence (AI) to portfolio management (including improved fundamental analysis through textual analysis, more accurate parameter estimation, and better asset allocation), trading (algorithmic trading, cost analysis, improved execution), and risk management. They also cover robo-advisers, which are receiving increasing attention. Furthermore, a unique aspect of the review is that the authors include a description of common AI concepts and tools, so the reader does not need to already be familiar with them to evaluate the asset management implications.

Finally, in 2020, CFA Institute Research Foundation resumed publishing a foundational work in the study of investment risk management. Originally produced in 1976 by Roger G. Ibbotson and Rex A. Sinquefield (and later by Ibbotson Associates), *Stocks, Bonds, Bills, and Inflation (SBBI)* compiles historical returns for most of the major US asset classes. CFA Institute Research Foundation has a long history with this project, having first published SBBI in 1977, and it was especially gratifying to make the SBBI dataset and the book *Stocks, Bonds, Bills, and Inflation® (SBBI®): 2020 Summary Edition* available to all CFA Institute members free of charge. Many thanks to Morningstar, Duff & Phelps, Roger Ibbotson, and James Harrington for their help on these projects.

The Ibbotson–Sinquefield work is best known for documenting the historical returns on these key asset classes and projecting their returns into the future, but the authors also measured the variability (risk) of those returns. Their projections of the future include probabilistic forecasts that acknowledge the riskiness of the future by incorporating measures of return variability that has occurred in the past. Whereas weather forecasters have been making probabilistic forecasts (e.g., a 10% chance of rain) for a long time, Ibbotson and Sinquefield were the first to apply this technology to investment returns, revolutionizing financial planning and asset allocation.

We look forward to a more peaceful and healthy year, but risks will be with us no matter what happens. A deep understanding of risk in all its dimensions is necessary to the practice of investment management, and we will continue to explore it in our work.