

RESEARCH FOUNDATION REVIEW 2016

Let's All Learn How
To Fish



Financial Market
History



Factor Investing
and Asset Allocation
Perspective



Technical Analysis



CFA Institute
Research
Foundation

RESEARCH FOUNDATION REVIEW 2016



CFA Institute
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ISBN 978-1-944960-21-6

May 2017

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I. THE YEAR IN REVIEW

MESSAGE FROM THE PRESIDENT AND CEO OF CFA INSTITUTE

Paul Smith, CFA
President and CEO
CFA Institute

The purpose of research is to inform action. After all, why conduct research if it isn't in the service of bettering society or suggesting a solution to a problem?

Well-conducted research is vital to the success of the investment management profession because it provides hard data on which policymakers, practitioners, and regulators can base their decisions. Today, the CFA Institute Research Foundation sponsors, publishes, and distributes cutting-edge research on topics that contribute to or improve global investment practices and the CFA Institute Global Body of Investment Knowledge, which is used by investment professionals all over the world.

One of the greatest challenges with research is the slow application of findings into practice. At CFA Institute, we are uniquely positioned to take what we learn from research and do something about it. Our global reach to nearly 150,000 members around the world allows us to amplify the work of the Research Foundation. We have helped our members and other investment professionals by defining how bubbles and crises impact investment markets; determining links between asset classes and risk factors; identifying challenges involved in using forecasts; and, using technical analysis, determining trends in supply and demand.

A key to successful research results is iteration: Researchers must return repeatedly to essential questions and methods that may reveal new ideas and approaches. But what happens if these thinkers and their viewpoints are homogeneous? The chances for innovation and new knowledge are then limited. For example, a 1985 study concluded that the historical lack of research focused on women's health had compromised the quality of health information and health care available to women. Since then, we have witnessed a transformation in women's health research, including changes in government support of research, in policies, and in regulations. These changes have resulted in the generation of new scientific knowledge about women's health and improved health care. Had the thinking remained in the hands of men only, this may not have happened. If innovation is a hallmark of research, then researchers must be open to greater diversity of thought. Research is a powerful tool that can effect positive change in society.

The Research Foundation also delivers research through in-person conferences and recognizes excellence in contributions to the global investment community through the James R. Vertin Award. Research produced by the Foundation has been widely quoted, sometimes for many years because much of the information presented has been way ahead of its time.

Researchers enhance our knowledge of how to best address the world's problems. We are all better investment professionals because of the efforts of the many researchers who have been so passionate about finding answers that strengthen our profession and the investors we serve.

MESSAGE FROM THE RESEARCH FOUNDATION CHAIR

Joachim Klement, CFA

Chairman

CFA Institute Research Foundation

As we grow older, our perspective in life starts to gradually shift from a forward-looking perspective (“What am I going to do in my career?”) to a more reflective perspective (“What have I done in my career that I can be proud of?”). As I look back on my career so far, I conclude that some of the proudest moments in my career were influenced by the CFA Institute Research Foundation.

In the 51 years since its inception in 1965, the CFA Institute Research Foundation has strived to fulfil its mission to provide independent, high-quality research that helps investment professionals effectively fulfil their duties with prudence, loyalty, and care. Governed by an all-volunteer group of trustees with extensive investment experience from all over the world and in a broad variety of disciplines, staffed with a small group of dedicated and hard-working employees and supported by CFA Institute, it seems a bold claim that the Research Foundation has been responsible for some of the proudest moments of my career. Yet, through its many publications, this is exactly what this organisation has done for me and many of its dedicated readers.

Our monographs are published electronically and in book form and cover important topics that shape the investment profession and our industry. Written by academics and practitioners in an accessible language without jargon, these monographs try to analyse a specific topic in depth. Written without bias or commercial interests, they allow readers to learn about the advantages and pitfalls of electronic trade execution, the coming challenges for retirement savings, or the proper techniques to implement factor allocations—to name just the latest topics covered by these books. Because they are written by independent experts in the field, fads and fashions that are all too common in our industry may get debunked while risks as well as opportunities are discussed in a fair and balanced way. It is this independence of research that provides the most important benefit to our readership. Working with private investors and institutional investors alike, I frequently get confronted with questions about the efficacy of a new product or investment approach, and the publications of the CFA Institute Research Foundation have helped me time and again to fulfil my fiduciary duty to my clients, answer their questions in a concise and transparent way, and help them make better decisions for their investments.

When I could help my clients avoid crucial financial mistakes because of an analysis I read from the Research Foundation, or when I could educate clients by handing them a copy of our primer for investment trustees or our recent conference proceedings on financial market history, or when these educational efforts not only increased the bond between my clients and me but helped them better understand their tasks as trustees or their challenges as investors—these are the moments that make me proud to be their adviser. In short, what we aim to do with our publications is to make our readers look good and help them differentiate themselves from their competitors.

Of course, not every topic can or should be covered in a book. Many of our readers are restricted for time or a topic is just too specialised to warrant an extensive analysis. Over time, we have thus started to provide research in shorter, easier to digest formats. Today, we publish literature reviews and webinars, and we organize a high-class workshop at the CFA Institute Annual Conference that is always well attended and well received by participants. In order to be able to cover topics in a concise and timely fashion, we launched the RF Briefs in 2015. These are shorter papers of 5 to 15 pages that can be read in less than half an hour and cover a crucial topic for practitioners. Throughout 2016 we have addressed such important issues as the difficulties of forecasting financial markets and its implications for portfolio construction, how to manage currency exposures for wealthy families with a global footprint and no clear home currency, and how to use behavioural finance to identify investor risk profiles.

This work has helped many of you and your peers to get better in your chosen professions. On behalf of the Research Foundation, I want to thank you for your support not only as readers and advocates of our publications but also through your generous donations. The Research Foundation is supported by CFA Institute but depends on donations from our readers and authors to fulfil its mission. By helping us with your donation, you will help the Research Foundation continue and expand its mission in the future.

EXECUTIVE DIRECTOR'S REPORT

Bud Haslett, CFA

Executive Director

CFA Institute Research Foundation

Now that the excitement and activity around the Research Foundation's 50th anniversary is behind us, we are focusing our attention on what we do best: producing high-quality, practitioner-focused research. During 2016, much of that research was developed through partnerships with other groups, which is why we consider 2016 to be "The Year of the Partnership."

The partnerships began with our first ever CFA Institute member society-based brief, "Portfolio Structuring and the Value of Forecasting." This Research Foundation (RF) Brief evolved out of a CFA Society Montréal event that featured speaker-contributors Andrew Ang, Mark Carhart, CFA, Craig Bodenstein, CFA, and others. Based on the project's success, we have approved additional society-based projects from CFA Society France (pension reform) and from a group of Latin American societies ("Latin American Capital Markets: Challenges and Solutions"). We are actively considering similar CFA member society-based content for the future.

The RF also partnered with a professional organization, the Market Technicians Association, to publish the literature review *Technical Analysis: Modern Perspectives*. This, in addition to a book on factor investing from investment experts at Pacific Investment Management Company (PIMCO), explored new ground for the RF in 2016. Going forward, we are considering partnership projects with other associations and companies.

Our close relationship with the CFA Institute Future of Finance initiative continued in 2016, resulting in the publishing of *Gender Diversity in Investment Management: New Research for Practitioners on How to Close the Gender Gap*. This ambitious project was organized by Rebecca Fender, CFA, head of the Future of Finance initiative at CFA Institute. She also served as co-author of this insightful study.

Another rewarding partnership, this time with Cambridge University, led to the book *Financial Market History: Reflections on the Past for Investors Today*. This multi-author piece, edited by David Chambers and Elroy Dimson, is widely considered to be one of our best. While reflecting on the past with the financial history book, the RF also looked to the future with the politically charged *Let's All Learn How to Fish... to Sustain Long-Term Economic Growth* by Michael S. Falk, CFA. This book provides food for thought for today's challenging global political environment.

In addition to our printed materials, a variety of multimedia content was released in 2016. Videos from the 15th Annual Research Foundation Workshop, featuring speakers Keith Ambachtsheer (pensions) and Larry Harris, CFA (trading), can be viewed on the Research Foundation website. Also, videotaped interviews with contributors to the *Financial Market History* book are available for your viewing pleasure. These interviews are perfect for those occasions when you just can't read another thing.

Thanks to additional support from CFA Institute, 2016 was also notable as we laid the foundations for an expanded RF author speaker program and content translations. This will allow for more CFA member societies and non-English-speaking investment professionals to benefit from the valuable insights provided by our content. The results of these outreach efforts will become more visible in 2017 and beyond.

The five-year-old RF Society Award Program was updated this year, too. Although no award was made during the year, the 2017 award will be segmented into three categories: content, events/activities, and website/social media. We look forward to recognizing the winners in next year's Review and adding them to the list of luminaries from previous years.

As another publication year concludes, we would like to once again recognize CFA Institute for its generous support. We could not do it without you! Likewise, a heartfelt thanks to the 7,000 plus donors whose contributions provide approximately one-third of the Research Foundation's funding. Each donation, whether \$10 or \$10,000, serves to confirm the value of our content and helps the RF make a more vibrant, better educated investment industry.

Serving as executive director of the CFA Institute Research Foundation continues to be the greatest honor of my professional career. My team and I continue to strive to make RF content and activities the very best for all of those in the investment management industry.

RESEARCH DIRECTOR'S REPORT

Laurence B. Siegel

Gary P. Brinson Director of Research
CFA Institute Research Foundation

In 2016, the CFA Institute Research Foundation published three research monographs (books), the *2015 Research Foundation Review*, one literature review, and five Briefs.

Research Monographs

The past year's research monographs are *Let's All Learn How to Fish...to Sustain Long-Term Economic Growth*, by Michael S. Falk, CFA; *Factor Investing and Asset Allocation: A Business Cycle Perspective*, by five authors associated with PIMCO; and *Financial Market History: Reflections on the Past for Investors Today*, a collection of essays edited by David Chambers and Elroy Dimson.

Michael S. Falk, CFA, *Let's All Learn How to Fish...to Sustain Long-Term Economic Growth*

In something of a departure for the Research Foundation, Michael Falk asks what makes us healthy, wealthy, and wise, and he beseeches us to pursue strategies that achieve those outcomes. He lays out a set of social policies and behaviors that encourage self-reliance and prosperity, and he proposes a safety net that is more like a trampoline, boosting those in unfortunate circumstances back into the productive economy.

Falk's work focuses on retirement, education, and health care. He believes that we should "retire" the idea of retirement, replacing it with, ideally, a transition from harder to easier work. He recognizes, however, that a large number of older workers cannot continue to work. Thus, we need two retirement ages, one for those with physically demanding jobs and one, at a substantially older age, for professional, technical, and managerial workers. He also proposes a set of "stipends" or payments to retirees designed to increase incentives to work, reward saving, and prevent poverty in old age.

Falk's ideas on education and health care parallel those related to retirement. He blends market solutions with public policies designed to encourage people to become not only more productive but also more self-reliant and less dependent on government. For example, those who take significant responsibility for their health should pay less for medical insurance. In these ways, Falk argues, the higher rates of economic growth that we desperately need can be achieved.

David Chambers and Elroy Dimson, editors, *Financial Market History: Reflections on the Past for Investors Today*

In June 2015, the Research Foundation, along with the Judge Business School at the University of Cambridge, conducted a conference in Cambridge, England, on the topic of financial market history. The conference included not only financial historians but “history historians,” finance practitioners, and others. The resulting volume, published by the Research Foundation, is not a set of presentations but a collection of fully edited, journal-quality, scholarly and practical articles on the topics addressed by each presenter.

The articles are categorized into five broad topic areas: long-run risk and return, stock markets, bubbles and crises, financial innovation, and new frontiers in financial history.

The philosopher George Santayana famously said that those who do know history are condemned to repeat it. Nowhere does this aphorism apply more directly than in financial markets. The crash of 2008 was a liquidity crisis and margin call foreshadowed by the crash of 1907. Many authors have compared the internet bubble of (roughly) 2000 with earlier bubbles—including the Dutch tulip craze of 1637, the South Sea and Mississippi trading-company bubbles of 1720, and the stock market boom and crash of 1929. (Some of our authors would caution us against overuse of the word “bubble,” which has a narrow technical meaning. These days it seems that everything is called a bubble, so we’ll stop.) By more fully understanding these historical episodes, investors can become more aware of the risks they face today.

We are confident that *Financial Market History* will be regarded as an important addition to the library of serious work on the operations and characteristics of markets.

Vasant Naik, et al., *Factor Investing and Asset Allocation: A Business Cycle Perspective*

The team of Vasant Naik, Mukundan Devarajan, Andrew Nowobilski, Sébastien Page, CFA, and Niels Pedersen addresses the topic of factor investing. Many researchers take the position that, while investors *think* they are buying stocks, bonds, real estate, and so forth, they are really investing in underlying economic factors, such as long-term growth, credit, inflation, and the foreign-exchange value of the dollar. The authors use this observation as a point of departure for allocating assets based on insights about the business cycle.

The authors write, “The investment universe available to a global investor is vast. The first task in optimal portfolio construction is to reduce the number of decision variables in this problem. We show that there is a manageable number of risk factors that describe the core of the global investable universe.”

Bonds are easier to characterize in terms of their factor exposures than stocks, so the authors begin with bonds. They describe the bond market in terms of its exposure to three or four macroeconomic factors, including the short-term riskless interest rate, the shape of the yield curve, and credit. Equities and currencies are subjected to a similar, but necessarily more complicated, analysis.

The authors then discuss how to construct multi-asset-class portfolios. They study the exposure of each asset class to each factor, the correlations between the factors, and the expected payoffs (based on the market price) for taking a unit of the risk of being exposed to each factor. The authors conclude by bringing alternative investments—including real estate, farm and timber land, infrastructure assets, hedge funds, and private equity—into the analysis. These assets are harder to model than conventional assets but enable the investor to gain exposure to sectors of the economy that the stock and bond markets do not offer.

Literature Reviews

Gordon Scott, Michael Carr, and Mark Cremonie, CFA, *Technical Analysis: Modern Perspectives*

Often regarded as akin to voodoo, technical analysis is the unloved stepchild of security analysis. Traditionally, technical analysis has focused on the use of past asset price patterns to forecast future returns. More recently, however, certain aspects of technical analysis have gained new respect in that these methods may shed light on the supply and demand for an asset (in contrast to the asset's underlying value, which is what fundamental analysts worry about). If you have special insight into the supply and demand for something, you may be able to forecast its price or return.

In addition, “momentum investing” has become popular among sophisticated investors. In the equity factor analysis associated with Eugene Fama and Kenneth French, momentum is the missing factor—in addition to the better-established market, size, and value factors—that explains returns. Momentum relates future to past price patterns and is thus consistent with technical analysis.

In *Technical Analysis: Modern Perspectives*, Gordon Scott and his co-authors describe the history, struggles, and re-emergence of technical analysis. They place a special emphasis on behavioral finance because the human mistakes documented in that field make it at least theoretically possible for technical analysis to be fruitful. They also find value in Andrew Lo's Adaptive Market Hypothesis, which is set against the classic efficient-market hypothesis and which uses behavioral insights to predict security prices.

The work of Scott et al. is scholarly and serious, and fully acknowledges the difficulties caused by some technical analysts having made extravagant and unsupported claims in

the past. The Research Foundation is pleased that we can shed new light on this overlooked aspect of the investment profession.

RF Briefs

In 2015 we introduced a new product, *RF Briefs*, which are global in origin and which are similar to journal articles, rather than books, in length and scope.

We published five Briefs in 2016:

"Risk Profiling through a Behavioral Finance Lens," by Michael Pompian, CFA

Building on Joachim Klement's 2015 Brief, Michael Pompian classifies wealth management clients into behavioral investor types to help determine what kind of investment plan they should recommend. Each type of investor identified by the author has a different optimal portfolio.

"Annuities and Retirement Income Planning," by Patrick J. Collins, CFA

Life annuities enable retirees to provide a lifetime income for themselves, but the US annuity marketplace is complex and inefficient. Investors and their advisers need to understand (1) the benefits and costs of annuities of all or part of one's wealth and (2) the various products in the marketplace.

"Overcoming the Notion of a Single Reference Currency: A Currency Basket Approach," by Giuseppe Balocchi, CFA, and H lie d'Hautefort

Most portfolios are managed as if there were a single "home currency" that is the only currency the investor cares about. But many wealthy families have a global footprint that causes them to consume, and thus have financial objectives or liabilities, in multiple currencies. To manage their currency risk, the authors suggest using a customized basket of currencies instead of a single currency as the investor's home or reference currency. The authors introduce a Global Reserve Currency Index.

"Portfolio Structuring and the Value of Forecasting," by Jacques Lussier, CFA, Andrew Ang, Mark Carhart, CFA, Craig Bodenstab, CFA, Philip E. Tetlock, Warren Hatch, CFA, and David Rapach

At a CFA Montréal event, a group of distinguished speakers covered two topics: (1) factor investing and (2) the value of forecasting. The authors reviewed the risk premiums (factors) that exist in the market and stated the case for “exotic beta,” a way of describing factor-based investing. They then discussed the value of forecasting and addressed issues involved in improving the accuracy and realism of forecasts.

"Gender Diversity in Investment Management: New Research for Practitioners on How to Close the Gender Gap," by Rebecca Fender, CFA, Renée Adams, Brad Barber, and Terrance Odean

This Brief summarizes the results of a survey of investment management professionals on the subject of gender diversity. Vietnam has the most and Saudi Arabia has the fewest women as a proportion of that country’s population of CFA Institute members. The United States is near the middle. Most women charterholders are married and have a spouse with a full-time occupation. Relatively few women CFA members are in C-suite roles. The authors conclude by recommending actions that will promote the inclusion of women in the financial workplace.

II. MONOGRAPH SUMMARIES

LET'S ALL LEARN HOW TO FISH . . . TO SUSTAIN LONG-TERM ECONOMIC GROWTH

Michael S. Falk, CFA

Give a person a fish and you feed him or her for a day; teach a person to fish and you feed him or her for a lifetime.

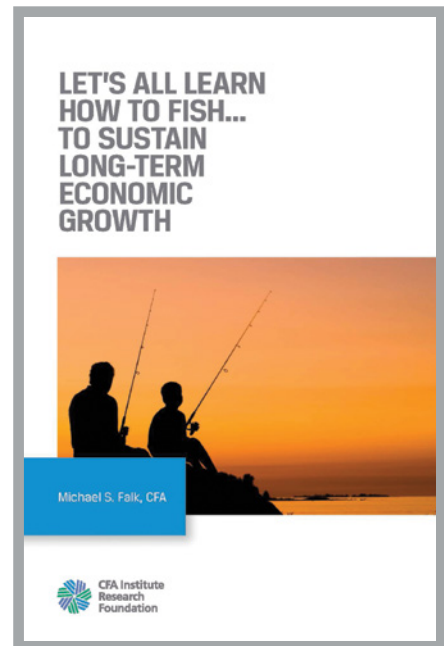
—*Author's paraphrase of a proverb attributed to Maimonides (1135–1204)*

For all of us, economic health and economic growth are heavily influenced by social policies on entitlements, government spending, taxation, and personal incentives—in particular, how we are motivated and what we are required to share with others. Therefore, this book begins with a consideration of these policies: Have we taught too few individuals how to fish for themselves and handed out too many fish?

First, consider those who need us to hand out fish. The following maxim, which has been attributed to Mahatma Gandhi, may be true: “A nation’s greatness is measured by how it treats its weakest members.” That is, for those who are unable to learn or no longer capable of fishing, let’s strive for this view of greatness and offer proper safety nets. According to Raghuram Rajan and Luigi Zingales (from their 2003 book *Saving Capitalism from the Capitalists*), “A safety net is . . . a mechanism to ensure political consensus for free markets . . . it is also a way to encourage people to invest in their future”—that is, save for their future.

Well-intentioned policies may not only fail to achieve greatness, however, but also conspire to defeat it. Well-intentioned but poorly designed or implemented incentives pose real risks to a prosperous economic future.

Policies that create incentives for retirement, employment, migration, fertility, and family formation affect the size of current and potential worker populations. In developed economies, the current custom of retiring at or near the age of 65 was based on two



premises that are no longer valid. First, in agrarian and industrial economies, where retirement as a policy was born, older individuals may have had little if any productive capacity beyond a certain age. In today's service-based economy, however, that is much less true. Second, the exit of everyone over 65 from the workforce was sustainable when the dependency ratio—that is, the ratio of workers to retired individuals—was about 20 to 1. This ratio, which was typical of an agrarian society in the early to mid-20th century, is no longer valid. Today, in developed economies, the dependency ratio—based on global life expectancies, fertility rates, productivity rate projections, and the changed physical nature of work in these countries—is closer to 3 to 1 and projected to shrink to 2 to 1 within 20 years. And although developing economies are in far better condition today than developed economies with regard to the dependency ratio, their population pyramids are aging rapidly. Can the societal wealth in the developing economies grow fast enough to allow them to avoid the challenges in today's developed economies?

Policies and costs that alter the value propositions of health insurance, education, and capital investments affect productivity. Consider, for example, health insurance. Among the myriad issues with health insurance coverage, we know that when a user of services is someone other than the payer for services, resources are expensively misallocated. One must also ask to what extent, if at all, health care is a right and, as a result, resource misallocations are simply a price to be paid. The United States is a particularly stark example of misallocation of resources. The United States spends roughly 2.5 times as much per capita on the delivery of health services as the OECD countries, on average, based on 2013 purchasing power parity data, but it has not demonstrated better outcomes—in terms of increased longevity or decreased infant mortality—than most other developed economies.

The economic growth of the past couple of centuries has accomplished some wonderful things for the citizenry of the world. Many people now worry, however, about whether our aging global economies can produce enough growth to overcome the massive debts accumulated and the even larger future liabilities, the “promises” made to current generations. To put the future—with regard to aging and its associated liabilities—into perspective, consider the following from a 2009 International Monetary Fund report: The whopping age-related costs are more than 10× the costs of the Great Recession.

The importance of today's policies cannot be overstated; the incentives—intended or otherwise—pose challenges to economic growth and its effect on all of us. What about the need to preserve hope for young people and for generations not yet born? Should not these generations have the same opportunities as their predecessors did? We should consider the interrelationships among people, their productivity, government-styled promises, and the prospects for growth. One method of estimating economic growth is, in fact, the sum of the growth in the number of workers and the growth in productivity; this method highlights the major factors in **Table 1**.

Table 1. Primary Factors Affecting Economic Growth

Effects on the Number of Workers	Effects on the Amount of Productivity
<ul style="list-style-type: none"> • Retirement • Employment/participation • Net migration • Fertility 	<ul style="list-style-type: none"> • Health • Education/skill relevancy • Investment capital

Considering all of these factors, policies that shrink worker populations or restrict productive capacity seem inadvisable. Yet, those policies are precisely what many world regimes advocate.

The book proposes some perspectives that broaden the purely economic accounting of success and suggests principles by which we might better pursue sustainable economic growth. Did you learn to fish on your own, or were you taught by someone else? Do you buy your fish at a market, or are fish simply given to you? Was it you and only you that succeeded at fishing? Even if you learned on your own, did you build or make your own fishing pole or dig up the bait used?

In some manner or form, success almost always has some assistance, if only from those who came before us. Can you appreciate the people, things, and circumstances that have enabled your success? Or do you, like so many, suffer from ADD—Appreciation Deficit Disorder? Are you “entitled”?

In addition, consider inclusive measures of economic success. Growth in GDP is not and has never been a fully inclusive or accurate measure of economic progress; aspects of improved quality of life are difficult to capture in numerical terms. Simon Kuznets, the Nobel Prize–winning economist who developed the system of national income accounting, said back in the 1930s, “The welfare of a nation can, therefore, scarcely be inferred from a measurement of national income” (from a 1933 NBER paper “National Income 1927–1932”). Economic growth and social progress are not identical. The costs of safety nets are simply a transfer to those who no longer work or will never work again, but some safety nets could be trampolines—an investment in those who can and are willing to work again. According to the business strategist Michael Porter, social progress is “the capacity of a society to meet the basic human needs of its citizens, establish the building blocks that allow citizens and communities to enhance and sustain the quality of their lives, and create the conditions for all individuals to reach

their full potential” (from Michael E. Porter, Scott Stern, and Michael Green, “Social Progress Index 2014 Executive Summary”).

With the current state of growth prospects as it relates to population and productivity factors as well as the preceding perspectives, the book turns to consider what could (should) be, not entitlement and not irresponsibility, but Entitlement to Responsibility with Appreciation (ERA). Three chapters are devoted to *principles* for policy designs in the realms of, respectively, retirement, health, and education. If people would simply work longer—increasing productivity and decreasing the need for transfers (payments) to retirees—the costs of aging would be demonstrably less than they are. To work longer, however, people need both *healthy aging* and the *proper education and skills* to find work.

One principle would include a *compassionate retirement* policy. Retirement may be a type of dependent variable to the variables of health and education, but it is also a primary financial goal for people. But retirement, stopping a person’s productivity, causes problems for modern societies, so incentives to leave the workforce need to fit both a society’s needs as well as its citizens’ desires. A compassionate retirement policy would have two retirement ages: one that delays the incentive for those who can work and another that respects the reduced physical capability of those who cannot.

Other principles in the area of *retirement* support bigger, strong societal “first pillar” (social security–type) benefits; a society-wide defined contribution pension plan (superannuation plan) with required contributions; and the discontinuance of defined benefit structures (apart from the first pillar plans).

A number of principles are given for improving the *health* of citizens. Together, these principles paint a picture of personal responsibility, thoughtful and complete access to care, and effective ways with which to manage costs. The principles attempt to align the incentives so that healthy aging becomes a high probability rather than simply a possibility.

The principles in the area of *education* are bifurcated among those for young children and those for university-aged young adults. Three keys to successful education for young children are longer days, longer school years, and nutritional support. As economies advance, so do education and skill demands, and the best way in which to broaden the capability in a population is to help ensure that fewer children get left behind. The call for these three policies will help not only children but also financially strapped households and the local economy in the long run.

The education principles directed toward young adults are designed to stretch our thinking about the all-too-common reality of small returns or big debts in exchange for education. How might the classic pattern of education—attending university for

roughly the ages 18–22—be broken to benefit everyone and better support lifelong learning?

Because this book focuses on improved principles for policy design—and because the future is uncertain—the three chapters on principles for retirement, health care, and education end with to-do lists (or at least suggestions) for today.

In 2004, Benoit Mandelbrot and Richard Hudson argued in *The (Mis)Behavior of Markets* that “the foundation” of financial markets needs repouring before any more repairs are done. The author of this book argues that the foundation of entitlement policies also needs repouring. Society’s policies and goals need to be rethought and rebuilt. Based on the expected (low to negative) rate of growth in the number of workers, productivity will need to rise simply to maintain current levels of growth, let alone increase them. In consideration of agedness (of populations and infrastructures) and current levels of global debt, sustainable economic growth requires more responsibility, more appreciation (*not* inflation), and more policies that encourage productive behavior. Policies that reward paying riders, not free riders, are needed.

Demographics do not have to be destiny. We have a choice. Our past does not need to be prologue (sorry, Mr. Shakespeare) to our future. But to ensure that it does not become so, all of us who are able need to take responsibility. If we can raise productivity and lengthen people’s productive capacity—which we can do—national growth rates can rise and become more sustainable than currently. With greater knowledge and skills and increased health, citizens will have the ability to work longer. And finally, we need to appreciate that not everyone is able to fish. Let all who can, however, learn how to fish . . . to sustain long-term economic growth.

The complete book can be found at
<http://www.cfapubs.org/toc/rf/2016/2016/2>.



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FINANCIAL MARKET HISTORY: REFLECTIONS ON THE PAST FOR INVESTORS TODAY

David Chambers and Elroy Dimson

Co-editors

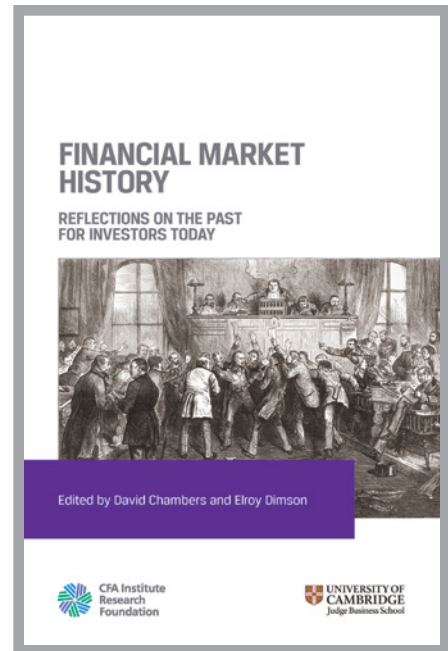
October 2016

Since the 2008 financial crisis, a resurgence of interest in economic and financial history has occurred among investment professionals. The monograph, *Financial Market History*, discusses some of the lessons drawn from the past that may help practitioners when thinking about their portfolios. The monograph is edited by David Chambers and Elroy Dimson, the academic leaders of the Newton Centre for Endowment Asset Management at the University of Cambridge.

Some investment practitioners have long understood the benefit of learning from our financial past. For example, Russell Napier, in his book *Anatomy of the Bear*, and Andrew Smithers and Stephen Wright, in their book *Valuing Wall Street*, use financial history to inform and guide their investment strategies. Many other excellent publications would repay any practitioner who wishes to gain a deeper understanding of why financial markets have developed in the manner they have over the last several hundred years. These include, to name but a few, Niall Ferguson's *The Ascent of Money*, William Goetzmann's and Geert Rouwenhorst's *The Origins of Value*, Raghuram Rajan's and Luigi Zingales's *Saving Capitalism from the Capitalists*, and William Goetzmann's recently published *Money Changes Everything*.

Collection of the essays in *Financial Market History* has been supported by the CFA Institute Research Foundation, the CFA Society United Kingdom, and others. The monograph brings together a series of chapters from leading academics in historical finance. Their shared motivation is to examine a wide range of subjects that they believe are particularly relevant for investors today.

One of the major ways in which financial history contributes to investment practice is by providing long-run series of data on different asset classes. Elroy Dimson, Paul



Marsh, and Mike Staunton summarize the long-run global evidence on the risk and return characteristics of such traditional asset classes as equities, bonds, bills, and exchange rates. Long-run return series span the broadest possible range of historical market conditions and are necessary for investors to understand likely future investment outcomes. Antti Ilmanen's essay complements this analysis by examining the time-varying properties of stocks. In particular, he considers how sensible it is to make use of long-run data series to try to time entry into and exit from markets. Jan Annaert, Frans Buelens, and Angelo Riva discuss some of the pitfalls to be avoided when assembling or using historical asset price data, especially equity and bond data. The temptation to simply download historical data in modeling risk and return, without thinking about the quality of the data and the care with which return series have been compiled, is to be avoided at all costs. Olivier Accominotti discusses the returns to two common currency-trading strategies, namely, carry and momentum. The tendency is to think that modern currency trading began after the collapse of Bretton Woods in the 1970s, but the foreign exchange market first emerged in its modern-day form in 1919. It seems we were largely unaware that currencies were actively traded through most of the 1920s and 1930s. Christophe Spaenjers provides investors with a fascinating insight into other assets that can be found in portfolios of high-net-worth individuals: real estate, collectibles, and precious metals and diamonds. Much academic work has been undertaken in recent years to collect historical prices of some of these assets, and we now have a better sense of their long-run performance characteristics.

Modern stock exchanges trace their origins back to Amsterdam in the early 17th century. Larry Neal's essay considers the origins and development of the most important stock market to emerge through the 19th century, the London Stock Exchange. How the LSE chose to organize itself had implications for the subsequent innovations in the way stocks were traded. Furthermore, some of the issues raised today by the emergence of electronic exchanges would have been familiar to the stock exchanges of more than a century ago, especially concerns about the liquidity with which stocks can be traded on the exchange. Caroline Fohlin's chapter offers a fascinating insight into how liquidity improved on the New York Stock Exchange in the early 20th century as technology improved, and she highlights how particular trading structures influence information flows and ultimately market liquidity. Carsten Burhop and David Chambers survey the long-run historical evidence about IPOs in the world's major stock markets. Their discussion addresses whether three phenomena—underpricing, the IPO cycle, and long-run underperformance—that are observed in modern markets existed in earlier times.

Stock markets and bubble episodes are frequently mentioned in the same breath. William Goetzmann reminds us that although bubbles insert themselves deeply into the investor psyche, they are relatively infrequent. He examines the frequency of large, sudden run-ups in stock prices since 1900 and concludes that the chances of the market giving back its gains following a doubling in value are only about 10%. In other words, based on the history of the 20th century, only a small fraction of stock market booms ever go sour and turn into bubbles. Eugene White provides investors with a survey of

the major bubble episodes, emphasizes the particular role played by irrational exuberance, and highlights the most important takeaways for investors to consider when the next bubble comes around. Charles Goodhart notes that financial crises usually arise when asset bubbles financed through bank credit expansion run their course. Prior to the middle of the 20th century, it was often a combination of an equity bubble with bank credit expansion that led to such a crisis; more recently, however, the key interaction has been between real estate boom/busts and credit expansion. Goodhart goes on to discuss the range of potential cures for such crises that have been offered but concludes that the achievement of a financial-crisis-free economy will remain elusive.

Financial innovation has been an important feature of financial market development over the centuries. Geert Rouwenhorst's essay on early financial contracts is a reminder that not all innovative security designs survive and that we can learn from those that do not as well as those that do. Tom Nicholas's contribution focuses on a particularly successful innovation in the United States, namely, venture capital. He describes the origins and development of high-tech venture investing in the post-1945 period and the factors that led to its success. Janette Rutterford and Leslie Hannah examine one of the most significant financial innovations in modern finance, namely, the institutionalization of securities investment via the rise of insurance companies, mutual funds, and pension funds.

This monograph is not intended to be exhaustive. Much important work by other eminent scholars has been omitted because of space limitations. Furthermore, as Barry Eichengreen's essay highlights, new frontiers in financial history are being opened up in the wake of the 2008 financial crisis. The hope of the editors is that this volume will persuade more practitioners that a detailed knowledge of the past can be worthwhile in tackling the investment challenges of the future.

The complete book can be found at
<http://www.cfapubs.org/toc/rf/2016/2016/3>.



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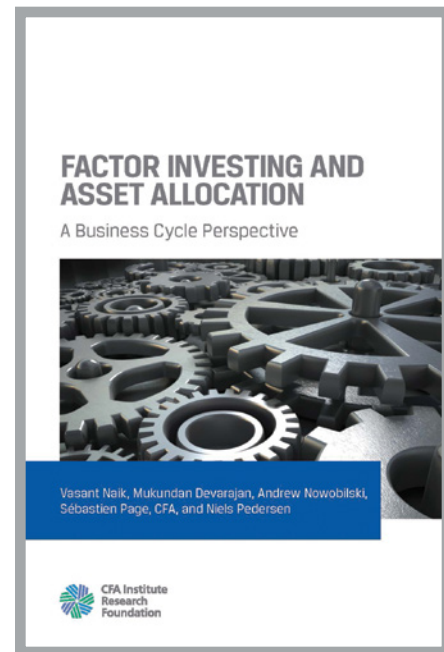
FACTOR INVESTING AND ASSET ALLOCATION: A BUSINESS CYCLE PERSPECTIVE

Vasant Naik, Mukundan Devarajan, Andrew Nowobilski, Sébastien Page, CFA, and Niels Pedersen

In this monograph, we develop an innovative approach to asset allocation that emphasizes risk factors and macroeconomic fundamentals. We answer several questions, including how to define the key risk factors driving returns in global financial markets; how to measure and estimate risk and risk premia; how to use these estimates to construct an optimal portfolio of risk exposures; and most importantly, what we can learn about these questions from historical evidence. Our framework combines robust quantitative analysis with investment judgment. We show that financial markets are strongly influenced by global macroeconomic fundamentals, such as the expected path of real growth, inflation, and monetary and fiscal policies.

In addition to macroeconomic fundamentals, our framework emphasizes the importance of market valuations in investment decision making (i.e., “what’s priced in”). Understanding areas where price fluctuations have created investment opportunities is an important focus of our process. We discuss how valuations are useful, albeit imprecise, signals of risk premia. We explore how to tackle the difficult task of separating changes in risk premia from changes in expectations, either of which could create apparent opportunities. While the former create a genuine investment opportunity, the latter do not.

The investment universe available to a global investor is vast. The first task in optimal portfolio construction is to reduce the number of decision variables in the problem. We show that there is a manageable number of risk factors that describe the core of the global investable universe.



Bonds are conceptually simpler than equities because their promised cash flows are more or less known with certainty and most of their risk can therefore be attributed to variations in discount rates (interest rates). For government bonds, three or four factors describe most of the fluctuations in the entire yield curve. These factors are the short-term riskless interest rate and factors representing the shape of the yield curve at short, intermediate, and long maturities. For bonds subject to default risk, we separate interest rate risk from credit risk. For a wide spectrum of credit market categories, yield spreads (in excess of government bonds) can be characterized by an overall market factor, a slope factor, and a sector factor (financials versus nonfinancials).

We take a similar approach for equities, seeking to understand how well a simple factor structure can explain the returns of concentrated portfolios. To that end, we relate the returns on region-sector subindices (e.g., Canadian banks) to the world equity index, regional indices, and global sector indices. Our results suggest that a high-level representation of equity markets can begin with a world equity index and then incorporate a small number of regional and global sector tilts. This approach would capture about 75% of the variation present in equity returns of region-sector portfolios.

For currencies, we argue that the question of how much currency risk should be hedged is best posed within the context of the overall portfolio. Since global currency markets are liquid and currency exposures can be managed directly, we do not need to conflate this risk with other risks in the portfolio. We can make an explicit allocation in the overall risk budget to currency risk as well as to equity, interest rate, and credit risks.

Next, to solve the overall portfolio construction problem, we need, as inputs, estimates of the volatility of various risk factors, of the correlations between them, and of the risk premia associated with them. We describe the empirical properties of risk factor volatilities and correlations and their macroeconomic drivers. Beginning with the familiar “Shiller critique” that asset markets are more volatile than fundamentals, we note that this effect may give rise to value opportunities where prices have deviated from fundamentals. We also note that volatility and correlations tend to be unstable. In particular, correlations become more extreme in recessions. “Risk-on” assets (such as equities and credit, which generally perform well when the economy is expanding) tend to become more correlated during recessions, while correlations between risk-on and “risk-off” assets (such as government bonds, which perform well during economic downturns) become more negative.

In addition to these important cyclical variations, there are secular shifts in some key correlations that portfolio managers and asset owners must understand. An example is the correlation between the returns on default-free bonds and equities. This correlation has switched from being mildly positive in the postwar period to being negative over the last 20 years. We examine the bond–equity correlation in detail to understand its historical drivers and present a model for assessing the outlook for this key relationship. We also characterize another important correlation for asset allocation:

the correlation between credit spreads and equity returns. Allocations to equities and credit assets are two complementary ways of gaining exposure to risk-on assets. Hence, this correlation determines how diversified the procyclical part of a portfolio is.

The second key input for optimal asset allocation is the risk premium per unit of risk (that is, the Sharpe ratio) for various risk factors. We present long-sample estimates of risk premia for key risk factors. We also discuss the dependence of realized interest rate, credit, and equity risk premia on the business cycle. While credit and equity returns have been procyclical, as expected, excess returns on interest rate duration (that is, the excess returns of long-term bonds over the short-term interest rate) have been strongly countercyclical. In addition, the stage of the business cycle matters. Equities, government bonds, and default-risky bonds outperform in early expansions. However, as expansions mature, monetary conditions tighten and slowing earnings growth increases the incidence of bondholder-unfriendly corporate actions. As a result, the performance of government bonds and credit assets suffers markedly. A positive estimate of the risk premium for procyclical assets, such as equities and corporate bonds, is consistent with economic theory, which states that assets that underperform when investors' aggregate wealth suffers a negative shock (i.e., assets that have a positive beta to the market portfolio) should carry a positive risk premium.

However, while riskless government bonds have countercyclical payoffs, they have historically earned a positive average excess return. This reality is hard to reconcile with theory. It may be conjectured that nominal government bonds carried a positive risk premium for inflation risk for a long time, given the experience of the Great Inflation of 1965–1985. The success of monetary policy in taming inflation came as a surprise to the bond markets, and bonds continued to deliver positive excess returns. The liability- or consumption-hedging value of risk-free bonds was priced into the yield curve only in the late 1990s, after fears of runaway inflation had been definitively conquered.

Next, we focus on the link between market valuation and risk premia. Since asset prices fall as expected risk premia increase (and vice versa), large variations in valuation metrics—such as dividend yield, earnings yield, and bond yields and spreads—should be indicative of significant changes in risk premia. Our empirical analysis broadly supports this conclusion. The excess volatility in financial markets makes it conceivable that value opportunities do appear from time to time, especially when the effects of negative economic news are compounded by sharp rises in demand for liquidity and immediacy. The challenge is to distinguish between a value opportunity and a value trap (an asset that is cheap for a reason).

Simple valuation metrics can help in this task. We review the evidence that valuation metrics, such as price-to-earnings ratios (P/Es) and bond yields, have some predictive power in forecasting returns. We show that while simple valuation metrics are generally informative of risk premia (both in the cross section and over time), they must be employed with care. Measures such as the cyclically adjusted P/E (CAPE) ratio can

drift for long periods of time away from their long-run averages, posing significant challenges to their use in value-driven investment strategies.

The bottom line is that a mechanical implementation of such metrics may not work. One should use a selection of valuation metrics (rather than relying on only one) and assess the forces that might have caused the apparent value opportunity. Despite these difficulties, the basic logic of a value-driven investment style is compelling. A robust system for generating valuation metrics and intelligently analyzing them is critical to any long-term investment process.

The next step in our framework for asset allocation is to combine the inputs of volatilities, correlations, and risk premia to construct an optimal portfolio of exposures to key global risk factors. We use a simple portfolio optimization model that incorporates investor views and show that despite its simplicity, this approach produces realistic portfolios. The key message is elementary but too often forgotten in practice: The optimal portfolio consists of a balance of procyclical (risk-on) and countercyclical (risk-off) exposures. Our framework avoids doubling up on macro bets and tries to exploit relative value between correlated macro risk factors. This approach helps avoid biases resulting from overconfidence in opinions about market outcomes, which are often less predictable than investors expect.

We also show how to bring considerations of tail risk into the optimization. This enhancement changes the optimal allocations to various risk factors—in particular, equities and credit spreads. Accounting for tail risk is necessary if the opportunity set includes risk factors with embedded negative convexity. Comparing a diversified portfolio of equities and a diversified portfolio of credit-risky bonds, we would typically find that the downside skew of the spread returns on the credit portfolio is worse than that of the equity portfolio (after normalizing for volatility differences), especially if the credit portfolio consists of investment-grade credits. In general, credit excess returns have a significantly higher beta to equities on the downside than on the upside.

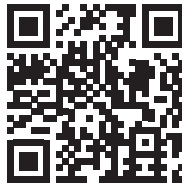
Finally, we incorporate considerations that come into play when we include alternative assets (those beyond publicly traded stocks, bonds, and currencies) in the optimal portfolio. These assets include real estate, farmland, timber, infrastructure assets, and assets managed by specialist managers, such as hedge funds, private equity managers, and venture capitalists.

These investments are illiquid, and transparency about the exact nature of the risks they entail is typically lacking. Investors must take special care in modeling the risk and factor exposures of these assets. We must explicitly unsmooth the time series of returns on alternatives. The unsmoothed returns can then be mapped onto risk factors that drive traditional assets as well as onto idiosyncratic factors. We use this construct to compute realistic estimates of volatilities, correlations, and Sharpe ratios for alternative assets.

Overall, this monograph is meant to be partly pedagogical, and it draws heavily on the vast body of knowledge that has been built by financial economists over the last 50 years. But our goal is to show how to solve real-life portfolio allocation problems. We have found that using a broad range of models works best. Also, we prefer simple over complex models. We believe that simplicity and modularity lend substantial robustness to investment analysis.

Importantly, the framework we present provides several of the “missing links” in asset allocation: for example, the links between asset classes and risk factors; between macroeconomic views and expected returns; and ultimately, between quantitative and fundamental investing. To do so, we draw on insights from numerous portfolio construction exercises inside one of the world’s largest asset management organizations.

The complete book can be found at
<http://www.cfapubs.org/toc/rf/2016/2016/4>.



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III. LITERATURE REVIEW SUMMARIES

TECHNICAL ANALYSIS: MODERN PERSPECTIVES

Gordon Scott, CMT, Michael Carr, CMT, and Mark Cremonie, CMT, CFA

Technical analysis provides a framework for informing investment management decisions by applying a supply and demand methodology to market prices. Underlying principles of the study of technical analysis are derived from the assumption that changes in the supply and demand of traded securities affect their current market prices. Tools of technical analysis are built into a framework that seeks to gain insight from the changes in supply and demand. This framework has evolved over time from a purely visual analysis to more quantitative techniques. Like other analytical tools, technical analysis employs a disciplined, systematic approach that seeks to minimize the impact of behavioral biases and emotion from the practice of investment selection; consequently, many institutional analysts, strategists, and portfolio managers fuse technical research with other analytical approaches, such as quantitative, fundamental, and macroeconomic methods.



Independent researchers have confirmed the value of technical analysis, beginning with the confirmation of the momentum anomaly. Momentum, or relative strength in the vernacular of technical analysts, has been applied since at least the 1930s. It is now widely accepted that relative strength analysis can help investment managers achieve statistically and economically significant excess. Additional research has confirmed the value of other technical tools, including pattern analysis, moving averages, and indicators.

More recent research has addressed the role of technical analysis in the broader context of financial markets and begins to trace the linkages among behavioral economics, individual actors in financial markets, and the role of technical analysis in studying the behavior of individual actors. In this literature review, a number of those studies are referenced. The review also discusses the evolution of technical analysis and how that evolution, in the tradition of other social science disciplines, has served to address many of the criticisms of the field. This review demonstrates that, over time, ideas

expressed by Charles Dow at the dawn of the 20th century have been validated in the 21st century. Researchers are now assessing the observations of analysts that built on Dow's theories, and technical analysts are applying this research to the market action in real time.

The idea that technical analysis has value as one tool among many in financial research finds strong support in scholarly literature as well as in the work of many practitioners. To show this support, we review recent publications and the work of a large group of practitioners on the topic of technical analysis in an institutional setting. The books and articles we cite are divided into three distinct groups: citations from technical analysis certification curricula, citations suggesting ways that technical analysis can be profitably integrated into investment selection methodologies, and recent citations that reflect a growing acceptance and validation of technical analysis.

In 2015, the Market Technicians Association (MTA), a worldwide professional association of technical analysis practitioners, conducted an extensive survey and analysis of job-related activity. The survey sought to identify how practitioners use technical analysis as part of their financial research activity and, particularly, what they considered the most critical knowledge and job skills involving technical analysis. This survey was part of the MTA's ongoing process of maintaining the curriculum readings for the three exam levels of the Chartered Market Technician (CMT), a FINRA (Financial Industry Regulatory Authority)-recognized designation for professionals in financial analysis. The survey sought to identify specific technical analysis knowledge and skills that were considered most valuable to practitioners today and, more specifically, what job tasks were performed using that knowledge and skill. This survey was the most comprehensive of its kind ever completed.

Analysis of the responses found that most practitioners did not use technical analysis in isolation but, rather, integrated their use of this analysis with other skills and knowledge. The responses also show that the approach used by practitioners is evolving over time. Nowadays, practitioners need an understanding of not only technical analysis but also aspects of other disciplines that can provide context for technical study. Based on insights from these responses, the exam curriculum was realigned to match the way that the discipline has evolved and to reflect the integration of technical analysis into financial research more generally. The redesigned curriculum draws on works that discuss not only technical analysis but also statistical analysis, quantitative analysis, behavioral finance, and fundamental analysis.

To help practitioners appreciate and understand the evolution of technical analysis as a modern discipline, the curriculum includes a treatment of the history, recent changes, and current practices in technical analysis. The curriculum also includes readings intended to help practitioners understand the issues that fostered resistance to this discipline in the financial industry. This information should help practitioners understand what practices improve the value of technical analysis, especially as the practice

of technical analysis evolves in a manner that can be called “fusion analysis,” or the inclusion of techniques from various disciplines in an integrated investment selection and decision-making model.

Because this effort was so comprehensive and conducted in a manner required by the development of psychometrically sound examinations, this review justifiably includes citations of the books and papers considered for inclusion in the readings for the CMT exams. This review also includes additional publications that contribute in significant ways to the understanding of how technical analysis can or does fuse with other disciplines in research activity. Finally, recent publications show the evolution of technical analysis toward a more robust and valuable body of knowledge and skill.

The complete book can be found at
<http://www.cfapubs.org/toc/rflr/2016/11/1>.



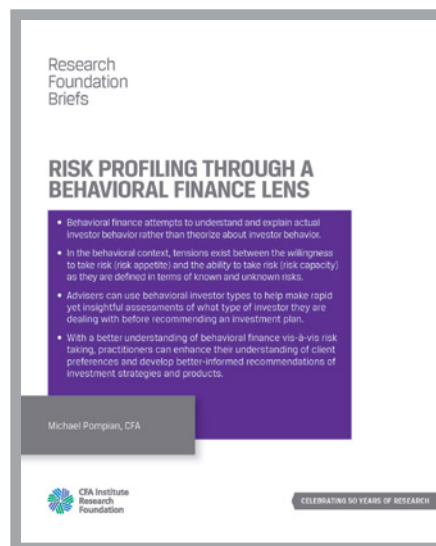
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IV. RF BRIEFS SUMMARIES

RISK PROFILING THROUGH A BEHAVIORAL FINANCE LENS

Michael Pompian, CFA

This piece examines risk profiling through a behavioral finance lens. Behavioral finance attempts to understand and explain actual investor behavior, in contrast to theorizing about investor behavior. It differs from traditional (or standard) finance, which is based on assumptions of how investors and markets should behave. Much has been written about the tension that exists between the willingness to take risk and the ability to take risk. Risk appetite is the willingness to take risk, and risk capacity is the ability to take risk. In the behavioral context, risk appetite and risk capacity are defined in terms of known risks and unknown risks. Irrational client behavior often occurs when a client experiences unknown risks. To aid in the advisory process, advisers can use Behavioral Investor Types to help make rapid yet insightful assessments of what type of investor they are dealing with before recommending an investment plan. With a better understanding of behavioral finance vis-à-vis risk taking, practitioners can enhance their understanding of client preferences and better inform their recommendations of investment strategies and products.



The complete book can be found at
<http://www.cfapubs.org/toc/rfbr/2016/2/1>.

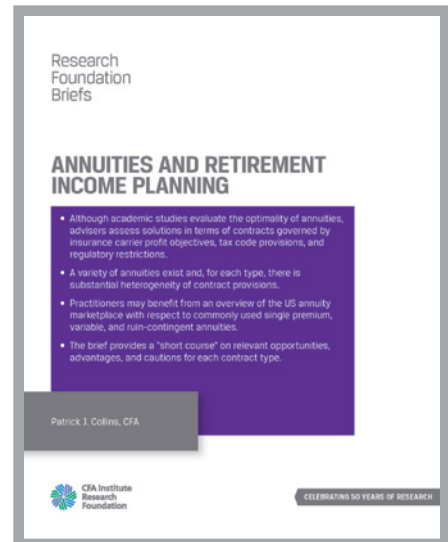


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ANNUITIES AND RETIREMENT INCOME PLANNING

Patrick J. Collins, CFA

Annuitization is one asset management strategy for retirees seeking to secure lifetime income. The US annuity marketplace offers a variety of annuity contracts, including single premium annuities, advanced life deferred annuities, variable annuities with lifetime income guarantee riders, and ruin contingent deferred annuities. Advisers seeking to provide guidance to clients in or near retirement can benefit by understanding (1) the arguments both for and against annuitization and (2) how a client's interests might be best represented in the marketplace. Important annuity contract provisions are highlighted and briefly discussed so the adviser can become more familiar with retirement-planning options.



The complete book can be found at
<http://www.cfapubs.org/toc/rfbr/2016/2/2>.

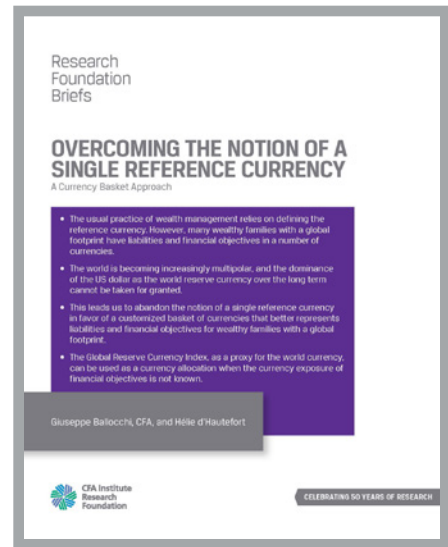


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OVERCOMING THE NOTION OF A SINGLE REFERENCE CURRENCY: A CURRENCY BASKET APPROACH

Giuseppe Balocchi, CFA, and H lie d'Hautefort

Wealthy families with a global footprint have liabilities and financial objectives in multiple currencies. In examining how families should manage currency risk, we find it necessary to revisit the functions of money as a store of value, a unit of account, and a medium of payment and to take a fresh look at the concept of risk in light of geopolitical changes. This approach leads us to abandon the notion of a single reference currency in favor of a customized basket of currencies, representing liabilities and financial objectives. We introduce the Global Reserve Currency Index, a useful proxy for the world currency. It can be used as a currency allocation benchmark when the currency exposure of financial objectives is not known. The currency basket approach we present enables wealthy families to benefit from reserve currency management techniques that are also used by central banks.



The complete book can be found at
<http://www.cfapubs.org/toc/rfbr/2016/2/3>.



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PORTFOLIO STRUCTURING AND THE VALUE OF FORECASTING

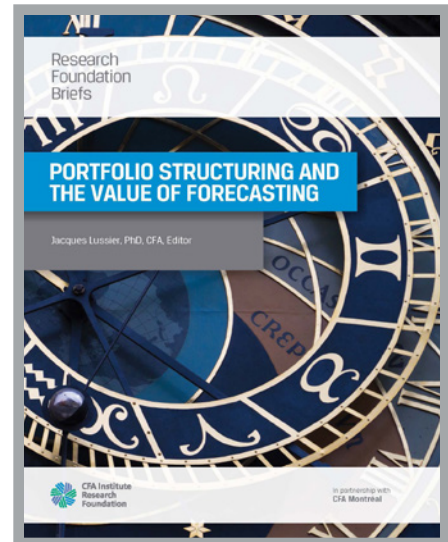
Jacques Lussier, CFA, Andrew Ang, PhD, Mark Carhart, CFA, Craig Bodenstab, CFA, Philip E. Tetlock, Warren Hatch, CFA, and David Rapach

On 8 October 2015, CFA Montréal hosted its annual Asset Allocation Forum under the theme “Portfolio Structuring and the Value of Forecasting.” Two asset management approaches were compared:

- The factor investing approach, which relies on identifying common factors in security returns, determining which factors represent compensated risks, and then extracting returns from a larger and more balanced set of compensated risks than traditional cap-weighted indices do
- The traditional approach, which relies on explicit forecasts of security—or industry-specific expected returns made by asset managers

Traditional asset management has sustained much criticism in recent years. Few active managers outperform their benchmark after fees over longer time horizons, such as 5 to 10 years. There has been much empirical evidence supporting the view that professional forecasters cannot predict or that their predictions explain only a very small part of the variability of asset returns. Hence, many investors are starting to embrace factor investing, which is becoming more commoditized and is often accessible at a lower cost.

However, even the factor investing approach relies on forecasts of expected returns, although the forecasts are implicit. Factor investors are not forecasting that the utility sector is likely to outperform the energy sector by X% over the next year (an explicit forecast), but they make the implicit forecast that, for example, value stocks are likely to outperform growth stocks in the long run. Hence, both approaches rely on some form of forecasting.



The objective of this forum was to shed some light on the factor investing approach, often called “smart beta,” while discussing recent developments in forecasting capabilities that may spur renewed interest in traditional asset management approaches.

The conference attracted five top speakers in their respective fields. Two of these speakers discussed the factor approach—Andrew Ang of BlackRock and Mark Carhart, CFA, of Kepos Capital. The other three speakers discussed our ability to predict—Craig Bodenstab, CFA, of Orbis, David Rapach of Saint Louis University, and Philip E. Tetlock of the University of Pennsylvania. Each speaker wrote up the most important aspects of his speech, and the write-ups are included in this brief.

The complete book can be found at
<http://www.cfapubs.org/toc/rfbr/2016/2/4>.



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GENDER DIVERSITY IN INVESTMENT MANAGEMENT: NEW RESEARCH FOR PRACTITIONERS ON HOW TO CLOSE THE GENDER GAP

Rebecca Fender, CFA, Renée Adams, Brad Barber, and Terrance Odean

In the last year, CFA Institute, along with many professional organizations, began to look more closely at the composition of its membership. We found a surprising number: Women represent less than one in five CFA charterholders. Why would this be?

The most enduring principle of sound investment management is diversification, yet it is remarkably absent from team construction across all spectrums of the investment profession. Can we improve investor outcomes through increased diversity in general, starting with the gender gap?

The idea that gender diverse teams have better outcomes in terms of corporate earnings and investment returns has been the subject of a growing number of industry papers¹ and even some new investment products, although academic findings to date have been mixed.² Furthermore, this is a topic that centers around firm culture, an important but understudied subject in the financial industry,³ and a lot of the work around cognitive diversity or collective intelligence has been done in other fields.⁴

Now, however, culture as a competitive edge is a growing area of interest in the investment industry, and the subject is of increasing concern to regulators of financial firms as well. Senior leaders across the industry who are adept at solving difficult problems have told us they can't seem to make progress in terms of attracting and retaining women investment professionals.

To uncover some of the underlying causes of the gender disparity in investment management, we developed a survey in consultation with finance scholars Renée Adams, Brad Barber, and Terrance Odean. We drew some questions from surveys conducted of the general population, which then allowed us to compare views of men and women



generally with views of men and women in the investment profession, using CFA Institute members as a proxy for the profession. We sent the survey to our membership in May 2016 and received responses from over 5,000 CFA members (more than 4,000 men and more than 1,000 women).

Adams, Barber, and Odean then analyzed the anonymized CFA survey data and compared the survey results with several additional datasets to investigate the question of why women are underrepresented in this field. The result of their efforts is the working paper titled “Family, Values, and Women in Finance” (2016) available on SSRN.⁵

Although we anticipate additional research will be generated from this dataset, the initial working paper provides an important first step in understanding the factors that modulate gender representation in investing.

In this executive summary, we highlight some key findings from the May 2016 CFA Institute survey and Adams et al.

¹ View a list at www.cfainstitute.org/WIM.

² For two recent reviews of the literature on corporate board diversity and firm performance, see Renée Adams, “Women on Boards: The Superheroes of Tomorrow?” *Leadership Quarterly*, vol. 27, no. 3 (2016): 371–386 (<http://dx.doi.org/10.1016/j.leaqua.2015.11.001>) and Deborah Rhode and Amanda Packel, “Diversity on Corporate Boards: How Much Difference Does Difference Make?” *Delaware Journal of Corporate Law*, vol. 39, no. 2 (2014): www.djcl.org/volume-39/2014-%e2%80%a2-volume-39-%e2%80%a2-number-2-2. Analyses of women CEOs are hampered by the fact that there are only 22 women CEOs in the S&P 500 Index. (See “Women CEOs of the S&P 500.” New York: Catalyst, July 1, 2016).

³ John R. Graham, Campbell R. Harvey, Jillian A. Popadak, and Shivaram Rajgopal, “Corporate Culture: Evidence from the Field,” Duke I&E Research Paper No. 2016-33 (July 7, 2016): <http://ssrn.com/abstract=2805602>.

⁴ For example, see Anita Williams Woolley, Ishani Aggarwal, and Thomas W. Malone, “Collective Intelligence and Group Performance,” *Current Directions in Psychological Science*, vol. 24, no. 6 (2015): 420–424 (https://www.researchgate.net/publication/286512331_Collective_Intelligence_and_Group_Performance).

⁵ Renée Adams, Brad Barber, and Terrance Odean, “Mores, Math, and Women in Finance,” working paper, 2016: ssrn.com.

The complete book can be found at
<http://www.cfapubs.org/toc/rfbr/2016/2/5>.



Use your mobile device to scan the QR code to go straight to the webpage.

V. MULTIMEDIA SUMMARIES

THE PERILS OF FORECASTING BY CRAIG BODENSTAB, CFA



Fall 2016 Board Meeting hosted by CFA Montréal

To view the video, visit:

<https://www.cfainstitute.org/learning/foundation/research/Pages/multimedia.aspx>.

FINANCIAL MARKET HISTORY PROMOTIONAL VIDEO



To view the video, visit:

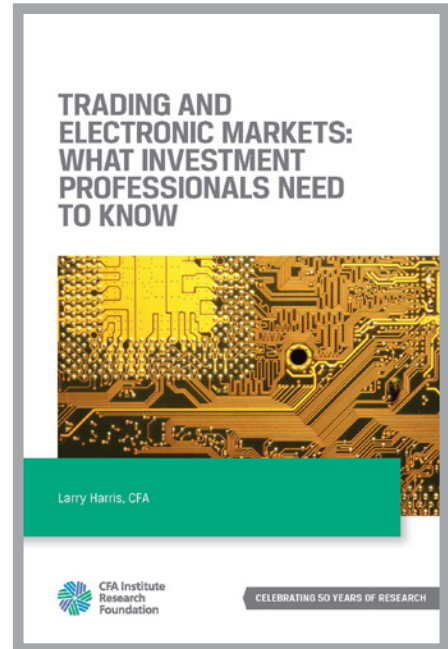
<https://www.cfainstitute.org/learning/foundation/Pages/index.aspx>.

VI. WORKSHOP FOR THE PRACTITIONER

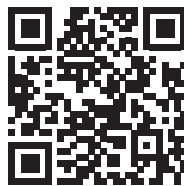
TRADING AND ELECTRONIC MARKETS: WHAT INVESTMENT PROFESSIONALS NEED TO KNOW

Larry Harris, CFA

Many financial problems involve trading in organized markets. Solving these problems successfully requires that traders effectively execute orders while appropriately controlling their transaction costs. This book provides buy-side financial analysts, investment managers, and investment sponsors with the tools to understand and manage recent innovations in trading that involve the automation of both trading systems and trading strategies.



The complete book can be found at
<http://www.cfapubs.org/toc/rf/2015/2015/4>.



Use your mobile device to scan the QR code to go straight to the webpage.

THE FUTURE OF PENSION MANAGEMENT: INTEGRATING DESIGN, GOVERNANCE, AND INVESTING

Keith P. Ambachtsheer

This speech for the 2016 CFA Institute Research Foundation Workshop for the Practitioner addressed three related pension management issues: design, governance, and investing. These issues were covered in my book *The Future of Pension Management*.

Pension Design

The traditional DB (defined benefit) and DC (defined contribution) formulas are converging into hybrids with such names as “defined ambition” (DA) and “target benefit” (TB). The Netherlands and Australia offer good examples. The former country is transforming its traditional DB plans into DA plans, and the latter is transforming its traditional DC plans into TB plans. At the same time, workplace pension coverage is expanding. The United Kingdom is leading the way with its National Employment Savings Trust (NEST) initiative, while the United States and Canada are now busy designing their own expansion initiatives.

Pension Governance

The process of reconciling the opposable needs for boards of trustees to be both representative and strategic continues to slowly move in the right direction. There is a growing understanding that it is not a question of either/or but rather of how to get *both* ingredients into board composition. Why both? Pension boards need legitimacy to be trusted, and they need to be strategic to produce value for money outcomes for their stakeholders. This strategic mindset addresses tough issues, such as organization design and culture, investment beliefs, incentives, and stakeholder communication and relations. Behind these governance imperatives lies the broader

question of organizational autonomy. Unnecessary legal and regulatory constraints are increasingly seen as “value for money destroyers” in pension organizations.

Pension Investing

Pension investing has been changing for the better too, starting with serious reexaminations of investment beliefs. Growing evidence shows that the leaders of the global pensions sector are beginning to see their jobs as transforming retirement savings into wealth-producing capital. A number of factors are at play here. One is the simple reality that good investment returns are increasingly difficult to come by. Another is a growing understanding of the zero-sum nature of short-horizon active management. Yet another is that both logic and empirical evidence support the idea that long-horizon active management should, and actually does, produce higher long-term returns than either short-horizon active or passive management. However, saying is one thing, doing another. For many pension organizations, a sizable aspiration/implementation gap still exists.

Five "Unreasonable" Men

A good deal of the necessary insight and inspiration for *The Future of Pension Management* came from five “unreasonable” men, as defined by the Anglo-Irish playwright George Bernard Shaw: “The reasonable man adapts himself to the world. The unreasonable one persists in trying to adapt the world to himself. Thus all progress depends on the unreasonable man.”

Nobel Laureate Jan Tinbergen’s claim to fame was establishing the principle that the number of economic policy goals has to be matched by an equal number of instruments designed to achieve them. This principle offers a way out of the longstanding affordability versus safety dilemma in pension design. Achieving these two goals effectively will require two instruments: one that focuses on affordability through long-term return compounding and another that focuses on providing payment safety for life.

Peter Drucker, the “father of modern management principles and practices,” asserted in his 1976 book, *The Unseen Revolution*, that pension organizations are not exempt from universal governance effectiveness dictates. Just like in any other organization, ineffective governance will produce poor outcomes for the pension organization’s stakeholders. Effective pension organizations have clear missions, inspired governance, and great execution capabilities.

In Chapter 12 of his 1936 opus, *The General Theory of Employment, Interest, and Money*, John Maynard Keynes makes a clear distinction between the dysfunctional short-term “beauty contest” investing practices of most institutional investors and

long-term investment processes that convert savings into wealth-producing capital. He noted that the latter seemed to be an unimportant, second-order activity for most institutional investors. He asserted that “beauty contest” investing is a zero-sum game played for the enjoyment of professional investors and funded by the fees paid by their clients. This game has little to do with real world wealth creation.

Nobel Laureate George Akerlof’s asymmetric information insight figures prominently in my thinking about the design of pension systems and organizations. He reminds us that the Adam Smith outcomes from free competitive markets (e.g., fair pricing and efficient resource allocation) require that all market participants have the same information when they buy or sell goods or services in those markets. He also demonstrates that when that is not the case, the result is unfair pricing and inefficient resource allocation. In the market for pension management services, sellers generally know more about what they are selling than buyers know about what they are buying. This asymmetry will result in buyers paying too much for too little unless steps are taken to level the informational playing field.

Roger Martin, former dean of the University of Toronto’s Rotman School of Management, has produced work on integrative thinking and the creative resolution of opposable ideas that also played an integral role in the structure and tone of this book. On integrative thinking, logic tells us we lose a lot by being “silo” thinkers. Connecting the dots (e.g., between pension design, governance, and investing) leads to more holistic thinking and more thoughtful solutions.

VII. AWARDS AND RECOGNITION

JAMES R. VERTIN AWARD

The James R. Vertin Award is presented periodically to recognize individuals who have produced a body of research notable for its relevance and enduring value to investment professionals. This award was established in 1996 to honor James R. Vertin, CFA, for his outstanding leadership in promoting excellence and relevancy in research and education.

2016 Vertin Award Winner



The James R. Vertin Award was presented to Terry Odean (left) by RF Trustee George Hoguet, CFA, at the Alpha and Gender Diversity: The Competitive Edge event held in Boston.

Terry Odean

Terrance Odean is the Rudd Family Foundation Professor of Finance at the Haas School of Business at the University of California, Berkeley. He is a member of the *Journal of Investment Consulting* editorial advisory board, of the Russell Sage Behavioral Economics Roundtable, and of the WU Gutmann Center Academic Advisory Board at the Vienna University of Economics and Business. He also is a *Wall Street Journal* expert panelist.

Past Vertin Award Winners

2015 Frank J. Fabozzi, CFA

2014 Kenneth R. French

2013 Richard C. Grinold

2013 Ronald N. Kahn

2012 Elroy Dimson

2010 Roger Clarke

2009 Robert Shiller

2008 Keith Ambachtsheer

2007 Campbell R. Harvey

2006 Clifford S. Asness

2005 Andrew W. Lo

2004 Edwin J. Elton

2004 Martin Gruber

2003 Barr Rosenberg

2002 William L. Fouse, CFA

2001 Rex A. Siquel

2001 Roger G. Ibbotson

2000 Peter L. Bernstein

1998 Martin L. Leibowitz

1997 Jack L. Treynor

1996 William F. Sharpe

RESEARCH FOUNDATION SOCIETY AWARD

The Research Foundation Society Award is an annual award to the CFA Institute member society or societies that do the best job of using Research Foundation (RF) content in an activity, product, or service. The goal of the award is to build a strong, effective working relationship between societies and the Research Foundation.

Some current RF programs that have evolved out of the Research Foundation Society Award include the following:

- RF content in society newsletters and on society websites
- RF author events and RF book distribution
- RF content distributed in company, university, and regulator outreach efforts
- RF content translations and creation of a book club with author conference call
- RF Research Challenge adviser presentation and RF book distribution
- RF board meeting hosting and creation of a society library with RF books

2016 Award Winners

No award issued

2015 Award Winners

- CFA Society Cleveland
- CFA Society Finland
- CFA Society France
- CFA Society Los Angeles
- CFA Society Milwaukee
- CFA Society Pakistan
- CFA Society Sydney

2014 Award Winners

- CFA China
- CFA Society San Francisco
- Indian Association of Investment Professionals
- CFA Society Philadelphia (Encouragement Award¹)

2013 Award Winners

- CFA Society Barbados
- CFA Society Hawaii
- CFA Society Pakistan
- CFA Society Italy
- CFA Society Emirates
- CFA Society Toronto
- CFA Society France (Encouragement Award)

2012 Award Winners

- Boston Security Analysts Society
- CFA Society Argentina & Uruguay
- CFA Society Buffalo
- CFA Society Bulgaria
- CFA Society Rochester
- CFA Society Seattle

The Research Foundation also extends a special thanks to societies that have hosted, or will be hosting, our trustee board meetings:

- CFA Society Toronto (Spring 2013)

- CFA Society San Francisco (Fall 2013)
- CFA Society Los Angeles (Spring 2014)
- CFA Society Minnesota (Spring 2015)
- New York Society of Security Analysts (Fall 2015)
- CFA Society Dallas/Fort Worth (Spring 2016)
- CFA Montréal (Fall 2016)
- CFA Society United Kingdom (Spring 2017)

¹The Encouragement Award is granted to a society whose efforts with the Research Foundation are commendable but not quite extensive enough to receive the Society Award.

RESEARCH FOUNDATION LEADERSHIP CIRCLE

The Research Foundation Leadership Circle honors investment professionals whose outstanding commitment and contributions have benefited the Research Foundation over an extended period of time. The Research Foundation is honored to recognize the following members of the Leadership Circle:



Gary Brinson, CFA



George Noyes, CFA



Frank Reilly, CFA



Fred Speece, CFA



Walter Stern, CFA



James R. Vertin, CFA

VIII. RECENT PUBLICATIONS

RECENT PUBLICATIONS FROM THE RESEARCH FOUNDATION ARCHIVE

2015

Monographs

The Industrial Organization of the Global Asset Management Business (November)

Ingo Walter

The dynamics of the asset management business are complex and geographically diverse. Products and vendors compete within and across markets and often shade into each other. Regulation can differ dramatically according to financial systems and functions. Here are discussed the major asset management sectors—pension funds, mutual funds, alternative investment vehicles, and private wealth management. Despite the complexity of the industry, common threads run through the discussion—growth, risk, and cost—that cannot be ignored by asset managers hoping to be sustainably profitable. What is required to excel includes distribution in leading markets, product breadth and consistency, global money management expertise, and capital strength. Also needed are technological capability, marketing and customer service skills, defensible pricing, low-cost production, and a strong brand. All these characteristics must be rooted in an affirmative culture with cohesive senior management and a talented and motivated staff.



Trading and Electronic Markets: What Investment Professionals Need to Know (October)

Larry Harris, CFA

The true meaning of investment discipline is to trade only when you rationally expect that you will achieve your desired objective. Accordingly, managers must thoroughly understand why they trade. Because trading is a zero-sum game, good investment discipline also requires that managers understand why their counterparties trade. This book surveys the many reasons why people trade and identifies the implications of the zero-sum game for investment discipline. It also identifies the origins of liquidity and thus of transaction costs, as well as when active investment strategies are profitable. The book then explains how managers must measure and control transaction costs to perform well.

Electronic trading systems and electronic trading strategies now dominate trading in exchange markets throughout the world. The book identifies why speed is of such great importance to electronic traders, how they obtain it, and the trading strategies they use to exploit it. Finally, the book analyzes many issues associated with electronic trading that currently concern practitioners and regulators.



A Comprehensive Guide to Exchange-Traded Funds (ETFs) (May)

Joanne M. Hill, Dave Nadig, and Matt Hougan

Exchange-traded funds (ETFs) have become in their 25-year history one of the fastest growing segments of the investment management business. These funds provide liquid access to virtually every financial market and allow large and small investors to build institutional-caliber portfolios. Yet, their management fees are significantly lower than those typical of mutual funds. High levels of transparency in ETFs for holdings and investment

strategy help investors evaluate an ETF's potential returns and risks. This book covers the evolution of ETFs as products and in their uses in investment strategies. It details how ETFs work, their unique investment and trading features, their regulatory structure, how they are used in tactical and strategic portfolio management in a broad range of asset classes, and how to evaluate them individually.



Geopolitics for Investors (March)

Pippa Malmgren

Geopolitical issues have a profound effect on investment strategies and results. Investors inevitably must balance risk and reward. Geopolitics can bring both risks and opportunities, large and small, onto the investment landscape. The question is, How much time and effort can be devoted to this particular task? Prediction is nearly impossible but preparedness is attainable and desirable. Fund managers and investors need to ask whether preparedness is best achieved through scenario planning, by including geopolitics as one of many drivers of the investment strategy, or by changing the investment team or the information sources and services that the team uses. As always, markets represent diverse interests and abilities. Some investors will find a way to add geopolitics to their investment scenarios and to profit from it. Others will take comfort in knowing that they were not alone in utterly ignoring geopolitics. This monograph offers some core ideas about how to think about the subject. These ideas may prove useful as geopolitics returns to the investment landscape with increasing force.



Literature Reviews

“Longevity Risk and Retirement Income Planning” (November)

Patrick J. Collins, CFA, Huy D. Lam, CFA, and Josh Stampfli

The past 50 years have seen an abundance of research on retirement planning and longevity risk. Reviewed here is the academic side of the research and its varied viewpoints and nuances. The evolution of retirement risk models, retirement portfolio problems and solutions, and annuities are some of the many topics covered.



RF Briefs

“Investor Risk Profiling: An Overview” (April)

Joachim Klement, CFA

The current standard process of risk profiling through questionnaires is highly unreliable and typically explains less than 15% of the variation in risky assets between investors—mostly because the questionnaires focus on socio-economic variables and hypothetical scenarios. The existing research in risk profiling shows, however, that several factors can provide more accurate and reliable insights into the risk profile of investors. Among these factors are the lifetime experiences an investor has had, the financial decisions made in the past, and the influence of family and friends as well as advisers. By using these factors, practitioners can get a better understanding of their clients’ preferences in order to recommend suitable investment strategies and products.



2014

Monographs

The New Economics of Liquidity and Financial Frictions (December)

David Adler

The New Economics of Liquidity and Financial Frictions is a book about a new branch of economics that is largely a synthesis of macro and finance. In many ways, it is a radical departure from the older, frictionless approach still prevalent in economic textbooks and most of academia. This book provides a new understanding and approach to asset pricing, risk measurement and management, central banking policy, and the overall working of today's economy, including questions of financial stability.

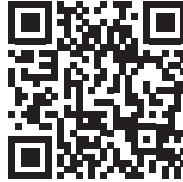


Investment Management: A Science to Teach or an Art to Learn? (May)

Frank J. Fabozzi, CFA, Sergio M. Focardi, and Caroline Jonas

Following the 2007–09 financial crisis, mainstream finance theory was criticized for failing to forecast the market crash, which resulted in large losses for investors. Has our finance theory, which many consider an idealization that does not take reality into account, failed investors? Do we need to reconsider the theory and how it is taught (and practiced)? This book explores current critiques of mainstream theory and discusses implications for the curricula of finance programs as well as for

practitioners. In so doing, the authors integrate a review of the literature supported by conversations with finance professors, asset managers, and other market players.



Environmental Markets: A New Asset Class (January)

Richard L. Sandor, Nathan J. Clark, Murali Kanakasabai, and Rafael L. Marques

Population growth, industrialization, and urbanization in the past 200 years have resulted in local, national, and global pollution of our environment. Markets, when designed properly, can be a powerful agent to combat this pollution. Environmental finance is thus the art and science of using economic incentives, financial tools, and market mechanisms to achieve desired environmental outcomes.



Literature Reviews

“Islamic Finance: Ethics, Concepts, Practice” (November)

Usman Hayat, CFA, and Adeel Malik, PhD

Islamic economic thought and finance are rooted in Islamic ethics. Their ideals and means are not, however, exclusive to Islam. The principles of Islamic finance emphasize market-based risk-sharing modes of financing that promote assets and enterprise, deploy finance in service of the real economy, and facilitate redistribution of wealth and opportunity. Modern Islamic financial practices, however, privilege legal form over economic

substance, which creates an expectations gap between Islamic finance's theory and practice. In the wake of the global financial crisis of 2007–2008, the ideas underlying Islamic finance appeal to those more concerned with the broader impact of finance on society.



“Investment Professionals and Fiduciary Duties” (September)

Marianne M. Jennings

The distinction between brokers and investment advisers has become increasingly blurred over the past 30 years. In a 2011 study, the US SEC recommended that there be one uniform standard for both broker/dealers and investment advisers. In addition, all investment professionals could benefit from some standards. Through a review of market history, literature, and general principles from fiduciary relationships, some simple concepts emerge that could help investment professionals navigate the conflicts of interest that are inevitable given the often blended roles that they play in the financial markets.



“The Principal–Agent Problem in Finance” (March)

Sunit N. Shah

The relationship between a principal and the agent who acts on the principal's behalf contains the potential for conflicts of interest. The principal–agent problem arises when this relationship involves both misaligned incentives and information asymmetry. In asset management, factors contributing to the principal–agent problem include managers' compensation structures and investors' tendency to focus on short-term performance. In

the banking industry, myriad principal–agent relationships and complex instruments provide a fertile breeding ground for incentive conflicts, many of which were highlighted by the recent financial crisis.



2013

Monographs

Manager Selection (December)

Scott D. Stewart, CFA

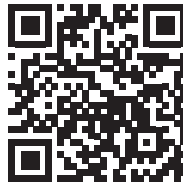
Manager selection is a critical step in implementing any investment program. Investors hire portfolio managers to act as their agents, and portfolio managers are then expected to perform to the best of their abilities and in the investors' best interests. Investors must practice due diligence when selecting portfolio managers. They need to not only identify skillful managers but also determine the appropriate weights to assign to those managers. This book is designed to help investors improve their ability to select managers. Achieving this goal includes reviewing techniques for hiring active, indexed, and alternative managers; highlighting strategies for setting portfolio manager weights and monitoring current managers; and considering the value of quantitative and qualitative methods for successful manager selection.



Fundamentals of Futures and Options (November)

Roger G. Clarke, Harindra de Silva, CFA, and Steven Thorley, CFA

Derivative securities and markets have experienced tremendous worldwide growth since 1970. But even so, they are not always well understood. To remedy this situation, the authors explain the link between options and futures and the underlying security or index from which they ultimately derive their value. Pricing and hedging relationships of futures contracts, option characteristics and strategies, and option pricing and hedging relationships are also addressed. To further assist the reader, the authors include exercises to reinforce the concepts as well as a glossary. The result is an updated look at options and futures that can benefit many of us.

*Life Annuities: An Optimal Product for Retirement Income* (May)

Moshe A. Milevsky

This book provides a summary of research on life annuities, longevity insurance, and their role in the “optimal” retirement portfolio. It starts with an overview of institutional aspects, moves on to discuss valuation issues, and concludes with a comprehensive review of the scholarly literature.



Literature Reviews

“The Evolution of Asset/Liability Management” (September)

Ronald J. Ryan, CFA

This review tracks the development of asset/liability management from its roots in liability management outsourcing to its most recent interpretation as a broad liability-driven investing strategy.



“Ethics and Financial Markets: The Role of the Analyst” (September)

Marianne M. Jennings

The ethical issues that financial professionals face are no different from the ethical issues in any profession—or, indeed, the day-to-day dilemmas we all face. These issues are readily resolved through the use of three simple questions: Does this violate the law? Is this honest? What if I were on the other side? These three basic ethical standards are often complicated, extrapolated, rationalized, refined, and confused as those in the financial markets grapple with what they believe are more complex ethical issues today than in the past. But as this review shows, the ethical issues in the financial markets today are no different from those that managers of money and assets, financial advisers, and analysts have faced over the centuries.



STANDARDS AND ADVOCACY GROUP CONTENT

The Research Foundation and the Standards and Advocacy group at CFA Institute are now partners in driving the vision of the future for investment management practitioners. As such, we are honored to provide summaries and links to some of the group's content published during 2016, including work from the Future of Finance initiative.

Investor Uses, Expectations, and Concerns on Non-GAAP Financial Measures (September 2016)

Non-GAAP financial measures (NGFMs) are a core part of how companies communicate their performance, and they are meant to supplement measures required by accounting standards (e.g., US GAAP and IFRS). Episodes of abuses or misleading NGFMs reporting have recently been a source of popular commentary in media and also led to intense scrutiny from different securities regulators. This report sheds light on investor uses, expectations, and concerns on NGFMs, informed by a survey of CFA Institute members—mostly buy-side analyst and portfolio manager respondents. In Part 2 of this report, *Bridging the Gap: Ensuring Effective Non-GAAP and Performance Reporting*, we articulate actions required to improve communication of these measures and enhance the overall performance reporting framework.

Bridging the Gap: Ensuring Effective Non-GAAP and Performance Reporting (November 2016)

This report builds on Part 1, *Investor Uses, Expectations, and Concerns on Non-GAAP Financial Measures*. Non-GAAP financial measures (NGFMs) are a core part of how companies communicate their performance, and they are meant to supplement measures required by accounting standards (e.g., US GAAP and IFRS). This companion report articulates actions required to improve communication of these measures and enhance the overall performance reporting framework. It also highlights the role that securities regulators have in imposing discipline around reporting NGFMs. The first part and this publication are informed by a survey of CFA Institute members—mostly buy-side analyst and portfolio manager respondents.

Corporate Governance Policy in the European Union: Through an Investor's Lens (August 2016)

This report provides an evaluation of the corporate governance landscape in the European Union (EU) and sets forth investors' perspectives to strengthen governance

policy and practices. The report is informed by a series of workshop discussions with investors and other stakeholders. It develops a narrative of the history of governance regulation in the EU since 2000; assesses the current state of the corporate governance agenda; and considers the future of corporate governance reform, articulated through an investor's lens. It concludes with a series of action memoranda to shape governance standards and practices.

Top-Line Watch: Investor Considerations in Run-up to 2018 (July 2016)

The clock ticks away toward a new world where there could be potentially significant revenue recognition changes due to the revised International Accounting Standards Board (IASB) and US Financial Accounting Standards Board (FASB) guidance, which will be effective from 2018. Pronounced changes in the amount and timing of revenue recognized could arise for companies whose business models depend on long-term customer contracts (e.g., engineering, aerospace, defense, infrastructure, and real estate development).

The paper highlights key areas within the revised guidance that could affect reporting outcomes for long-term contracts and need to be at the forefront of investors' attention. These areas include criteria for recognizing revenue over time in a fashion similar to the current percentage-of-completion (POC) method, significant financing components, additional cost recognition and disclosures requirements, and transition considerations. This paper also extends the analysis of "Watching the 'Top Line': Areas for Investor Scrutiny on Revenue Recognition Changes," which reviews transition requirements, multiple deliverables within a contract, license revenue, gross versus net presentation of revenue, and customer credit risk.

User Perspective on Financial Instrument Risk Disclosures under International Financial Reporting Standards (May 2016)

Given the need and stakeholder pressure to improve financial instrument risk disclosures, as evidenced by the 2007–09 global financial crisis, CFA Institute has undertaken a study examining the quality of existing financial instrument risk disclosures. The specific risk disclosures reviewed in this study concern credit, liquidity, market, and hedging activities under International Financial Reporting Standards Statement No. 7, Financial Instruments: Disclosures (IFRS 7). This report (Volume 1) articulates a user perspective and expectations on financial instrument credit, liquidity, and market risk disclosures based on the CFA Institute study. This report proposes general and specific recommendations for improving such risk disclosures. As an extension of this report, a separate report (Volume 2) provides a user perspective on the disclosures of derivatives and hedging activities.

Watching the "Top Line": Areas for Investor Scrutiny on Revenue Recognition Changes (April 2016)

Reported revenue heavily influences investors' overall view of reporting companies' prospects. The IASB and FASB have each issued largely converged revenue recognition standards that will take effect by 2018. This paper highlights aspects of the new guidance that are worthy of investor attention and discusses the implications of these aspects on the amount, timing, uncertainty, and presentation of reported revenue. The paper also emphasizes the importance of making investors aware of reporting outcomes that could arise from transition requirements and the need for them to monitor revenue trends before and after the standard takes effect.

Corrupt or Collaborative? An Assessment of Regulatory Capture (July 2016)

To learn more about how much the actions of those who apply and enforce regulations are unduly restrained or even manipulated by those being regulated, regulators, CEOs, chief compliance officers, general counsels, and chief risk officers were interviewed. A majority believe that the perception of regulatory capture has been exaggerated by the media and anecdotal reports and that regular interaction between regulators and the industry is vital for effective regulation. Acceptance of the positive rationale for coordination and cooperation could help reduce regulatory capture by encouraging the enforcement of new conflict-of-interest policies and an increased focus on ethics and transparency.

Payment for Order Flow in the United Kingdom: Internalisation, Retail Trading, Trade-Through Protection, and Implications for Market Structure (June 2016)

We investigate the 2012 clarification that banned the use of payment for order flow arrangements in the United Kingdom. We find that over the period 2010–2014, the proportion of retail-sized trades executing at the best quoted price increased from around 65% to more than 90%, suggesting that the integrity of the order book has improved. We argue that quote integrity can be maintained without trade-through protection.

Data and Technology: Transforming the Financial Information Landscape (June 2016)

In this report, we examine the effects of data and technology on the finance function—the capture/collection of data, their management, analysis, and their use in the production and presentation of financial reports, as well as the audit of those reports. We assess how data, data analytics, and technology may transform the financial reporting process to make it more effective, resulting in greater transparency for investors. Finally, we outline our vision for broader and deeper use of structured data—that is, across all reports in their entirety—to bring about untold efficiencies and transparency for all users.

Discovering Phi: Motivation as the Hidden Variable of Performance (October 2016)

Short-term thinking has disconnected us from our shared purpose: achieving clients' long-term goals and in turn contributing to economic growth. The investment management industry and its professionals need to move from a performance-driven culture to one that is purpose-driven to better ensure clients' long-term goals are met. During 18 months of surveys, interviews, and data analysis, CFA Institute and the State Street Center for Applied Research set out to answer the question, "How can we leverage the motivation of investment professionals and their clients to achieve better financial outcomes?" The research identified "phi" as a factor that aligns the goals and values of the investment professional, the organization, and the client—creating the greatest potential for long-term, sustainable performance.

From Trust to Loyalty: A Global Survey of What Investors Want (February 2016)

In this survey, we investigated the level and nature of trust within the investment community, surveying retail investors and institutional investors around the world. We asked how much they trust financial services and how loyal they are to their current investment firms. The findings, including comparisons with the 2013 CFA Institute and Edelman Investor Trust Study, offer investment professionals and firm leaders insights into how to strengthen client relationships and build better firms.

- Retail investors' trust in financial services increased in the United States, United Kingdom, and Australia and fell in Canada and Hong Kong since 2013.
- Investment costs are even more important than performance to investors globally, and firms are not meeting expectations in this area.
- Institutional investors rank ethical standards above all else in important attributes of a firm.
- Investors in China and India lean toward robo-adviser options, whereas investors in Canada, the United States, and the United Kingdom still value human interaction.
- Transparency and cyber security are key concerns among investors.
- A third of investors feel that another financial crisis is likely within the next three years, and about half of investors lack confidence in their firm's ability to manage through a crisis.

Gender Diversity in Investment Management: New Research for Practitioners on How to Close the Gender Gap (September 2016)

CFA Institute, along with many professional organizations, began to look more closely at the composition of its membership. We found a surprising number: Women represent less than one in five CFA charterholders. The most enduring principle of sound investment management is diversification, yet it is remarkably absent from team construction across all spectrums of the investment profession. The idea that gender-diverse teams have better outcomes in terms of corporate earnings and investment returns has been the subject of a growing number of industry papers. To uncover some of the underlying causes of the gender disparity in investment management, we developed a CFA Institute member survey in consultation with finance scholars Renée Adams, Brad Barber, and Terrance Odean. Adams, Barber, and Odean then analyzed the anonymized CFA Institute survey data and compared the survey results with several additional datasets to investigate the question of why women are underrepresented in this field. This paper highlights some of the key findings.

Named Endowments

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