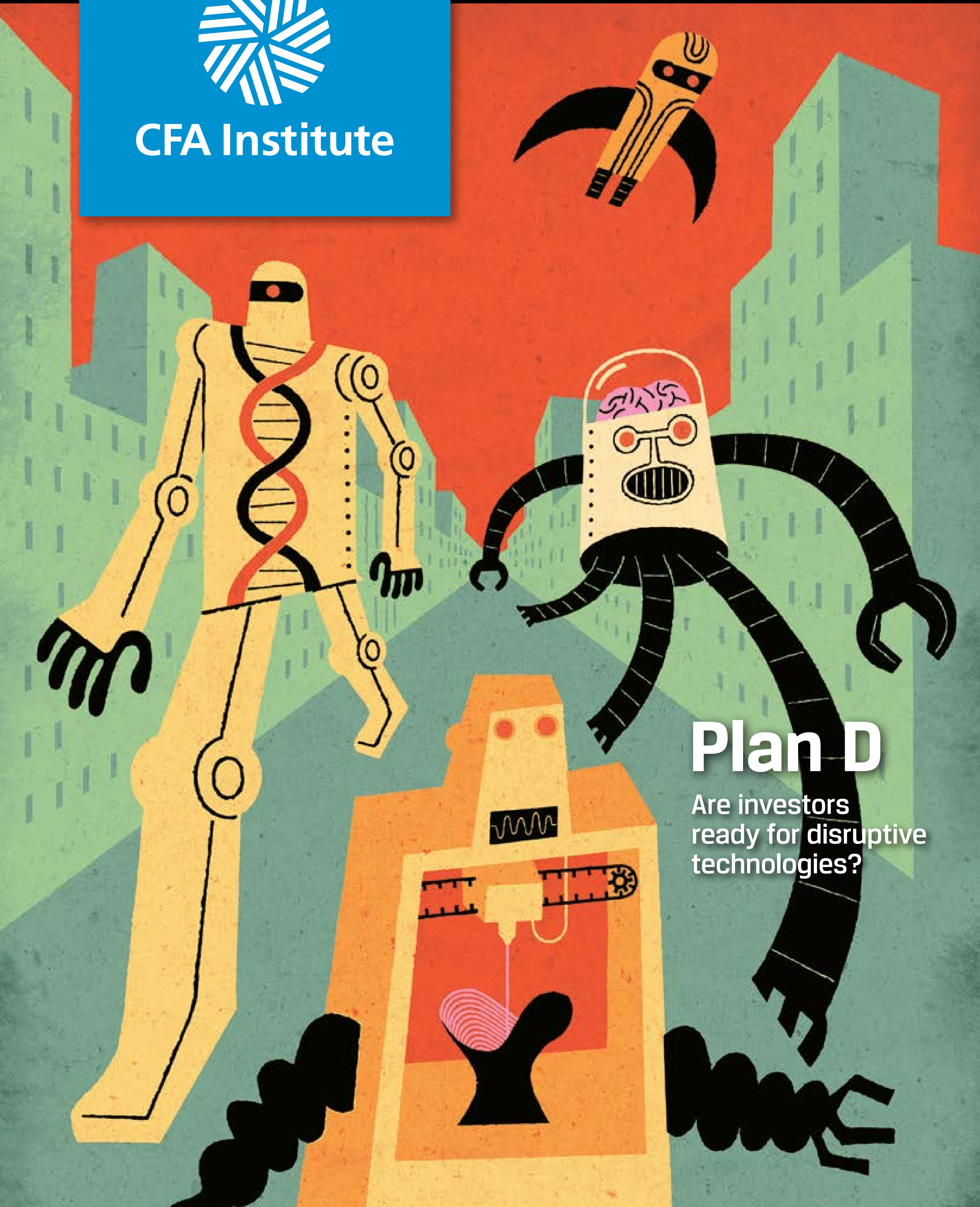
CFA Institute

March/April 2015

The Member Magazine for Investment Professionals



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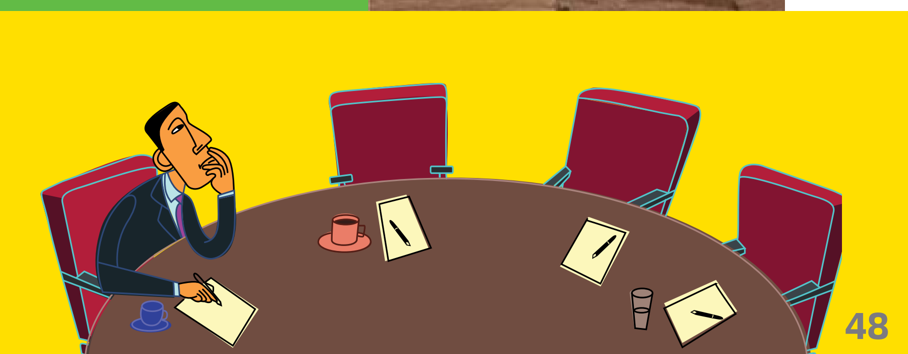

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The Organizing Principle of Unknown Explanations

"They want us to go on being confused instead of properly organized."—Madeline L'Engle, *A Wrinkle in Time*

There is an old saying, "Many who are first will be last, and many who are last will be first." In a superficial sense, it may mean a reversal of fortune. At a deeper level, it is about true value, a surprising kind of personal worth that cannot be measured statistically. The characters in Madeline L'Engle's classic story *A Wrinkle in Time* embody this paradoxical difference between appearance and substance. Meg Murry, age 12, and her 5-year-old brother Charles ought to rank among the "first." After all, their parents are famously brilliant scientists. But Meg is unattractive, antagonistic, and struggles academically. Charles is believed to be mute and "not all there" because he never talks. (In fact, he secretly talks to people he trusts and can read minds.) At school and around town, Meg and Charles are considered "subnormal." Meg herself laments that "We're morons." Worse, their family has been the subject of "smugly vicious rumors" since their physicist father mysteriously disappeared while working on a secret government project.

The reputations of Meg and Charles seem beyond help, much like the public image of sell-side research, which has been widely scorned in recent years. The kids could use a friend like Laurie Fitzjohn-Sykes, CFA, who sees the worth of sell-side research and even asks, "Does it need a fairy godmother to help fulfill its potential?" ("The Cinderella of Finance?" 13). Meg and Charles do find such a friend in a boy named Calvin, who is strong and popular, yet they are no closer to finding their father. A fairy godmother would come in handy. Then they meet Mrs. Whatsit, Mrs. Who, and Mrs. Which.

These three supernatural beings claim to know how to find Mr. Murry. Using their extraordinary powers, they transport Meg, Charles, and Calvin to the alien planet Uriel. This unique vantage point enables them to see the real state of the universe. A "black thing" or "dark shadow" stretches across the cosmos. Their father is being held captive on a "dark" planet, Camozotz, which is under the evil shadow's total control.

What the children experience is the effect of scaling on perception. As Jason Voss, CFA, explains, "Scaling is a powerful skill that changes how you see the entire information landscape" ("In Context and Up to Scale," 14). Scaling is also critical in the area of systemic risk, as regulators try to determine the point at which risks have systemic implications (EMEA Voice, 7). For Meg, Charles, and Calvin, the notion of "systemic risk" suddenly takes on a dramatically different meaning when their guides explain that they are part of a cosmic war between light and darkness. A shifting information landscape can disorient anyone, and investors are no exception, according to Melissa Cook, CFA. "If you're not paying attention to the new competitive paradigm," she says, "you are taking major unintended risks in your portfolio" ("African Horizons," 40).

The kids take a major *intended* risk: going to the dark planet Camozotz to rescue Mr. Murry. There they find a world where imperfections have been organized out of existence by "central intelligence." Efficiency and productivity are all. Could this be a vision of our own future? We are told that any process that can be automated will be. Professional knowledge is being converted into algorithmic devices, and wealth managers are already competing against artificial intelligence ("The Algorithm Who Advised Me," 37). So-called disruptive technologies resembling the stuff of science fiction are being developed and deployed, with the potential to transform whole industries ("The Disruptor Array," 33). A recent study concludes that relentless megatrends will reshape the investment industry by 2030 ("A View to the Future," 28). Moreover, the industry's reputation is already in bad shape. The latest Global Market Sentiment Survey cites "lack of trust in the industry as one of the biggest risks to markets overall" (Market Integrity, 45).

But all this uncertainty can have a positive aspect. For one thing, uncertainty is a precondition for freedom or at least for the action of free will. Dismissing "negative" thinking about such changes, one expert says, "We should really be looking at where these tools can help us work smarter and more effectively" ("The Future of Automated Advice," 39). In a market context, Ralph Wanger, CFA, writes that "unpredictability is not a defect; it is an advantage that will cause a positive bias. It is exciting!" ("Should Investing Be Fun?" 31). Also striking a tone of "positive bias" toward strategic opportunities, new CFA Institute President and CEO Paul Smith, CFA, writes, "we should be asking many questions, debating ideas, poking holes in conventional thinking, and anticipating the future of our profession" (In Focus, 6).

Before Meg journeys to Camozotz, Mrs. Whatsit bestows a gift, saying "I give you your faults." Rather than being a "moron," Meg is eccentrically talented. Her quirks, such as her antagonistic streak (which can be a kind of courage), protect her against the rigorous uniformity and predetermined outcomes of Camozotz. This secret weapon would come as no surprise to portfolio manager Julie Gorte, who seeks to invest in companies that avoid "group think" because she believes they will outperform ("Diversification of a Different Kind," 20). Meg's gift, although perilous, gives her the insight to discover the truth, which opens the way to rescue her father and brother (who is also captured). In the process, she learns the wisdom of something her mother once told her: "Just because we don't understand doesn't mean the explanation doesn't exist."

Roger Mitchell, Managing Editor (roger.mitchell@cfainstitute.org)

A Time to Listen and Learn

By Paul Smith, CFA

Since stepping into the role of CFA Institute president and CEO in January, I have taken it as my immediate task to listen to and learn from the views of members, staff, and industry stakeholders around the world to gain a broader perspective of our organization and our industry. I'm very grateful for these views, which I can assure you will help shape my approach to my new role.

I joined CFA Institute in 2012 to look after Asia Pacific and last year began to lead our institutional partnerships (I-Part) team. In these two roles, which I will retain for now, I have been lucky to be at the forefront of two key areas of our organization. In Asia Pacific, our fastest-growing region in terms of candidates, we have successfully expanded our presence in China and India. Our new offices are led by great teams, and over the next several months, we will focus on strengthening relationships with employers and governments and improving our services to members. The I-Part team works globally and collaboratively to broaden and deepen our engagement with institutions and employers to build brand value for members and to partner with employers in our mission to build the investment profession.

My two years here have taught me that two important pillars hold up our organization: our education programs and our members. We need to remain focused on these pillars and maintain the relevance of what we do as an organization in support of our profession.

Our education programs must remain rooted in rigorous and continuous industry practice analysis; our products and services must address our members' professional priorities and add value to their practices. Without relevance in these two areas, our organization will drift from the mission and values that we have held proudly for more than 50 years.

This year, the leadership team will embark on our next five-year strategic plan. For our strategy to succeed, we should be asking many questions, debating ideas, poking holes in conventional thinking, and anticipating the future of our profession.

Our profession has been tested over the past few years. Investors are voting with their feet as I have never seen before in my more than 30 years as an investment practitioner in Europe, the US, and Asia. The trend of commoditization and disintermediation in our industry points to a general lack of confidence in our ability to deliver value to investors. In my view, an equally important trend is their concern with the ethical underpinning of what we do. We need to ask ourselves why this ethical concern is happening and what it means for our future as investment professionals.

We have wonderful aspirations of being *the* professional body for the investment world, and we need to ask ourselves how we can actually achieve this goal. We are a long way from achieving it at present. We cannot answer these questions within the four walls of CFA Institute. We need your input as members—individually and through your societies. We need the participation of employers as well as other gatekeepers of our industry.

Thank you for your support and the warm welcome I've received. I'm mindful of our rich history and the high bar I have to clear as leader of this organization. I look forward to meeting as many of you as possible and partnering to achieve our common goals.

Paul Smith, CFA, is president and CEO of CFA Institute.

About Paul Smith, CFA

Paul Smith, CFA, has been president and CEO of CFA Institute since January 2015. He joined CFA Institute in 2012 as managing director for Asia Pacific and later assumed the leadership of its Institutional Partnerships division, which is responsible for engagement with key firms, groups, and associations in the global investment industry. He continues to lead these two key areas in the organization.

Smith has extensive leadership experience in the investment management industry, having held a variety of positions in major financial centers over 30 years. He started his career in asset management at Ermitage International, an alternative funds management company, progressively taking up roles of increasing responsibility across Europe (London, Paris, and Dublin) over 11 years—the last seven as the firm's CEO.

He moved to Asia in 1996 to join Bank of Bermuda in Hong Kong as Asia head of securities services. In 2001, he was promoted to global head of funds services. After HSBC's acquisition of the bank in 2004, he served as HSBC's global head of alternative funds administration.

Smith has also pursued entrepreneurial roles, most recently as founder and CEO of the Hong Kong-based hedge fund investment management firm Asia Alternative Asset Partners for six years prior to joining CFA Institute. *Asian Investor* magazine named him one of the 25 Most Influential People in Asian Hedge Funds.

In addition to being a CFA charterholder, he is also a fellow of the Institute of Chartered Accountants of England and Wales and worked as an auditor at Price Waterhouse (now PricewaterhouseCoopers) in London for four years early in his career.

Smith holds a master's degree in history from Oxford University.

Mitigating Systemic Risk in Europe

By Nitin Mehta, CFA

Promoting stability and mitigating systemic risk in the international financial system has long been a goal of policymakers and financial market regulators. About a decade before the most recent global financial crisis broke, Hans Tietmeyer, president of the German Bundesbank at that time, proposed a new institution to enhance cooperation among national and international supervisory bodies and financial institutions. The result was the formation of the Financial Stability Forum (FSF), first convened in Washington, DC, in April 1999, while its secretariat was hosted by the Bank for International Settlements (BIS) in Basel, Switzerland. Later, in response to the destructive impact of the global financial crisis, the FSF was reestablished in 2009 with a stronger charter as the Financial Stability Board (FSB), currently chaired by Mark Carney, governor of the Bank of England. Soon afterward, a similar body of regulatory agencies was established in the United States as the Financial Stability Oversight Council (FSOC) with a largely national (US centric) focus. Understandably, tackling systemic risk quickly rose to the top of the agenda for financial market regulators worldwide.

Concerned about the rate of progress made by the FSOC and FSB, CFA Institute, together with the Pew Charitable Trusts, supported the assembly of the independent Systemic Risk Council (SRC) in 2012. The mission of this new organisation is to monitor and encourage regulatory reform of capital markets with a focus on systemic risk. This objective also accorded with one of the six major themes under the Future of Finance initiative being led by CFA Institute; namely, safeguarding the system. More recently, in October 2014, the SRC welcomed five additional members from Europe, all experts in the field of financial regulation and reform:

- *Sharon Bowles*, former member of European Parliament and former chair of the Parliament's Economic and Monetary Affairs Committee.
- *Jan Pieter Krahnen*, chair of corporate finance at Goethe-Universität in Frankfurt and director of the Center for Financial Studies, a not-for-profit research institution in Frankfurt.
- *Lord John McFall*, former chair of the UK House of Commons Treasury Committee.
- *Lord Adair Turner*, former chair of the UK Financial Services Authority and former chair of the FSB's Standing Committee on Supervisory and Regulatory Cooperation.
- *Nout Wellink*, former president of the Netherlands Central Bank and former chair of the Basel Committee on Banking Supervision.

The newly fortified group convened in Brussels in November last year to discuss progress being made to strengthen the global financial regulatory system. They dwelled on several topical issues related to regulations under consideration globally, including reforms for money market mutual funds and the problem of "too big to fail" for clearinghouses. In addition, the FSB's proposal for Total Loss-Absorbing Capacity (TLAC) was considered, with a discussion about the appropriate size of the capital buffers, the eligibility of liabilities that can be relied on, and the distribution of such capital among material subsidiaries.

REMAINING VIGILANT ABOUT EMERGING SYSTEMIC RISKS IS ESSENTIAL FOR AVOIDING ANOTHER CRISIS.

After the meeting, a letter was sent by the SRC to commend the FSB for its new short stay protocol for derivatives counterparties to support an orderly unwinding of contracts following the failure of a large financial institution. The SRC had long campaigned regulators worldwide for cross-border recognition of resolution actions in order to stem systemic risk.

The meeting of the SRC in Brussels was followed by a popular event at the National Bank of Belgium, hosted by CFA Institute and CFA Society Belgium, featuring Sheila Bair, chair of the SRC, and Steven Maijoor, chairman of the European Securities and Markets Authority. Maijoor covered a broad range of topics under the title "Regulatory Measures to Prevent Another Crisis." Looking ahead, he pointed to the work still needed to better manage the concentration of risks among central counterparties, to understand the risks that the asset management industry poses to the broader financial system, and to create a capital markets union to diversify sources of financing and ultimately to stimulate economic growth in Europe.

Regulators have done much during these past years to attend to the many earlier flaws in the international financial system. But any reform invites new attempts at its arbitrage. Extra resilience can promote higher risk taking, and no framework can insure against all risks without also choking off growth. Financial crises, therefore, seem endemic to our market economy. As long as this is the case, remaining vigilant about emerging systemic risks is essential for avoiding another crisis. The SRC fulfils an important role with its independent voice.

Nitin Mehta, CFA, is managing director of EMEA for CFA Institute.

A Changing Picture in China

By Paul Smith, CFA

"Wild West" is a term that has been thrown around by outside observers describing China's capital market. The main idea is that it is a risky, lawless environment like the American frontier centuries ago. The term also implies that the market is run by "shadow bankers" and that it has weak regulations, poor investor protection, pervasive accounting fraud, and many other negative connotations. Along with recent reforms, a different picture is emerging from China. For example, the implementation of the Hong Kong–Shanghai Stock Connect in late 2014 revealed that there's much more to China now than many people think. [For more on Stock Connect, see the article in the November/December 2014 issue, which is available online at cfapubs.org.]

Consider the notion that China's equity market is opaque. Our conversations with regulators indicate that China has a higher level of transparency than many people assume. For example, regulators and exchanges know in real time (down to the individual investor account at broker/dealers) how many shares an investor owns and what the margin paid up is. This visibility makes it easier for authorities to regulate market activity and spot irregularities. It also reduces the likelihood of fraud on the part of broker/dealers. One could say that investors are well protected in this respect. In contrast, in the Western system, regulators and exchanges have little visibility into client accounts at broker/dealers. The investors carry the primary responsibility of looking out for their funds.

The Western hands-off model arguably offers incentive for market players to innovate. That said, excessive innovation can also muddle the market to the extent that regulators and exchanges lose sight of what's going on (case in point: the US credit market meltdown). On the other hand, the Chinese see-through system may stifle innovation. Perhaps this effect is why Chinese financial innovation is happening in the "shadows"—for instance, in the mobile and internet space, led by e-commerce companies, such as Alibaba and Tencent. [See the related article about internet finance in China on page 22 of this issue.]

Transparency is critical to the success of Stock Connect. Participating Shanghai brokers must be able to provide client trading information to Hong Kong authorities in a timely fashion and vice versa. Securities regulators and exchanges on both sides are now dependent on one another to ensure market integrity and enforcement. Thus, Stock Connect's most important achievement is not that trading volumes have increased or that foreign investors now have greater access to the domestic A-share market. Its critical achievement is that China has been drawn into the global regulatory system. Going forward, exchange of information (going both ways) on trading and identity will be the norm.

THESE BREAKTHROUGHS REQUIRE FINANCIAL TALENT AND PROFESSIONAL STANDARDS, AREAS WHERE CFA INSTITUTE IS BEST POSITIONED TO PLAY A MEANINGFUL ROLE.

Over time, China's integration into the global regulatory system will mean greater reciprocity with the rest of the world, and this link could have a positive impact on the resolution of outstanding issues, such as the audit paper dispute with the United States. It may also usher in an era of fresh thinking about the global financial system (witness the initiative to start the Asian "World Bank"). China's lack of heavy historical baggage in the finance industry allows it the opportunity of potentially creating world-leading financial infrastructure.

These breakthroughs require financial talent and professional standards, areas where CFA Institute is best positioned to play a meaningful role. Local governments are eager to attract top-notch financial professionals and raise the standards of knowledge and professionalism in the local finance industry. In recent months, we have participated in forums organized by local Chinese governments to exchange ideas and best practices and to raise awareness of our programs as well as our codes and standards. In addition, Taikang Life Insurance Company recently chose to become the first Chinese insurance company to voluntarily comply with the Global Investment Performance Standards (GIPS).

Our challenge, as always, is to keep up with the pace of change. We need more people on the ground to liaise more closely with local authorities, employers, and industry groups. Our members and candidates hunger for relevant content and continuing education programs accessible in their own language and for career development support. Our new office in Beijing will boost our capacity and resources to support China's capital market development. The same is true in India with our new office there.

Change in the Chinese capital market may be imperceptible from a distance. But it's not a mirage; it's for real. Right now, the word "wild" can only describe a China that has the audacity to move faster and farther than the world expected it to do.

Before being appointed in January 2015 as president and CEO of CFA Institute, Paul Smith, CFA, has been serving as managing director for Asia Pacific and global head of institutional partnerships for CFA Institute. He will retain both positions going forward.

2014 Annual Report Available

The CFA Institute Annual Report is now available online. In fiscal year 2014, the organization continued to grow in global relevance as a leading steward of the global financial markets. Going forward, CFA Institute seeks to maximize a "return on mission" for members and constituents while maintaining long-term financial viability. The focus on mission return guides organizational investment and activities across all areas of the organization. For more details about our initiatives and programs in FY2014, view the full report at http://annualreport.cfainstitute.org.

Recognizing New Charterholders

In November, CFA Institute launched a global advertising campaign to recognize and engage our newest CFA charterholders. The new charterholders landing page (www.cfainstitute.org/newclass) recognizes the 11,268 charterholders who earned their charter in 2014. The page includes a dynamic photo mosaic of many of the new charterholders and raises awareness of the value of the CFA charter as an asset for employers and their clients.

Visit the new charterholder landing page to:

- **EXTEND A PERSONAL WELCOME.** Use the search tool to find a new charterholder and extend a welcome.
- **SHARE THE VALUE.** Post a link to our new charterholder webpage and extend a congratulatory message via social media (using the #FutureFinance hashtag on Twitter).
- **TAKE ADVANTAGE OF YOUR MEMBER BENEFITS.** Access your career resources, networking opportunities, and professional and educational tools to help you stay timely, relevant, and competitive.

FAJ Marks 70th Anniversary with New Editor

The *Financial Analysts Journal* (*FAJ*) begins 2015, its 70th year, under new leadership. CFA Institute named Barbara Petitt, CFA, as editor of the periodical and head of journal publications.

Petitt joins the *FAJ* from her previous role as director of curriculum projects (EMEA) at CFA Institute, where she worked on curricula for the CFA Program, the CIPM Program, and the Claritas Investment Certificate. She is a key member of the Future of Finance team and helped to create the Statement of Investor Rights and *Essentials of a More Secure Retirement*.

"I look forward to extending the growing stature and influence that the *FAJ* enjoys in the industry globally and continuing to provide our members and colleagues in the profession with the expert thought leadership expected of CFA Institute," Petitt said.

"I LOOK FORWARD TO EXTENDING THE GROWING STATURE AND INFLUENCE THAT THE *FAJ* ENJOYS IN THE INDUSTRY GLOBALLY."

Cosgrove Ethics Contest

CFA Institute is supporting the Ethics in Finance Robin Cosgrove Prize, which is committed to implementing ideas on how to promote trust and ethical behavior in the finance sector. A prize of US$20,000 will be awarded to the best paper submitted focusing on the 2014–15 contest theme of "Innovative Ideas for Ethics in Finance." A regional prize of US$15,000 targeted to the Ibero-America region encourages global participation, and papers can be submitted in English, French, or Spanish.

Competitors must be under 35 years of age, and papers may not exceed 5,000 words. Final submissions are due by 15 April 2015.

Now in its fifth year, the prize aims to engage with young finance professionals and advanced students in all aspects of finance to increase their awareness of ethics in the sustainable future of banking, insurance, accountancy, and other financial sectors. Visit www.robincosgroveprize.org for details.

Annual Conference to Focus on Key Investment Themes

The CFA Institute Annual Conference returns to Europe on 26–29 April in Frankfurt. The conference theme is "Investing with Purpose," reflecting CFA Institute's emphasis on rigorous, analytical, and intentional approaches to investing, as well as the organizational core values of understanding client needs and putting client interests first.

The 68th Annual Conference will offer a comprehensive program for investment professionals. In addition to the views of Ian Bremmer of Eurasia Group and Philippa Malmgren on the current macro and geopolitical landscape, the program will cover a wide range of investment themes and feature perspectives from the following experts:

- Martin Wolf of the *Financial Times* on the financial stability of the eurozone and the potential economic, social, and systemic implications of the European public and private debt burden.
- James H. Freis, Jr., CFA, of the Deutsche Börse on the practical and ethical implications presented by financial innovation, digital technology, and evolving market structure.
- Keith Ambachtsheer of the International Centre for Pension Management, Leo de Bever of the Alberta Investment Management Corporation, and Roger Urwin of Towers Watson on the challenge of restoring a long-term orientation as the dominant investment paradigm.

The conference will address other timely topics that have particular significance for investment practitioners:

What does it mean to be a value investor in an era of soaring markets? Charles De Vaulx, portfolio manager at International Value Advisers, will explain how investors can use the advice of Graham and Dodd in markets that at times can seem disconnected from fundamentals. Other sessions will explore equity investing for absolute return and the equity markets of India.

How do behavioral finance and human emotions affect investment decision making, and are there ways to counteract our biases? Roland Ullrich, CFA, will provide an introduction to neuroeconomics, and John Coates, a former trader and current University of Cambridge research fellow in neuroscience and finance, will give a keynote address titled "The Biology of Risk Taking."

PROGRAM TOPICS INCLUDE CHALLENGES PRESENTED BY FINANCIAL INNOVATION, DIGITAL TECHNOLOGY, AND EVOLVING MARKET STRUCTURE.

How can wealth managers better understand and meet client objectives? Jean Brunel, CFA, will explain how a goals-based approach to wealth management might be the answer. In a more intensive discussion of best practices in client relationship management, Philip Marcovici will teach a class on global private wealth management, one of six master classes offered at the conference.

Is environmental, social, and governance (ESG) investing a way to align with client objectives and improve the world? A master class on the fundamentals and implementation of an ESG investment strategy, taught by Alex Money and Michael Viehs of the Smith School of Enterprise and the Environment at the University of Oxford, will discuss the latest thinking in this area. Christoph Klein, CFA, will cover integrating ESG investing into a fixed-income investment strategy.

What megatrends are affecting the investment industry and are they good for investors? Highlights will include sessions on culture in a global workplace and technology trends (from cryptocurrencies to the use of social media).

The conference will also provide ample networking opportunities. Visit www.annual.cfainstitute.org and make plans to join your colleagues in Frankfurt.

New Offices in China and India

With the opening of offices in China and India in January 2015, significant milestones have been reached for one of the key strategic projects of CFA Institute. Li Jun (LJ) Jia and Vidhu Shekhar, CFA, have been appointed country heads for China and India, respectively. Wendy Guo, CFA, who has been instrumental in leading the development of the China office, will continue to serve as China Plan general manager.

The new offices will enable CFA Institute to better serve members and candidates in these two key markets and will be responsible for executing the organizational strategy and implementing a multiyear business plan, including the development of governmental relationships and educational content as well as industry, advocacy, and regulatory outreach.

IN MEMORIAM

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Chadds Ford, Pennsylvania

The Cinderella of Finance?

ACKNOWLEDGING THE BENEFITS OF SELL-SIDE RESEARCH MIGHT IMPROVE REGULATION

By Laurie Fitzjohn-Sykes, CFA

Sell-side research has been beset with recurring scandals and conflicts of interest. As a result, many view its existence as an unfortunate historical quirk, one which should be allowed to decline. The UK government Kay Review in 2012 even stated, "Looking forward, we see the sell-side analyst as a dispensable link in the chain of intermediation. … Most asset management firms now undertake their own analysis and employ their own analysts."

Is this view fair? Or is sell-side research the Cinderella of finance, carrying out all the painstaking and grubby tasks at home while everyone else heads off to the party? Think of all the chores no one else will do—building models, contributing to consensus, reading annual reports, and a long list of other tasks. Should we allow sell-side research to carry on its decline as current regulation is encouraging? Or does it need a fairy godmother to help fulfil its potential?

Sell-side research provides four key benefits to equities investing and the underlying savers the industry serves. (By the way, it's worth noting that to savers in aggregate, it does not matter whether one fund outperforms another; what matters is whether, through the process of funds competing with each other, management decisions are improved and the value of companies is increased.)

The first benefit of sell-side research is that it creates a public debate around companies, sharing analysis that can then be built upon by others. In contrast, research carried out by the buy side is not shared and therefore does not contribute as much towards increased understanding across financial markets.

Second, sell-side research holds management to account in a public forum, not in private conversations with large investors.

Third, sell-side research creates a level playing field between investment funds, increasing competition and hence putting downwards pressure on management fees. Small investment funds cannot afford large teams of in-house research analysts and therefore rely more heavily on sell-side research. Without sell-side research, small funds could not compete effectively against large funds. This point is especially important given the high cost that management fees place on savers. (A 1% annual fee may not sound like much, but on average, it amounts to 15% of the underlying company's profit or 25% of dividends paid.)

Finally, the fourth benefit is that sell-side research has greater scale per analyst team. Even the largest buy-side funds cannot justify having more than a few analysts looking at each sector. This scale allows the sell side to carry out painstaking primary research. It also allows analysts to pursue a specialist career path and follow companies through multiple management changes. Essentially, there is a natural division of labour in research between the buy side and sell side.

These observations lead to a question: Are savers better served by research conducted inside funds or conducted outside and made public? The potential value of sell-side research is high; the problem is that the current model has many flaws. Despite regulations, conflicts of interest and biases still exist within investment banks. There remains pressure not to jeopardise potential investment banking business, and payment for research via trading creates an incentive for short-term-focused investment calls.

In addition to these biases, sell-side research is also too fragmented. There are too many teams, with too few analysts on each one. Buy-side analysts frequently complain that they receive 30 versions of the same low-quality report. We need fewer but higher-quality reports. Greater scale per team would also enable a greater variety of backgrounds, rather than the current preponderance of ex-accountants.

All of these points suggest a different approach to dealing with sell-side research. Regulations should not simply seek to mitigate the conflicts of interest in current sell-side research, as if the business were in some sort of managed decline. Instead, the goal should be to help build strong, consolidated and independent research providers. Rather than being dispensable, it provides a valuable service to savers and market participants because of the benefits I have outlined. Thus, instead of trying to manage its decline, we should acknowledge the important role that sell-side research plays in the equities investment chain.

Sell-side research *is* the Cinderella of finance. We need to take Cinderella out of the kitchen and give her a bright new ball gown.

Formerly employed as a sell-side researcher and in venture capital, Laurie Fitzjohn-Sykes, CFA, is an author in London and a member of CFA Society of the UK.

Illustration by Alex Nabaum

In Context and Up to Scale

OVERLOOKED SKILLS CAN HELP AN INVESTMENT MANAGER STAND OUT FROM THE CROWD

By Jason Voss, CFA

Some of the skills most investment managers look for are obvious. You probably recognize these skills as necessary because they permeate the mythology of the investment business. Yet many of the critical skills needed for a successful investment management career are not taught in business schools, discussed in the business press, or understood by most firms doing the hiring.

Having hired research analyst interns, research analysts, a portfolio manager, and even my own successor when I retired from investment management in 2005, I have gained a fair amount of knowledge about which skills separate you as an investment manager. Distinctive skills include such attributes as creativity and intuition. If you would like to separate yourself from the crowd of highly motivated and highly intelligent candidates, try adding these to your arsenal of skills. In the final part of this series,[1] I will focus on three additional overlooked skills: discernment, scaling, and context creation.

DISCERNMENT

Many investment managers and research analysts think that one of their responsibilities is to discover the best mental model for their work. For instance, much academic research is focused on identifying which valuation model is the best predictor of future performance. But I say the best tool for the job is a better philosophy. Skilled investment managers not only know about and understand many different mental models but they also know when to deploy them—this is discernment. Discernment is the combination of knowledge, memory, creativity, intuition, non-attachment, and awareness.

Because there is so much research focused on the use of valuation models, let me instead share with you several mental models that analysts and portfolio managers deploy unconsciously and that subsequently interfere with discernment. (For a fuller discussion of these mental models, see my complete *Enterprising Investor* blog post on discernment at blogs.cfainstitute.org/investor.)

MECHANICAL MODELS. Mechanical models are those structured as long chains of logical effects flowing from causes. Typical of this kind of model is the discounted cash-flow valuation model that projects a flat revenue growth rate each year for some time horizon. These models can also be qualitative (for example, "too much money supply equals inflation").

Mental models of this kind are the natural outgrowth of a scientific philosophy—rational determinism—that dominated the more physical sciences, such as physics, chemistry, and biology, for centuries. If you learned mathematics or science in secondary school, this is most likely the way you were taught to view the world. Unfortunately, investing is a complex merging of soft—not hard—sciences with probability theory, mathematics, economics, philosophy, intuition, and personal choice.

These mechanical models are fine and have their place, but they have a fatal flaw: They are mechanistic. This is a flaw because machines are closed-state phenomena. Despite the fact that mechanical models miss almost every state change, mechanical thinking predominates the thinking of most investment managers. Mechanical models may be correct at times, but life is rarely so neat and prescriptive.

So, when is the best time to deploy mechanical models? When a system has few outside influences, the outcome of interactions between different parts of the system is highly predictable and requires few state changes. In other words, these models are excellent for analyzing facts. This point may seem odd given the preceding explanation, but facts are closed state. Put another way, facts (by definition) are things that occurred in the past. There is no such thing as a future fact. Thus, we can correctly use financial ratios, which are mechanical models, to analyze past business performance.

EVOLUTIONARY MODELS. Evolutionary models recognize that the state of a system is ever changing toward a singular point in the future. The singular point of evolutionary models is victory at the end of the time horizon under consideration.

In investing, many look for businesses that smite the competition by constantly evolving. With evolutionary models, it is always up, up, and away. There may be some fluctuation in the growth rate, but evolution marches on.

Evolutionary models miss the mark because they overwhelmingly assume that the present state is better than the past state. That is, they always assume the present state is the result of an evolution from a previous, not-as-evolved state. Evolutionary models are effective at describing new systems that are in flux: where there is struggle and a desire to end or limit struggle. In finance, evolution serves as a legitimate model for valuing a business, so long as it is tempered with the understanding that devolution is also possible. In other words, that dominant company will eventually miss an earnings estimate.

ADAPTIVE MODELS. Complementing evolutionary models—and in stark contrast to mechanical models—are

1 This article is adapted from a series of posts being published on the *Enterprising Investor* blog. To date, installments in the "Skills That Separate You as an Investment Manager" series have addressed the topics of introspection (April), creativity (May), intuition (June), decisiveness (July), absolute versus relative decision making (August), forthrightness (September), discernment (October), scaling (November), and context creation (January). All posts in the series are available at blogs.cfainstitute.org/investor.

adaptive models. Here, investment managers recognize that initial causes do not usually lead inexorably to certain effects as predicted by mechanical thought or even to improvements. Instead, adaptive models predict response to initial stimuli. Further, these models accept that adaptive responses frequently dampen the expected effects of initial causes. So, yes, quantitative easing puts more money in the global economy, but it does not necessarily have to lead to inflation because participants in the system may adapt to the new reality.

When adaptive models are combined with either evolutionary or mechanical models, more realistic predictions are frequently made. However, these models can make errant predictions because anticipating the actual nature of adaptive responses adds layers of complexity to modeling.

ECOSYSTEM MODELS. Ecosystem models describe the complex inner workings of large systems by combining mechanical, evolutionary, and adaptive models into a whole. GDP models are an example of ecosystem models.

Ecosystem models are not sensitive to the errors of mechanical models (in which getting the initial assumption incorrect means that your entire model is wrong). Ecosystem models are robust enough to blur away the damage from such an error. These models also do not have the same problem that evolutionary models do in not accounting for the destruction of players in the system.

Unfortunately, ecosystem models often lack specificity (the hallmark of mechanical models) because they are too complex to lead to understanding. Also, if the interrelationships are not well understood, they lead to runaway outcomes, whether too much success or too much destruction.

HOW TO BE MORE DISCERNING. Spend some time in quiet introspection to begin to log how you think. All of us have preferred time- and battle-tested mental models. Begin to notice which models are your defaults. I am guessing that one of the models I have described is a part of your early-firing mental apparatus. Before using these models blindly, ask yourself, "Is this an appropriate use of my model?" Asking this question is discernment.

SCALING

Scaling is a powerful skill that changes how you see the entire information landscape. The use of proper scale is a tremendously overlooked secret to investing success. Let me illustrate the importance of scale with a thought exercise: What is the proper scale for watching a football match? If your eyeballs are right on top of the ball itself, you will miss most of the action, despite being at the absolute heart of the game. Clearly, you are too close for anything to be meaningful. Say instead that you are seated in outer space hovering around the Earth. You are way too far up from the action for anything on the pitch to be meaningful to you.

So, what's the ideal scale to see a potential investment? Your preference for scale should be the scale, or scales, that provide you with unique and actionable investment information. A natural starting point for examining scale is to ask, What is the fundamental value driver of a business? It might be the amount of research and development dollars spent, revenue per (railroad) track mile, number of website page views, quality of service, quality of products, or the customer experience.

In the world of investing, common-size statements are an example of changing scales to reveal new information. Two primary forms predominate: common size over revenues and over total assets. Why can't you do common-size statements over headcount, total operating cash flow, barrels of oil, square footage of property owned, or research and development dollars spent? Another example from investing is that many financial ratios, such as the cash conversion cycle and the DuPont equation, change how businesses are viewed.

One of my investment secrets is that I identify the fundamental operating units of a business beyond dollars and then rescale information for greater clarity. There are numerous examples of industries that think in terms of units other than dollars, such as in the oil business, in which barrels of oil are the fundamental unit. So, if you know an oil company produces $100 million in profit in a quarter and you know that they also produce 5 million barrels of oil, it's useful to calculate the profit per barrel of oil (the scale). You can then compare that figure with the company's competitors. This is a change of the scale from dollars to barrels of oil.

The airline industry quotes a number called "revenue per passenger mile," in which miles are the fundamental unit. In the hotel business, the "occupancy rate" is quoted, in which how many hotel rooms are filled each night is the fundamental unit. In a business that is people driven—consulting, for example—numerical data scaled to employee headcount are often revealing, such as sales per employee. These are all examples of changing the scale, and they are designed to illuminate the fundamental qualities of a business.

Unfortunately, most analysts have an unstated scale prejudice and hence a blind filter—"my investment time horizon is five years," or "I prefer companies whose earnings growth is accelerating"—that obscures as much as it reveals. This happens because many investors have lost sight of the fact that the job of an analyst is simply to see and to accept the world for what it is, not for what we prefer it to be.

Can you see how adjusting the scale changes your perception and, therefore, your understanding of things? This is a critical skill to add to your repertoire. Anything that can be measured can have its scale changed to help illuminate valuable information. Finding the proper scale helps to turn data into information. Importantly, scale changing is also a creative, right brain–oriented endeavor limited only by your imagination.

Arguably, the scale most overlooked is time. Changing the time scale drastically alters understanding. In fact, it is my belief that most disagreements about investing are the result of unstated time preferences. Getting the time scale right when you analyze a business is critically important. Do you evaluate future prospects over 10 seconds, 10 minutes, 10 hours, 10 days, 10 months, or 10 years? It does change the answer of whether to buy or not buy.

For example, a primary difference between so-called value investors and so-called growth investors is a differing appreciation for time. Growth investors typically have a shorter time horizon (i.e., scale) than value investors. After all, growth investors are looking for companies' earnings to increase 100% year over year, not over the course of 60 years.

Alter your scales many times to maximize your insight when evaluating investments. Very frequently, new information is revealed by changing the scale. Think of this process as learning to know when to utilize only your eyes, a microscope, a pair of binoculars, or a telescope when looking at information. Sometimes you want a scanning electron microscope when examining an investment issue—such as understanding the full legal consequences of a regulator's enforcement action—and at other times, you want to use one of the huge mirrored telescopes of an astronomical observatory when trying to understand something, such as the effect of changes in global demography on global GDP.

CONTEXT CREATION

Context creation takes advantage of intuition, creativity, and a person's knowledge. Context is defined roughly as the circumstance in which an event occurs: a setting. Let's break this down, starting with the word circumstance. *Circum* comes from the Latin word for circle, and it suggests encircling, surrounding, and demarcating—in other words, to separate something from a larger whole.

"Stance," meanwhile, refers to the location of a thing, a person, an idea, an opinion, and so forth. Investing examples include nations, economic output, industries, businesses, products, competition, business executives, business models, strategies, and many others.

Last in the definition of context is "setting," meaning the environment or arena in which something takes place. Again, settings may include the economy, the financial markets, economic policies, a nation's legislature, etc.

Taken together, all of these micro-definitions mean that context is about identifying the important investable information (signal) and distinguishing it from all other information (noise). Proper context is entirely up to the investor to establish for herself and is a critical choice when it comes to investing. Ideally, analysts and portfolio managers should continually change and scale their contexts until they understand the information.

Choosing context immediately places investors into an intimate relationship with the information under consideration because it relates one's mind and one's choices with the real world. If you do this wrong, then you have a distorted view of reality. But if you choose wisely, clarity ensues.

ASKING THE RIGHT QUESTIONS. A further refinement of context choosing is context creation. It is easy for investors to let convention determine contexts when seeking understanding. For example, it may be convention in an industry to look at specific factors, such as same-store sales per square foot in retail, revenue per passenger mile in the airline industry, or net income per barrel of oil equivalent in the oil industry. How you project financial statements into the future is a preselected context for trying to understand businesses, as are financial statement analysis and financial ratio calculation.

Yet, truly skilled investors create their own contexts to try to understand the world around them. Creation of your own context leads to an entirely different set of questions and therefore an entirely different way of understanding those fast-evolving, hard-to-discount problems.

GIVING FACTS MEANING. Context is always important because facts alone have no meaning. Facts, in and of themselves, exist without context, yet it is context that gives them meaning and turns them into actual, actionable information. Facts without context lie undifferentiated on the investment landscape.

For example, consider the following statistic: Real GDP increased 4.9%. What does this fact mean? You may think you know, but many assumptions must be made to believe this fact has relevance. Maybe the assumption is that the statistic pertains to your home country. But without identifying the country, there is no context, no understanding, and no real information conveyed.

How does the analysis shift if, in fact, the country in question is Mozambique? Next, what time frame is being considered? Knowing that it is Q3 2007 for the United States provides more context but not much.

Even with this information, the context of a *question*—itself the result of creativity and intuition—is needed to understand the statistic's importance. What if the question is, "How did Q3 2007 US GDP compare with the same quarter in 2006?" (By the way, I would characterize this question as having conventional context that likely leads to conventional understanding and hence conventional results.)

But what if the question is, "What gives you confidence that US consumers felt good about the economy in Q3 2007?" Here the question (i.e., the context created) changes the understanding and relevance of the facts at hand.

Many investors treat facts as answers to questions, yet they never consider what question the facts are supposedly answering. They also rarely check to see if there is congruency between the answer and the question.

Answers can exist by themselves, but it is the question that gives them meaning. The opposite is also true: Questions only have meaning depending on the answer.

When an analyst is diligent about creating context, it is more likely that questions and answers are in accord with one another. And when this is true, confusion is minimized and it is much more likely that an investment manager has a true understanding of the world.

Jason Voss, CFA, a former mutual fund manager, is a content director at CFA Institute.

Moving from Models to Computational Methods

By Ed McCarthy

Practitioners with knowledge of advanced financial models often face a challenge in trying to apply that knowledge to computation. In my own experience (going back to the 1980s), Lotus 1-2-3 had been on the market for a few years when I decided to build spreadsheets that included Monte Carlo simulations, Black–Scholes option pricing, and mean–variance optimization. No third-party add-in software was available for these tasks, and I was unable to get any help from forums on the pre-web CompuServe network, so I just plugged away until the calculations worked. The process was like trying to cook without a recipe: time consuming and aggravating.

Investment practitioners today have significantly greater analytic resources available to them, but the challenge of moving from financial models to computed results remains. A couple of books published within recent years were intended to help bridge the gap: *Financial Modelling: Theory, Implementation and Practice (with MATLAB source)* by Jörg Kienitz and Daniel Wetterau (Wiley) and *Numerical Methods and Optimization in Finance* by Manfred Gilli, Dietmar Maringer, and Enrico Schumann (Academic Press). As the authors of *Financial Modelling (FM)* point out, "Many books and research articles in the field are incomplete—a new model is introduced, an existing model is extended or a certain model topic is analysed but there is not a hint on implementation or the practical application of the model."

Lately, I've been working through these two books. Although they both cover computational finance with some high-level overlap in their material, they emphasize different aspects of the topic (as the titles imply). *FM* focuses more on the mathematics and extensions of pricing models; at times, it's almost encyclopedic. For instance, the chapters on diffusion models and models with jumps consist of a combined 100 detailed pages and discussions of almost 20 models. The book reviews financial markets, popular pricing models, and numerical methods, including transform techniques, simulation, calibration, and optimization. *FM* also includes an extensive section on implementation, software design, and mathematics. This part provides useful background on MATLAB® basics, object-oriented design, and a review of the math used in the book.

INVESTMENT PRACTITIONERS TODAY HAVE SIGNIFICANTLY GREATER ANALYTIC RESOURCES AVAILABLE TO THEM, BUT THE CHALLENGE OF MOVING FROM FINANCIAL MODELS TO COMPUTED RESULTS REMAINS.

Numerical Methods and Optimization in Finance (*NMOF*) provides less, although adequate, mathematical detail and more discussion of numerical analytic methods' foundations. The book's major themes are numerical methods, including least squares, finite differences, binomial trees, simulation, and optimization. The authors recognize and stress the methods' limitations. For example, they write, "So as a general rule: do not despair when it comes to numerical issues, but compare them with the accuracy of the actual model. If the model's quality is already limited, then do not waste your time thinking about fourth decimals. Think of quantitative finance as gardening; we need sturdy tools for it, but no surgical instruments."

MODEL TO CODE

Both books present their material clearly, but I believe the inclusion of MATLAB source code within the texts is their most valuable feature for finance practitioners. (*NMOF* also includes code samples in the R language.) They directly address the steps needed to move from model to numerical analysis to code and implementation. Including code in this fashion benefits readers in several ways. It's certainly a time saver. Instead of developing algorithms from scratch, readers can identify the already tested code they want and copy and paste it into MATLAB. Even if the code needs modification for a specific purpose, copy and paste will be much faster than planning and coding the algorithm manually.

Code-inclusion is also a learning tool for improving numerical analysis, algorithm development, and programming skills. Many of the books' algorithms build on their predecessors' code as the models increase in complexity, a technique that illustrates how foundational code can be extended for model variations. Also, both books clarify numerous code sections by including plain-English, pseudo-code versions of the algorithms. The code sections are well documented with comments, but pseudo-code clarifies an algorithm's logic and flow and makes the code easier to understand.

The authors have made the code files for both books available online. The *NMOF* algorithms download in a single compressed file, whereas the *FM* material is available from a MATLAB site.

BACKGROUND REQUIREMENTS

These are not entry-level books; the material assumes a solid background in probability, math (through stochastic differential equations), and programming. *FM*'s authors state that they "have written the book for those finance professionals who design, develop and apply advanced financial models." Those professionals could include "financial engineers, quantitative researchers, traders, risk managers, risk controllers" in addition to academics and students. Similarly, *NMOF*'s authors write that their "ideal" reader "does not work only on theory, but his job requires a close interaction between theoretical ideas and computation with data."

Readers with financial analysis backgrounds likely will be more comfortable with the pricing models than with MATLAB and numerical analytic methods. *FM*'s MATLAB-introduction sections are a good starting point with the software, but for me at least, they would not have been sufficient to readily understand the books' code sections. For readers who want a more extensive MATLAB introduction, I recommend *MATLAB: A Practical Introduction to Programming and Problem Solving, Third Edition by* Stormy Attaway (Butterworth-Heinemann 2013). Combining Attaway's book with MATLAB's Financial Toolbox documentation is a good foundation for working with the program and the books.

All of that leaves the question of which approach is right for a particular user. Given how the books complement each other, there is a case for buying both. If you're looking for a broader perspective on numerical analysis in finance, I recommend *NMOF*. Readers who wish to drill down into multiple variations of pricing models are likely to prefer *FM*.

On a final note, if you lack access to MATLAB and are leery about acquiring a full commercial license before committing to the platform, an alternative would be to buy the Home Edition for $149. Additional toolboxes, such as the Datafeed Toolbox and the Financial Toolbox, extend the core program's finance functionality and are available for $45 each, which would help keep the initial investment to a more modest level.

Ed McCarthy is a freelance financial writer in Pascoag, Rhode Island, who writes regularly for *CFA Institute Magazine*.

LETTER

THE PROPER APPROACH

Reading the November/December issue of *CFA Institute Magazine*, I was disturbed by the inclusion of the article "Skill or Be Skilled" by Michael Ervolini in the Viewpoint section. To my eyes, it is indistinguishable from an advertisement for the services of the author's company. It does your publication a disservice to allow such articles to be written as if they are by unbiased authors. A proper review of the service offered, tested by a disinterested party, would be the proper approach.

Andrew Koch, CFA, ASIP
London

Diversification of a Different Kind

GENDER-LENS PORTFOLIOS AIM TO ALIGN INVESTMENT STRATEGIES WITH VALUES

By Sherree DeCovny

Several studies show a positive correlation between diversity and better decision making in companies as well as between women's empowerment and financial performance. They have also linked women CFOs with more conservative reporting. These findings have led to the creation of gender-lens indices, funds, and exchange-traded notes (ETNs), enabling institutions and individuals to align their investment strategy with their values.

KEY POINTS

Some studies show a positive correlation between women's empowerment and financial performance.

Such findings have contributed to the development of gender-lens indices, funds, and ETNs.

The same type of philosophy, strategy, and methodology can be extended to other groups within the diversity spectrum if relevant data are available.

Certain sectors typically have more women in management. On average, the companies in the MSCI World Index have 12% women in management and on their boards. Consumer discretionary has 13%, and both health care and utilities have 14%. But only 10% of the managers in the MSCI World IT companies are women, and the materials and industrials sectors are also relatively weak in the area of women's leadership.

The managers of the PAX Ellevate Global Women's Index Fund used the constituents of the MSCI World Index as the starting point to create a gender-lens portfolio. They developed a process to select about 400 companies with the top gender scores in that universe, although the actual number of companies in the portfolio fluctuates throughout the year because of corporate actions.

The constituent companies are selected based on the percentage of women on the board and in executive management positions. The portfolio managers consider whether the company has endorsed the Women's Empowerment Principles (a joint initiative of the UN Global Compact and UN Women). Finally, they screen companies based on the treatment of women throughout the organization.

With nearly $70 million in assets under management, the fund is benchmarked against the PAX Ellevate Global Women's Leadership Index. The index is weighted based on the market capitalization of the components. The fund replicates the index, but more weight is placed on the gender alpha score. For example, companies get extra credit for having three women board members.

"From March through the end of November 2014, our index outperformed the MSCI World Index by 110 basis points or 1.1%," says Julie Gorte, senior vice president of sustainable investing and portfolio manager at PAX Ellevate Global Women's Index Fund. "You need to take that with the appropriate caution because anything can outperform for eight months, but it's encouraging."

Also noteworthy is that the index was not constructed to have a specific risk profile. But selecting the top 400 companies in terms of their gender score formed an index with superior risk performance. Compared with the MSCI World Index, it has a lower beta and a higher dividend payout ratio.

The Matterhorn Group at Morgan Stanley was approached by clients who wanted to invest in accordance with their values. Among the market research, a study by workplace research firm Catalyst stood out. It found that companies with three or more women on their boards had a 46% better return on equity, a 60% better return on invested capital, and an 84% better return on sales.

> "INVESTORS ARE ALWAYS LOOKING FOR SUPERIOR MANAGEMENT. IT'S LOGICAL THAT WHEN COMPANIES AVOID GROUPTHINK, PUT MORE OPTIONS ON THE TABLE, AND LOOK AT THEM MORE CAREFULLY, THEY DO A BETTER JOB OVER THE LONG TERM."

"We know it's not a causal relationship," says Eve Ellis, a portfolio manager at the Parity Portfolio Strategy. "However, neither are any of the financial metrics like consistent profitability or earnings per share."

Matterhorn Group leveraged this information to create the Parity Portfolio Strategy, which is designed to make money for investors while having a social impact. The fund first screens for US-headquartered companies in the Russell 3000 that have at least three women on their boards. Next, the portfolio managers do a fundamental analysis on the investible universe, which has grown in the past two years from about 250 companies to about 280 companies.

"We're bottom-up focused although top-down aware," says Ellis. "In our quantitative analysis, we look at whether a company has free cash flow, how much it has, and what it is doing with it. We also look at profitability and valuation."

Then, the portfolio managers do a qualitative analysis focusing on the business model, adaptability, management strength, and capacity for innovation or leadership. Finally, they use a risk-focused approach to construct the portfolio and allocate assets.

The portfolio managers look for value, and they have a buy-and-hold mentality. The portfolio is concentrated. At any given time, it has 20 to 30 names in it, and there is little turnover. It is also well diversified, although it currently has no energy companies. It has almost 15% in consumer discretionary and nearly 6% in consumer staples. More than 25% of the assets are allocated in financials, including a large bank, a small community bank, and two REITs.

The strategy is defensive, and the objective is to outperform in bear markets. Ellis notes that there has not been a bear market since the portfolio's inception, but on down days, it has done particularly well. It is built to have a beta of between 0.8 and 0.9, and the beta has been at 0.85. It was also designed to have less exposure to risk, so the standard deviation is lower than the standard deviation of the market.

"We don't discuss AUM or specific performance, but I can say we're pleased with our results," she says. "We're doing what we set out to do. Now that we have a two-year track record, we can start talking to larger institutional investors because they care about this issue too."

Barclays Women in Leadership Total Return USD Index and ETN look at the universe of US-headquartered NASDAQ and NYSE listed companies. First, there is a low-level hurdle for liquidity and market capitalization: micro-cap companies are excluded. Next, the companies are screened and ranked according to certain gender criteria. Companies that have women CEOs rank above those that do not. The companies are ranked by the highest to lowest percentage of women on boards, with a floor at 25%. A company with a woman CEO and 30% women on its board ranks above a company with a woman CEO and 10% women on its board. They both rank above a company with a male CEO and 30% women on the board, and a company with a male CEO with 10% women on the board is not eligible. After ranking all the companies, Barclays picks the top 10 ranked companies in each of the 10 stock market sectors for inclusion in the index.

"In theory, we would have 100 companies in the index," says Sue Meirs, a director in Structured Products at Barclays. "In reality, we have 83 companies in the index because several of the sectors don't have 10 companies that meet the criteria of having a female CEO or at least 25% women on their board."

The index is rebalanced quarterly and market capitalization weighted once the companies are selected. Moreover, the exposure to any one company is limited to 5%.

Typically, the index contains 10 companies from the consumer discretionary sector. The index may have two or three companies from the energy and telecom sectors, depending on the quarter. Currently, six companies are in the materials sector.

Pushing the Envelope

Most college degrees in the US are earned by women, yet women account for only about 17% of Fortune 500 companies' boards. That disconnect was the driver behind the formation of the Thirty Percent Coalition in November 2011. Its initial group of 27 members included board members, CEOs, search firms, and high-profile institutional investors, such as PAX World, CalSTRS, and Walden Asset Management. Over the past three years, the organization has more than doubled its membership, reaching more than 70 members at the end of 2014.

The Thirty Percent Coalition works through its institutional investor committee, corporate leaders committee, and public sector initiatives committee to influence corporations to increase the number of women on their board. The organization has conducted three letter-writing campaigns to the S&P 500/Russell 1000 companies that had no women on their boards. As a result, nearly 20 women were appointed to boards. Moreover, the organization attracted support from institutional investors with $1.3 trillion in assets under management.

Executive director Charlotte Laurent-Ottomane believes a fundamental shift could occur if gender diversity targets had to be disclosed as part of the stock market listing requirements. In Australia, this requirement resulted in a significant increase in women being appointed to corporate boards. The SEC has a disclosure requirement for corporate diversity policies, which she says could be strengthened. She also suggests establishing term limits for board members.

The Thirty Percent Coalition asks companies to include the importance of gender diversity in their charter and include women in their candidate pool when seats become available, and it suggests that companies can start by examining the board's competencies and being more open to non-traditional candidates.

Meirs points out that the same type of philosophy, strategy, and methodology can be extended to other groups within the diversity spectrum as long as it is possible to collect the data. In September 2014, Barclays launched the Return on Disability Index and ETN based on the premise that companies that employ and serve people with disabilities will be more profitable.

"Investors are always looking for superior management," adds Gorte. "It's logical that when companies avoid groupthink, put more options on the table, and look at them more carefully, they do a better job over the long term. What struck me is how quickly that thesis proved out in investment."

Sherree DeCovny is a freelance journalist specializing in finance and technology.

KEEP GOING

"Hurdle Rate: Do women have to overcome more obstacles in their career paths? 10 accomplished investment professionals share their experiences," ***CFA Institute Magazine*** **(July/August 2014) [www.cfapubs.org]**

"Women Rising: The Unseen Barriers," summarized in ***CFA Digest*** **(December 2013) [www.cfapubs.org]**

"Untapped Potential: Women in Finance," ***CFA Institute Magazine*** **(November/December 2013) [www.cfapubs.org]**

Internet Finance and China

WILL BANKING INNOVATION PROMOTE GROWTH AND REFORM?

By Leonora Walet

After blazing a trail in e-commerce, Alibaba Group Holding Limited and Tencent Holdings are breaking new ground in banking by parlaying their successful businesses into a launch of what could become formidable competitors to China's state-owned financial firms.

The staid world of banking may seem an unlikely expansion target for these two technology firms, but their scrappy start-up spirit may be just the thing for competition. Already, the companies are winning deposits away from state banks with money market–like funds that pay higher rates on renminbi deposits than are available in traditional accounts. Alibaba's popular Chinese money market fund Yu 'e bao—Chinese for leftover treasure—attracted ¥574 billion ($94 billion) within a year after its launch in June 2013.

KEY POINTS

- E-commerce firms with large customer bases are being allowed to compete in China's banking sector.
- Experts disagree about the potential of internet finance to disrupt traditional banking and financial services.

The technology titans are also branching into offering online transfers, making loans to small businesses, and developing new investment products. In addition, they obtained licenses in 2014 to open China's first private banks.

"The surge in online and mobile payments in China gives tech companies the customer base that should allow them to compete in the banking sector, especially with the popularity of their internet-based fund products. Chinese regulators are keeping a largely positive outlook toward competition in the financial services industry," says Will Tao, analysis director at internet consulting firm iResearch.

Almost all banks in China are state controlled, but Beijing wanted to inject some competition and innovation into the sector with the aim of getting credit flowing to small firms that still struggle to access bank loans. Small and medium-sized businesses account for 60% of China's economy and about 75% of jobs, economists say. If China is to sustain economic growth, it needs to empower small businesses. Beijing hopes this new crop of privately owned lenders can boost access to funds for small-scale borrowers.

ONLINE-ONLY BANK

China's Premier, Li Keqiang, is a big supporter of reforms in the banking industry.

When internet conglomerate Tencent launched WeBank—China's first internet-based bank—in January, Li was in attendance to celebrate the event.

Li visited WeBank's headquarters in the southern city of Shenzhen, where Tencent is also based, to give the launch his stamp of approval. A keystroke on a computer keyboard by the Chinese premier signaled the first approved loan by the online bank—a ¥35,000 ($5,700) loan to a truck driver named Xu Jun.

"I could say that this is a small step for WeBank, but it's a big step for financial reforms," Li was quoted as saying. He then encouraged WeBank to "break a path in the field of internet banking"—for example, by helping to reduce transaction costs for small clients and in doing so, compel traditional financial firms to be quicker on reforms.

Tencent set up WeBank in the Qianhai special economic zone after receiving regulatory approval in July 2014. It owns 30% of the online bank, which has ¥3 billion (HK$3.75 billion) in registered capital. Two other stakeholders are Shenzhen Baiyeyuan Investment and Shenzhen Liye, with 20% each. The remaining 30% will be split among seven additional shareholders. Without physical branches to attract depositors, Tencent will have to rely on its secret weapon: The WeChat mobile messaging service, whose active users now total more than 400 million.

WeChat dominates all messaging platforms in China, and activities around it have expanded over the years to include taxi booking and online purchases. Users have linked their bank cards to the application to seamlessly transfer funds to Tencent's version of Yu 'e bao, known as Licaitong, which reached ¥100 billion in assets in less than a year since its inception in January 2014. Offering banking services over the same platform is a natural extension of Tencent's foray into financial services, analysts say. These new avenues for consumers to manage their finances will in the long run drive innovations in services in the broader market.

IS THE MARKET READY?

Just how disruptive can internet finance be to traditional banking? China's financial services sector is immature compared with developed markets, and it lacks the variety of products or services found in such markets as the United States or European Union. China's banks are tightly regulated, with deposit interest rates controlled by the authorities and currently set at low levels. Although the industry has made strides over the past 30 years, the investment choices for individual savers and investors have remained limited.

Although there is little evidence to suggest that internet-based finance is making a serious dent in the operations of traditional banks, what is apparent is that businesses like Alibaba and Tencent are injecting life into the sluggish world of Chinese finance and aiding in the industry's transformation in the process, analysts say.

"Some investors are concerned about the challenges to traditional financial institutions posed by internet players, but we see internet-based financial services complementing the existing services provided by banks, especially in areas previously neglected. The new internet products will be used to differentiate the services offered by traditional financial institutions," says Leon Qi, CFA, director of China financial research at Daiwa Capital Market.

Third-party payment service is an area in which internet companies are making serious inroads. Third-party payments have seen strong growth in China in recent years, with the value of transactions rising at a yearly compounded rate of 62% in the 2009–12 period, according to iResearch data. In 2012, ¥12.9 trillion of funds were paid through third parties. The contribution of online third-party payments to total online payments rose from 17% in 2009 to 28% in 2012.

Alibaba's offerings are some examples of how new services for consumers to manage their finances are driving innovations in the broader market. Chairman Jack Ma has been using the company's own version of PayPal—the payments processing service called Alipay—as a springboard to aggressively offer financial products.

In the past, the Chinese were using Alipay simply to shop on Alibaba's Taobao, a virtual store in which vendors sell consumer goods like iPhones or shoes. Today, the payment platform is so much ingrained in China that its millions of users rely on the platform to pay for nearly all household bills or to purchase products online. They also use its mobile version, the Alipay Wallet app, on their smartphones to quickly transfer funds to and from their bank accounts and to those of friends or relatives.

Taking innovation one step further, Alipay introduced users to Yu 'e bao, the money market fund. Users can invest as little as ¥1, and move their funds in or out anytime. The funds, which are invested in such low-risk securities as government bonds and interbank loans, offer a return of about 4.5%–6%, which is higher than what savers get on one-year bank deposits.

Analysts say the convenience of moving funds in Yu 'e bao is what appeals to the market, and Alipay has combined this offering with insurance products as well as lending to companies that set up virtual storefronts on its websites.

Ma, who controls Alipay, recently rebranded the company as Ant Financial Services Group as it deepens its efforts to gain a strong footing in the $27 trillion banking industry. The new Ant Financial will oversee six financial services entities that are affiliated with Alibaba. Apart from Alipay, Ant Financial will have in its portfolio the Alipay Wallet app with its 190 million active users; the money market fund Yu'e Bao; Zhao Cai Bao, the finance arm that aims to create a marketplace for ¥1 trillion of loans for small and medium-sized enterprises in two years; the micro online loan provider Ant Credit; and finally, its own private bank, MYBank.

The success of Yu 'e bao has also spawned similar offerings from e-commerce firms. Tencent's Licaitong offered its own version of Yu 'e bao within six months of the latter's launch. Web services company Baidu and e-commerce companies 360Buy, Jing Dong, and Suning also offered similar products months later.

Some of the smaller Chinese banks have launched money market fund products similar to Yu 'e bao. Yet, there were concerns raised in the industry that the funds, which offer higher interest rates than regular bank deposit accounts, are not well regulated and pose a long-term threat to the deposits of state-run banks.

"Over the long term, the competition from more convenient and high-yield internet-finance products will mostly affect banks' funding costs and the composition of funding, rather than the amount of funding," says Qi. "More retail funds shifting into money market funds will also force banks to offer higher rates than the regulated deposit rates through wealth management products, which will effectively accelerate the pace of interest rate deregulation in China."

MOVING FORWARD

Although traditional banks retain a clear lead, it is becoming apparent that China's financial sector needs change to keep up with the tech upstarts.

One emerging challenge is coming up with regulations that could protect the users of these online services.

"Despite the potentially wider business scope that internet companies might be able to enjoy, these financial products will be operating under a bank license and are subject to all the regulations governing banks. This means the internet players will be closely monitored by the financial regulators," says Richard Cao, an analyst at Guotai Junan Securities.

For now, internet companies are proponents of third-party payment services and peer-to-peer lending. That may not sit well with those averse to risk.

"From that perspective, of all the commercial institutions in China, the banks offer the strongest credit protection. Hence, it is difficult for other players, including the pure online payment companies, to challenge the banks' position in the payment industry," Qi says.

But these online firms are part of China's longer march to a liberalized financial sector.

"Internet-based firms are emerging in China's finance services because the immature nature of China's banking industry is giving rise to opportunities for non-banking entities to thrive," says Cao. "It is only unique to China because of the inefficiency of the system. Efficiency of the banking sector will increase through a market-oriented pricing mechanism. The liberalization of China's interest rates is a critical step in China's reforms in the banking sector."

Leonora Walet is a financial writer based in Hong Kong.

KEEP GOING

"Where to Invest in China: Four Powerful Trends Long-Term Investors Can't Ignore," *Enterprising Investor* (26 November 2014) [blogs.cfainstitute.org/investor]

"A Start of Something Big," *CFA Institute Magazine* (November/December 2014) [www.cfapubs.org]

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Imbalancing Acts

CLOSING IMBALANCES CAN PROVIDE USEFUL INFORMATION

By Dennis Dick, CFA

If you were watching the trading action in Johnson & Johnson Inc. near the close on 21 March 2014, you would have noticed the stock had a significant run-up into the 4:00 p.m. EST close. But shortly after 4:00 p.m., the stock continued to move higher, gapping up over a dollar on the NYSE closing print. What happened to cause such a large spike in the stock price at the end of the day?

The cause of the large spike in price was a large closing buy imbalance on the NYSE.

WHAT CAUSES IMBALANCES?

To understand the impact of imbalances, it helps to understand the underlying exchange mechanisms. Throughout the day, the designated market maker (DMM) on the floor of the NYSE continuously gathers all the MOC (market on close) and LOC (limit on close) orders for the stocks on their post.

KEY POINTS

Closing imbalances can cause large moves in the share price of particular stocks.

Such situations can create opportunities for vigilant, knowledgeable traders.

Because information about imbalances has potential value, various providers now offer tracking services.

MOC orders are orders that are to be executed on the NYSE closing print regardless of price. LOC orders are to be executed on the NYSE closing print if the closing price is at or better than the limit price designated in the order—making them marketable on the closing print. These orders need to be submitted by 3:45 p.m. EST (15 minutes before the close). After this time, these orders cannot be cancelled.

At 3:45, the regulatory imbalance is publicly disseminated to the market, showing the disparity between the MOC and marketable LOC orders to buy and the MOC and marketable LOC orders to sell on each individual stock. For example, if stock XYZ has 85,000 shares to buy MOC and 15,000 shares to sell MOC, the posted imbalance would be 70,000 shares to buy on that stock.

Some days, these buy and sell imbalances can be very large and can have a significant impact on the closing price of the stock. A large buy imbalance may push the stock price higher, and a large sell imbalance may press the stock price lower.

In the JNJ example already described, the buy imbalance that pushed the stock price up over a dollar was more than 6 million shares, a very significant amount considering the average volume in JNJ for the entire day is usually under 10 million shares.

OFFSETTING INTEREST

The reason for publicly disseminating imbalance data at 3:45 is to attract offsetting interest. Unlike regular MOC or LOC orders, any MOC or LOC orders offsetting the regulatory imbalance can be sent until the 4:00 p.m. close. For example, if IBM has a buy imbalance of 100,000 shares, there might be an institutional trader that is looking to sell some stock. In some cases, they might send an MOC sell order for 100,000 shares, which would completely offset the 100,000-share buy imbalance as the MOC buy order and MOC sell order are then paired off.

In other cases, there might not be enough offsetting interest to pair off the buy orders, and this situation can lead to a significant move in the price of the stock on the closing print.

"The imbalances can offer a good opportunity to get into a position at a really good price, but you need to have your ducks in a row. I make sure that there is no news on the stock or in the sector," says Greg Burnett, a 22-year trading veteran on the floor of the Pacific Stock Exchange, now a retail trader, who has traded these imbalances for years. "I make sure the technicals are lining up, and I keep an eye on the overall market. If everything looks good, then I may look to fade the closing print." He uses this approach because moves driven by order flow and not fundamental information are often retraced the following day. In the case of JNJ, such a trade would have worked out well for any trader selling short the closing print because the stock opened down a dollar the next morning.

It is not always so simple, however. "What is displayed in the imbalance feed does not always give the full picture because it doesn't include floor broker interest in it and it doesn't include DMM interest in it," says Jonathan Corpina, senior managing partner at Meridian Equity Partners, who works institutional orders from the NYSE floor.

In some cases, the designated market maker might sell some stock from his own account on the closing print to help offset the imbalance. In other cases, a floor broker might step in at the last minute.

"There is a human interaction component in the price-discovery process," says Corpina. "A floor broker can verbally express their interest; they don't always have to enter it electronically into the feed. For example, the imbalance feed might be showing 200,000 to buy, and everyone thinks it is going to close up, but I'm standing in the crowd and I've got 300,000 to sell. As the close approaches, I can say to the DMM, 'Hey, how's it looking?' The DMM says, 'It's looking up 60 cents.' So I say, 'Great, I've got 300,000 to sell,' and the stock ends up closing down."

Traders relying solely on the data from the imbalance feed would be missing this information. “Crowd interest changes everything,” says Corpina. “The most reliable information still comes from a floor broker because they can read a seller in the crowd.”

Floor brokers also have some special tools at their disposal. One of these tools is the D-quote, which is a discretionary quote order. Unlike normal MOC or LOC orders, which have to be submitted by 3:45 (unless they are offsetting the regulatory imbalance), these D-quotes can be submitted up until 3:59:50. “These orders can also be cancelled and modified, which gives the floor trader much more flexibility,” says Corpina. D-quote data do not show up in the imbalance feed until 3:55 p.m., which can cause a significant change in the imbalance data at this time.

THE CLOSE IS SUCH AN INTERESTING LIQUIDITY EVENT BECAUSE MARKET PARTICIPANTS FACE IT FROM SO MANY DIFFERENT ANGLES.

EARLY LOOK

Floor brokers have always been able to get an early look at the imbalance data by speaking with the DMMs on the floor.

Joe Benanti, managing director at Rosenblatt Securities, recalls his days from trading on the NYSE floor. “In the past, you’d have a customer interested in the imbalance information on a specific stock,” he explains. “So we’d walk out to the post to ask the specialist (now known as the designated market maker) and then give that information back to the customer. Today, it’s a lot different; the floor broker handhelds receive this information directly.”

And with that information, Rosenblatt has created a product for its customers called the Rosenblatt Imbalance Tracker, which gives an early look at some of the biggest names on the NYSE.

Beginning as early as 2:30 p.m., the Imbalance Tracker begins to populate with an early dissemination of NYSE imbalances for the 87 stocks in the S&P 100 and a few other selected issues. “Our NYSE floor trading team manually inputs and updates the data until 3:45 p.m., when the electronic feed is disseminated from the floor,” says Benanti.

Gordon Charlop, managing director and partner at Rosenblatt Securities, helped to create the Imbalance Tracker. According to him, a number of different types of market participants are tracking imbalances for a variety of different reasons.

“The close is such an interesting liquidity event because market participants face it from so many different angles,” he says. “You’ve got prop traders trading into it. You’ve got volatility guys that are looking for aberrational pricing. You’ve got traders trading against option positions, institutional traders doing VWAP and trying to figure out how much to slice into that last print.”

AGGREGATE DATA

Because imbalances can be an indicator of overall direction, Rosenblatt’s Imbalance Tracker also aggregates the data and breaks it up into different sectors to give the user an overall feel for the direction of the market or specific sectors.

Other products also aggregate the data. A product called the Market Imbalance Meter (MIM) starts aggregating the data an hour before the close. “The meter aggregates the imbalance data from 250 NYSE stocks that give a good representation of the overall market,” says Danny Riley, a 37-year floor veteran and president of Mr TopStep, LLC, which produces the MIM. According to him, users include hedge funds, proprietary trading firms, and investment banks. The data can help with decisions about the market direction going into the close. Riley offers an example in which the imbalance to buy is 200 million to buy at 3:00 p.m., 300 million at 3:15 pm, and 500 million at 3:30 p.m. With such a trend, he says, “there is a good chance that we are going to have a strong close.”

Another aggregator is Hamzei Analytics. “Any number over $500 million is significant and potentially market moving,” says Fari Hamzei, founder of Hamzei Analytics and also a quantitative index futures trader. “If I were short S&P futures, I may look to cover if there is a significant amount of orders to buy on the close.”

But Hamzei considers other factors as well, including the day of the week: “Is it a Friday before a holiday weekend? Is it an options expiration? Is there an index rebalance?” On these days, there are a lot more fundamental traders who are very active on the close.

“The imbalance data is big on quarterly rebalances,” says Riley. Index traders need to buy the stocks that are moving into the index and sell the stocks that are coming out of the index. One of the most important days is the day of “the Russell Rebalance,” which happens on the last Friday in June. The large numbers of index traders can really push the closing prices around. “Things have to happen on a rebalance, it’s just a matter of when,” says Corpina.

What is clear is that closing orders can sometimes have a significant impact on the price of the stock. Thus, watching the closing imbalance feed may provide important information for a variety of participants, whether an institutional trader, a prop trader, or even a part-time retail trader.

Dennis Dick, CFA, is a proprietary trader at Bright Trading in Detroit and a member of CFA Society Detroit.

KEEP GOING

"Frequency Jamming: Can Investors Outsmart High-Frequency Traders?" *CFA Institute Magazine* (September/October 2014) [www.cfapubs.org]

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The Long Arm of FATCA

US TAX ACT'S COMPLEXITY HAS A GLOBAL IMPACT ON FIRMS AND INVESTORS

By Ed McCarthy

US expats often encounter challenges living overseas, but FATCA—the Foreign Account Tax Compliance Act—is making life even more difficult for some of them. Numerous media reports describe US citizens being "locked out" by foreign financial services institutions that are canceling their accounts and refusing to open new ones. FATCA's filing requirements are also exposing past tax-reporting errors and generating potentially large liabilities and penalties.

KEY POINTS

Some reports suggest that FATCA is disrupting US expats' access to foreign financial services.

As new requirements cause foreign financial institutions to report US citizens' holdings to the IRS, these taxpayers may learn that they face penalties for past failures to comply with old rules.

In some cases, foreign trusts must register with the IRS as foreign financial institutions, with possible mandatory withholdings on transactions.

PAST OMISSIONS

FATCA requires foreign financial institutions to give the IRS information about financial accounts held by US taxpayers or those held by foreign entities in which US taxpayers have a significant ownership interest. In addition, US citizens who own foreign financial assets above specified amounts must file a new annual Form 8938, a "Statement of Specified Foreign Financial Assets," with their tax returns.

FATCA does not create extensive new reporting requirements for US citizens abroad, according to David Kuenzi with Thun Financial Advisors LLC in Madison, Wisconsin. Many US citizens will be exempt from filing Form 8938 because their assets fall below the reporting thresholds. But here's the catch: Taxpayers who previously violated filing and disclosure requirements are about to face the error of their ways.

Consider a long-term expat who participates in a foreign retirement savings plan. She assumes the plan's earnings are tax exempt, as they are in the US, so she does not include its earnings on her tax returns or report the account to the IRS.

That assumption is incorrect, but because the IRS didn't know about the account in the past, it wasn't an immediate problem. Under FATCA, however, the IRS will learn about the account and can inquire about her incomplete past filings. Non-compliance is apparently widespread. More than 7 million US citizens are estimated to live abroad, and millions of others have green cards that make them subject to US tax rules. According to the IRS, however, only 170,000 taxpayers filed Form 8938 in 2011 and 187,000 filed in 2012.

The reality is that many people subject to US tax laws have not been reporting their foreign financial assets properly. "These are not new rules related to FATCA; these are very old rules," says Kuenzi. "But the problem is FATCA means because you have to now assume that your foreign financial institution is going to be reporting on your assets and your holdings to the IRS, you have to start complying with these rules, which were basically ignored by virtually everyone."

DAUNTING COMPLEXITY

Omissions are understandable in light of the filing requirements for some foreign assets. In a July 2014 *Wall Street Journal* op-ed, Kuenzi gave the following example of a US family living in Germany. They own five or six German mutual funds that the IRS treats as passive foreign investment companies (PFICs). The US tax filing requirement for this portfolio is onerous; the IRS estimates it takes over 200 hours annually to prepare and file the required forms. "Furthermore, once the filing is made, the taxpayers will find their investment gains taxed annually and subject to a tax rate no less than 39.6%, and potentially much higher," he writes.

The cost of non-compliance mounts quickly. Charles Kolstad, counsel with law firm Venable LLP in Los Angeles, cites a case in which the client's nominal tax liability on an unreported PFIC was about $2,000. That was just the start, though. "Because of the PFIC rules, [the client] ended up with a tax bill for $57,000," he says. "Then you add in a penalty for not having paid the tax and interest on all of that, and [the client] ended up writing a check for over $100,000, where the nominal tax bill was a couple of thousand bucks. So, it becomes very expensive. … The US system is not designed to handle in an easy fashion US people who really are living outside the US on a long-term basis."

LOCKED OUT

Even when expats avoid filing problems and penalties, there may be a risk that their bank or brokerage firm will cancel their accounts, citing FATCA as the cause. According to a June/July 2014 member survey of Washington, DC–based Democrats Abroad, 16% of the respondents had experienced the closure of an account in a foreign bank or brokerage house since FATCA's passage.

The survey's findings indicate that it's likely a cost–benefit analysis by institutions choosing to drop smaller customers rather than incur the expense of complying with FATCA. More than two-thirds (68.0%) of the checking accounts and 40% of the savings accounts closed had balances below $10,000 at closure. On the investment side, more than half (58.9%) of the investment/brokerage accounts held less than $50,000, as did over two-thirds (69.3%) of the dedicated retirement accounts. Kuenzi is also hearing reports of financial companies, including US institutions, making case-specific decisions on each account. "Generally, if you've got a lot of money, they'll keep you," he says. "If you haven't got a lot of money, they're kicking you out."

Denise Hintzke, director of Deloitte's FATCA Initiative in New York City, believes lockouts should diminish as more foreign institutions realize that having US citizens as clients is not what triggers FATCA inclusion. Another factor is that the OECD's Common Reporting Standard starts next year. The easiest way to think of the Standard is "FATCA on steroids," according to Hintzke, and within two years, more than 90 countries will have adopted FATCA-like laws. If a financial institution wants to relieve its compliance burden by dropping customers covered under these regulations, it eventually will have no customers remaining, she notes. "The reporting itself is really not the big issue here: It's identifying and finding the individuals that you need to report that is all the work," she says. "A lot of [institutions] have settled down, and I don't believe that the issue of expats not being able to have bank accounts is really as big as it's been blown up to be by some quarters."

Some lockouts attributed to FATCA can have other causes, as well. Frederic Behrens with Thun Financial Advisors points out that recent decisions by US-registered mutual funds to bar sales to non-residents are the result of seldom-enforced, decades-old rules, not FATCA. Mutual fund distribution agreements typically mandate that fund owners reside domestically in the United States for two main reasons, he reports. First, US fund groups cannot solicit overseas business for their SEC-registered funds, even from US expatriates. Second, mutual funds may make tax treaty claims on their holdings, which require funds to certify that all shareholders reside in the United States.

TRUST ME?

Owners of foreign trusts potentially face additional compliance burdens because the trust might be classified as a foreign financial institution, according to Kolstad. That status requires the trust to obtain a global identification from the IRS "and do a whole bunch of things that, in the context of a family trust, don't make a lot of sense," he adds. Failing to comply means the trust will incur a 30% withholding requirement on specified payments.

Craig Richards, director of tax services at Fiduciary Trust Company International in New York City, shares the example of a foreign trust's portfolio manager selling stock with a $500,000 basis for $1 million, resulting in a $500,000 gain. Fiduciary Trust, acting as the trust's withholding agent, is currently not required to withhold any amounts from the proceeds. But if the trust does not comply with FATCA, the trust company must withhold funds starting in 2017 and each successive trade will deplete the account: "[Assume] a portfolio manager sells the position in a non-compliant FATCA account for a million dollars," he says. "We're going to withhold 30%. So, now you only have $700,000 to reinvest versus in 2014, when you had $1 million to reinvest."

Many advisors aren't aware that clients' trusts can be classified as FFIs (foreign financial institutions), notes Hintzke. That lack of awareness is often based on a misunderstanding of FATCA's applicability, which isn't driven by the presence of a US citizen. "It really doesn't make any difference whether or not there is a US person there," says Hintzke. "It doesn't make any difference whether or not there's US income in the trust. It still needs to be classified and a determination made as to whether it has to register."

IF A FINANCIAL INSTITUTION WANTS TO RELIEVE ITS COMPLIANCE BURDEN BY DROPPING CUSTOMERS COVERED UNDER THESE REGULATIONS, IT EVENTUALLY WILL HAVE NO CUSTOMERS REMAINING.

SEEKING SOLUTIONS

One solution attracting headlines is renunciation of US citizenship. It's estimated that about 3,000 persons will do so in 2014; persons considering that option obviously should seek expert counsel. Sources offer several less drastic solutions for expats to manage lockouts. Jonathan Lachowitz of White Lighthouse Investment Management maintains offices in both the US and Switzerland, and he believes the lockout problem is "manageable but it takes hard work." His view is that expats need to do their due diligence and investigate multiple financial institutions to find one in their area willing to work with US citizens. Opening new accounts may require satisfying a bank's compliance department and can include providing tax returns and copies of previously filed foreign asset documentation, among other requirements. Kuenzi notes that US expats in larger foreign cities are more likely to have access to local branches of global banks. Many of these institutions have chosen to continue servicing US banking clients, although that's not necessarily true for investment management.

Behrens sees several possible strategies for avoiding overseas investment account lockout, such as working with a brokerage firm still willing to serve US citizens, investing in exchange-traded funds (which generally can be sold to non-US residents, unlike mutual funds), buying individual stocks and bonds instead of mutual funds, and keeping an address of record in the United States. Rich Checkan with Asset Strategies International in Rockville, Maryland, points out another scenario in which expats with larger investment accounts might hire an independent, SEC-registered investment manager based in the foreign country. Those firms, he explains, continue to welcome US investors.

Ed McCarthy is a freelance financial writer in Pascoag, Rhode Island.

KEEP GOING

"The End of Bank Secrecy?" *CFA Institute Magazine* (May/June 2013) [www.cfapubs.org]

A VIEW TO THE FUTURE

By 2030, investment management will be transformed by megatrends that are already reshaping the industry, according to a new study

By Nathan Jaye, CFA

The year 2030 might seem like a far-off future of spaceships and robots, but keep in mind that it's only 15 years away. A recent report by KPMG titled "Investing in the Future" explores the potential changes of the next decade and a half and their likely impact on the investment industry. The analysis concludes that a major transformation will be driven by megatrends in demographics, technology, the environment, and society at large. In an interview with *CFA Institute Magazine*, Tom Brown, global head of investment management at KPMG, discusses the coming cultural and technological disruptions facing investment managers, the implications for new hires and career management, the search for the "Apple factor" in financial services firms, and even the possibility of tech giants (such as Amazon and Google) entering the investment business.

How are megatrends reshaping the investment industry?

We focused on four categories of megatrends. The first is around changing demographics. The second is around technology. The third is around resource shortages, and the fourth is around changing social behavior.

These are the key trends that we believe have been reshaping the industry. But at the heart of all this, it's about the industry focusing on the changing needs of the client, which will look very different in 2030.

One of the big questions is how the industry will shift as the players look to get closer and closer to their customers. The business and operating models will need to be reshaped and restructured to be successful.

How are the rules of the game changing?

New business models are emerging that play into the evolving needs of customers, and as such, traditional investment management products are becoming more innovative. Client service models will need to do a better job of explaining the proposition and providing more aggregation of information—a more holistic view of people's investments, in other words. Then, the real big game changer is financial technology, or "fin-tech," and so-called fun-tech, and the combination of that is emerging as a very interesting trend.

What is fun-tech?

Fun-tech is similar to gaming technology and is often associated with the term "gamification." It's a different mindset of how people like to engage digitally. The gaming industry has been successful in engaging with people and encouraging people to play these games, time after time. Some of these approaches can translate across into the investment management industry, and by combining these with fin-tech, investment management firms can better serve their customers. [For more thoughts on the implications of "fun" for the investment industry, see the sidebar "Should Investing Be Fun?" by Ralph Wanger, CFA, on page 31.]

You say that an investor of 2030 looks quite different. How so?
He or she is much more mobile—and global. They are encompassing many more life events. In particular, employment trends tell us that the idea that someone starts to work for a corporation and works there for 40 years and then retires just doesn't happen anymore. The 2030 investor will be much more connected to many different communities, through social media and other networks. They are a far more diverse demographic than today's customer of investment managers.

If you look at the success of the industry over the past 20–30 years, it's largely been built on the back of the baby boomer generation. It's predominantly a male-dominated middle-class demographic.

As we move from one generation to another, it is clear that the industry's client base will be much more diverse in the future. The investor of the future is likely to come much more from the developing economies than from the developed world.

How will this affect the investment industry?
This creates a much wider set of options for the industry—across a much broader demographic. I think the aging population and the scenarios we are seeing present a great deal more opportunity for long-term saving and investment propositions. The increasing wealth and growing population of developing and emerging economies represent a significant pool of capital and source of revenue for the industry.

Which metrics are tracking these shifts?
Clearly, there are lots of metrics around trends—you can look at savings rates, employment, changing employment patterns, and data in terms of how frequently people are changing jobs and how long they are staying in the work force, to name a few.

There are a number of different data points one can use for tracking. Through technology, such as big data analytics, firms can make sense of these data points and create models to help them develop products that are profitable and relevant to their clients.

What can financial firms do to reposition themselves for the future?
It's about starting to think through what the customers of the future want and expect from investment managers in terms of the customer experience. I think a big part of it is thinking through the digital revolution. What is a company's digital proposition to their customers and potential customers?

Certainly a lot of the conversation within organizations has been around trying to move away from spending time and effort on fixing legacy issues with their technology platforms of the past and starting to think to the future. How do they start to embrace the potential of digital big data, data analytics, and so on? How do they change?

How do organizations need to start thinking if they're currently operating in a world where they're too far removed from their end customers, because they distribute their product through third-party distributors? How do they start getting closer to understanding the needs and the requirements of the end consumers?

If they don't go all the way to the direct consumer, how do they get much better at working with their distribution partners? Those are some of the things I would say to start doing now to anticipate the future.

What can you say about the new "trust paradigm"?
Trust is absolutely key, and that needs to be earned. The ways that the industry can start earning that trust revolve around a focus on simplicity and transparency, as well as actually delivering on the customer service promise.

That takes time to build. I think the challenge to the industry is that, increasingly, non-financial services brands are gaining trust. If you look at the Amazons and Googles of the world, who are serving so many young people, younger generations have trusted these technology firms more than they have financial services firms.

Should investment companies adopt the methods of technology companies in terms of earning trust?
I think a big part of it is delivering on the service promise. The customer experience of big technology companies is very positive for people who use them.


Tom Brown

I think the financial industry and investment managers have a long way to go in terms of getting to that level of customer experience. A big question is, What is the Apple factor, if you like, in terms of a customer experience for a financial services company? That's a big question and a big challenge.

Are established players in the investment industry doing this?
I don't think there's a standout firm in the sector that's really standing head and shoulders above the rest. I think a lot of them are making some serious moves to try and develop their strategy, but I don't think any of them have really made a significant step to position themselves ahead of the competition.

And that's a big opportunity. A lot of firms are spending a lot of time and money and effort in trying to achieve this. The one or ones that manage to do it will be at a significant competitive advantage.

What kind of new investment management value chain might emerge?
There are two key trends. First, investment managers are going to have to get much closer to their end clients. I think

some of them who previously haven't had a direct proposition will go down that path. Others who operate with intermediaries will seek to get closer to their intermediaries to understand their end clients better—ensuring that their propositions and service delivery are meeting the new expectations.

The other big trend is around the appetite for investors to have outcome-oriented solutions as opposed to how the industry has operated in the past—which was more about products than consumers.

So the two factors are being closer to the investors and having more solutions-oriented propositions rather than a simple "product-push" model that gets distributed through third-party intermediaries.

When you speak of outcome-oriented solutions, what do you mean?
This is an area where I think we'll see a lot of evolution. We've started to see some of it already, particularly in the United States. In the long-term savings environment, what is the customer actually looking to save for?

Maybe if customers were clear about what they are saving for (the end product that the customers actually want, whether that's a health care solution or whether that's a retirement home or a car), you could imagine some non-investment solutions beginning to appear. Perhaps retailers or health care providers will make a play, which would be a big disadvantage to the industry in its current model.

EMPLOYERS ARE GOING TO START THINKING DIFFERENTLY ABOUT THE DEMOGRAPHICS, ABOUT WHOM THEY ARE HIRING IN THE ORGANIZATION.... THIS BECOMES THE INTERNAL SOURCE OF CULTURAL CHANGE AND INNOVATION.

That's quite different from the "product-push" model, as you say.
It does require a very different mindset and culture and way of thinking. To actually deliver on that different type of business will require quite a different business model to support it.

Where does that culture change begin?
I have had a lot of conversations with investment managers over the last few months with this research that we have done. Employers are going to start thinking differently about the demographics, about whom they are hiring in the organization, about how they can leverage a younger and different generation. This becomes the internal source of cultural change and innovation.

I think probably a big part of it—from an investment management point of view—is thinking about how to re-create an organization in terms of the work force. Managers can take some of the cultural differences and innovations and new ways of thinking about the world into their organization and use that as a driver of further change.

Could that include hiring people who may not even be targeting a career in investment?
Yes, exactly. Breaking out of the traditional thought process and of what sort of people they want to hire.

What kind of career skills might be attractive to the investment community under that scenario?
I think it all links to technology. If you think about an investment manager, there are two really important characteristics. One is how good they are at investing. In other words, the front-office investment engine. One aspect of that is how the use of technology, big data, data analytics, and sheer computing power can enhance the investment engine being used by investment managers.

I think that investment management will increasingly be looking at data scientists and technologists, working on how the investment proposition can be enhanced and can be developed to such a degree using technology and computing power to get an investment advantage. That's on the investment side, which will require a different sort of person than they've historically employed.

The other side of it, I think, is all around the customer and service delivery side of it. I think as the clients, whether private clients or institutional clients, raise the bar on what they expect for the customer experience—how they interact, what sort of information, and how it's presented to them by their investment manager—they're going to need people who come from a much more consumer-centric background.

Why will flexibility and agility be important?
The context for that is not just in the investment world—but in life and the world in general. We're experiencing a much greater pace of change in everything that we do. A lot of that is driven by new technology that enables us to do things more differently, more quickly, more efficiently, and so on. I think what that means is that all organizations, including investment management, live in a rapidly changing world, and to be successful in that world, organizations need to be far more agile to respond to changes more quickly than they ever have before.

[The report we've put out is] a view of the future. It is only a view. The reality is that no one can really predict the future. Things can change and develop very, very quickly. I think a really good path to success for investment managers and other organizations is their ability to think quickly on their feet, and that requires a degree of agility as new opportunities and challenges are presented to them.

How did you come to that idea of technology companies—Amazon, Google, Apple—disrupting the investment industry?

The general thought came from the fact that in a relatively short span of time, we have seen technology companies develop very quickly and develop broad propositions to the people who use them. Apple, for example, has moved into the music business. Amazon has moved into the online video-streaming business. They're adapting and moving very quickly and disrupting all sorts of industries that previously they hadn't touched. That's one aspect.

The other aspect is that in China, Alibaba launched a money market fund. Alibaba is effectively the Chinese equivalent of Amazon. They launched a money market fund [in June 2013] on their platform and very quickly attracted significant amounts of investors' money into those funds (nearly US$90 billion in the first nine months, making it the fastest-growing mutual fund in history), which was essentially distributed on their platform. [For more on these developments, see the Analyst Agenda article on page 22.]

So we are seeing evidence that these organizations can disrupt existing investment industries. For its back end,

Should Investing Be Fun?

By Ralph Wanger, CFA

There was a time when professional investors were invited to lavish parties. We attended in beautifully tailored suits and colorful neckties. We would soon be the center of a group of envious, stylish, beautiful people trying to pry a stock tip from our reluctant mouths.

Things have changed. The parties are different. There are still nice, attractive people around, but they don't care about individual stocks these days. There may be a discussion of "the market" but no stories about hot stocks. Why not?

Bias toward the stock market was very positive in the 1990s, but the bias is reversed now. Even CNBC is losing its audience, with ratings dropping to a 21-year low as of September 2014. Once the public bias toward stocks has gone negative, the task of switching it back again is very hard and long.

Negative bias is not good for professional investors' career paths. We have had a five-year up market, but lacking the buoyant sentiment that would make it *feel* like a bull market. Without market enthusiasm, being a professional investor isn't as much fun.

A glance at the history of the stock market over the previous century shows the impact of sentiment on the stock market. In 1901, the market was in railroad stocks, banks, and financial companies. The DJIA was largely agribusiness. Turnover was at the highest rate of the century—319%—reflecting a very speculative market. Later in the century, 1929 was the first year to see more than one billion shares traded, and it took until 1961 to get back to a billion. A billion shares a year is equivalent to four million a day. Today, the market is at a billion shares an hour. So, what was a year's trading is now done every hour.

The trend of increasing volume did not go in a straight line. In 1942, turnover hit a pitiful low of 9%. That is what happens when the public becomes biased against equities. The market took 25 years to get back to its 1929 high and 32 years to get back to 1929 volume. The stock market crash biased a full generation against investing. For instance, in June 1946, *Fortune* magazine reported, "From V-J Day (August 15, 1945) through May 1946, the DJIA is up 27%. The market is broad but thin; and no one is jumping out of windows yet." When a bull market in stocks is reflexively

NEGATIVE BIAS IS NOT GOOD FOR PROFESSIONAL INVESTORS' CAREER PATHS. WE HAVE HAD A FIVE-YEAR UP MARKET, BUT LACKING THE BUOYANT SENTIMENT THAT WOULD MAKE IT FEEL LIKE A BULL MARKET.

linked to suicides that occurred years in the past, we have a fine definition of negative bias. When I started in finance in 1961, there were a few young people, rather more men over 55, and no one in between. The investment profession skipped a generation.

Today, a registered investment adviser or financial planner often works for a big company that wants low compliance issues above all. We now even call the funds we sell "products." A "product" is something that will work exactly like it did last year and will again next year. Under this definition, Cap'n Crunch cereal is a product but an S&P index ETF is not.

The electronics of an automatic teller machine (ATM) and a slot machine are very much alike, but the customer perceives them as wildly different. The ATM is an efficient and accurate machine performing a useful function, just like an index fund. You "play" it once and leave. The slot machine produces a disastrous rate of return for the customer, but that is fine because the customer is *playing* and will keep playing until the bucket of quarters is gone. Old guys used to talk about "playing the market," but that expression is out of date now.

Maybe the trend will change. Now there is talk about using "gamification" and "fun tech" to make investing more fun (hopefully without slot machines' negative rate of return). Whether this is a good idea or not, if our profession is going to flourish, we need to change the negative image of investing. Equities are not ever going to be "products," because they will give different results each time. This unpredictability is not a defect; it is an advantage that will cause a positive bias. It is exciting!

Ralph Wanger, CFA, is a trustee of Columbia Acorn Trust.

Alibaba's money market fund has a partnership with a Chinese asset management company. The whole front end of the experience is all through Alibaba.

How quickly could these changes happen?
I think over the next five years, we'll see a significant amount of change. We're just on the cusp of many, many changes coming into the industry, particularly as companies start to embrace technology in a much more innovative way than they have in the past.

What are some of the initial shifts we'll see, the first wave, so to speak?
I think it will be something around the digital experience. I think the first wave will be around how investment managers will really take a step up in the digital experience of their customers, whether institutional or retail.

Are megatrends affecting institutional investors in the same way?
It is different, but on the other hand, there is an element that is similar. Institutional investors still have human beings who work for them and are fundamentally the people who will be engaging with investment managers. Let's say you are a large pension fund or a sovereign wealth fund. You still have expectations about your interactions with investment managers. You will still expect to have a different digital experience, you'll expect to see more transparency, you will expect more tailoring using digital technology in how you interface with your investment manager.

THE BIG WINNER COULD BE THE INVESTMENT MANAGEMENT INDUSTRY IF IT DOES EMBRACE CHANGE. IF IT DOESN'T, THEN ANOTHER INDUSTRY WILL STEP IN AND DO THE JOB FOR THEM.

Some of the same principles around the customer experience will apply. I think in terms of the investment proposition, the interest of institutional investors is around adopting more technology and enhancing computer-power-generated investing. Institutional investors may be the early or first adopters of some new investment techniques using a much higher degree of computer power.

You argue the industry hasn't levered its inherent skill in analytics, in terms of optimizing big data to deliver more to its clients. Why not?
That gets back to the theme that firms—to a large extent—haven't invested in their data management capability and, therefore, they have been unable to exploit the sheer volume of data they collect every single day on their activities and interactions in the market and with their customers.

The reason they haven't embraced it is because they haven't invested in leading-edge data architecture and data management functionality, and neither have they invested in the data scientists and the data analytics capabilities to really exploit the data. They're playing catch-up.

Are there third-party data management firms specifically oriented toward the financial industry, or is this happening in-house?
What I've seen more is that firms are investing in their own capability rather than going outside. They're hiring people and then building their own capability.

What's a best- and worst-case scenario for the industry going forward?
The worst-case scenario for the industry is that there is too much complacency and conservatism—a view that things aren't changing dramatically in their marketplace—and that the business models and approaches of the past will continue to work on into the future. So the worst-case scenario is around complacency and, then, ultimately getting left behind.

The best-case scenario is embracing change, embracing technology—in a very broad sense—and embracing that customer needs are significantly changing. The best-case scenario is that the industry does wake up and embrace that change—because there is, fundamentally, a huge opportunity around the growing need for essentially funding longer lives and populations.

It's clear there is a job to be done. The big winner could be the investment management industry if it does embrace change. If it doesn't, then another industry will step in and do the job for them.

Does it take a tiger at the doorstep for change to happen?
Maybe. Maybe there could be an outlier that comes in and takes everyone by surprise and creates a big wake-up call.

What questions can investment professionals ask themselves to prepare for the next 15 years?
If I was a CEO of an investment management company, the first questions I would be asking are, What is our unique proposition as we are today? What are we really good at? How do we exploit what we are really good at today? And how do we need to evolve it?

Next, how well do we really know our clients and what their real needs are and what their needs of the future will be? What is the real value that we bring to those clients? How are we placed to really create value for our clients as their needs evolve? What are we doing to embrace the digital revolution in all its forms?

Nathan Jaye, CFA, is a speaker on intelligence and a member of CFA Society San Francisco.

The DISRUPTOR Array

Is your portfolio ready for an invasion of disruptive technologies?

By John Rubino

Something amazing this way comes. An invasion fleet of perennial "next big things" that have disappointed futurists (for decades in some cases) and provided ammunition for skeptics is finally set to arrive. Artificial intelligence, robots, biotech, and several other world changers are about to create entire new growth-stock ecosystems while disrupting a range of established industries—not someday, not maybe, but definitely, and starting now.

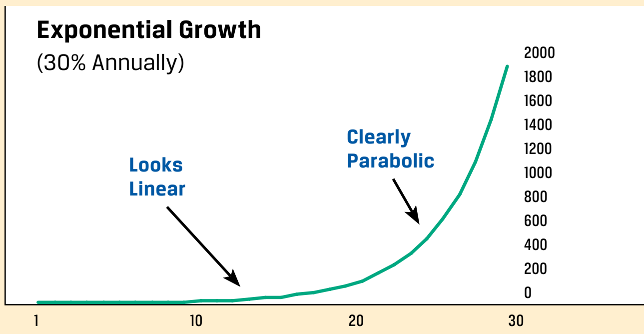
To understand this approaching wave of creative destruction, two basic concepts are helpful: exponentiality and simplification. First, on exponentiality, humans tend to think in linear terms. That is, we notice a rising trend generated by the early stages of steady growth but don't extrapolate to the point at which progress will go parabolic (if it continues at the same rate). As Ray Kurzweil, noted inventor, author, and now Google's director of engineering, told a Singularity University audience in August 2014, "People tend to dismiss a disruptive technology when it's only 1% of a solution, ignoring the fact that it's doubling every few years and will be at 100% in a very short time."

Second, on simplification, it's important to understand that in many cases, the real disruption will come not from bigger, "badder" machines but from simpler, smaller ones. "A typical high-end sports car like a Mercedes S550 has around 1,600 moving parts; a Tesla [electric car] drive train has 19," says Alex Daley, editor of *Casey Extraordinary Technology* newsletter in Stowe, Vermont. "A Predator drone is far simpler to build and maintain than an F-35 fighter jet. Big, single-purpose manufacturing robots are being supplanted by fundamentally simpler 3D printers. At every point in the manufacturing process, the steps are being simplified and digitized, as software replaces hardware."

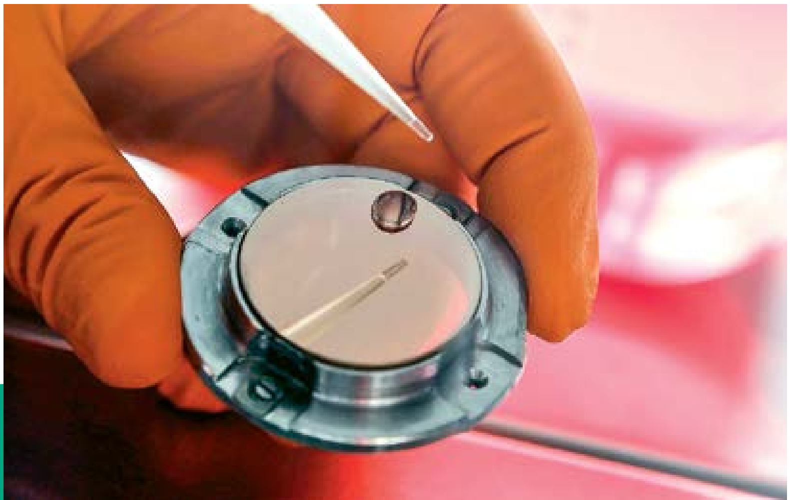
RISE OF THE MACHINES

Consider two examples of what happens when exponential improvement and radical simplification intersect: artificial intelligence (AI) and robotics.

Computers are (perhaps thankfully) a long way from being conscious. But they are becoming intelligent. IBM supercomputers Deep Blue and Watson have, respectively, outplayed the reigning human champions of chess and the game show *Jeopardy*. And Google and Amazon certainly seem like brainy entities to their users.



This kind of AI is spreading to pretty much everything, automating what can be automated and augmenting what (for now) cannot. Amazon warehouses use fleets of robots that locate items and bring them to a central packing station, cutting the time it takes to box a typical order from 1.5 hours to 15 minutes. Spanish food processor El Dulze uses robots to evaluate heads of lettuce, reject substandard specimens, and position the good ones for processing by other machines. Google's driverless vehicles had, by the end of 2014, driven 800,000 miles without an accident. And pilotless drones are replacing everything from fighter jets to traffic helicopters to spy satellites. The list continues through burger-flipping robots and semiautomated clothing stores to encompass virtually every manufacturing and transactional service niche.



Researchers at INSERM (the National Institute for Health and Medical Research) in France are working on techniques to produce human tissue using 3D printing. Here, a researcher prepares liquid droplets containing human cells to be tested with bio-3D printing in October 2014.

In addition to AI and robotics, three other key areas figure to be the focus of intense development: 3D printing, expert systems, and "the internet of things."

3D PRINTING. Thirty years ago, an engineer named Charles W. Hull invented a process called "additive manufacturing," which involved building objects layer by layer rather than through molding or cutting. It was slow and expensive and required decades of incremental improvements to escape the lab. But escape it has. Today's 3D printers can build objects of startling complexity from a set of digital blueprints, and the price/performance ratio is falling exponentially. Entry-level versions now cost less than US$1,000, and the range of things they can produce has expanded to include electronic components and human replacement organs.

EXPERT SYSTEMS. In December 2014, internet phone company Skype debuted a feature that translates conversations between English and Spanish in near real time. Stanford University's PaleoDeepDive "machine reading system" has equaled scientists at extracting and organizing data from scientific journals. And IBM is turning its Watson AI into a cloud-based utility that will dispense smarts the way an electric utility provides power. Oncologists at New York's Memorial Sloan Kettering Cancer Center currently use Watson to improve diagnoses and treatment.

THE INTERNET OF THINGS. According to the 2013 McKinsey & Company report *Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy*, "More than nine billion devices around the world are currently connected to the Internet, including computers and smart phones. That number is expected to increase to between 50 billion and one trillion in the coming decade." The trend is proliferating. Take ever-smaller, more sophisticated sensors and microelectromechanical systems; embed them in appliances, buildings, and clothing; and imbue them with cloud-based artificial intelligence. "Everything will have its own IP address and will communicate with everything else," predicts Jim Mellon, UK money manager and author of *Fast Forward: The Technologies and Companies Shaping Our Future*. The result is not just a world of smart devices but a *smart environment* that understands the spoken word and behaves in ways that simulate volition and judgment.

THE DISRUPTERS AND THE DISRUPTED

3D printing is being pioneered by a range of companies, from tech giants such as Hewlett-Packard and Autodesk to newcomers Stratasys, 3D Systems, and MakerBot. But most other AI and robotics breakthroughs are either emanating from or being snapped up by established players. "The best virtual reality company is owned by Facebook," says Mellon. "Google recently bought Boston Dynamics, probably the best robot company in the world apart from FANUC in Japan. Now they're a leader in robotics as well as drones, bioinformatics, and wearable devices." In effect, he contends, one could think of Google as a very long-term robotics/AI fund.

"Automation is going to take over every single repetitive task," predicts Louis Gave, co-founder of Hong Kong–based research firm Gavekal. The factories, hospitals, and restaurants that make the transition most smoothly will tend to survive and thrive. Those that don't will be stranded on the wrong side of history.

An automated future poses particular problems for emerging market economies that now enjoy a cheap labor advantage. With 3D printing, Mellon points out, "Manufacturing is going to be localized. Proximity to the customer will become more important than hourly wages." The implication is that emerging market bonds and equities, big winners in the previous decade, may struggle to hold their gains.

Another at-risk sector is financial services. Peer-to-peer lending and various forms of crowdfunding are encroaching on the business/consumer loan industry. Bitcoin, a digital currency that operates outside the traditional banking system, is seeing transaction levels double every eight months. Apple's new iPhone-based payment system, Apple Pay, accounted for 1% of grocery chain Whole Foods Market's transactions in only its first 17 days of existence.

"The financial industry's safe and steady margins will come under heavy pressure, rendering a lot of capital (both human and monetary) deployed in the current infrastructure obsolete," predicts Gave. [For more on trends shaping the future of the financial services industry, see the "A View to the Future" interview with Tom Brown, global head of investment management at KPMG, on page 32.]

DIGITAL AND REGENERATIVE MEDICINE

For most people, the doctor visit hasn't changed in decades, with the same physical waiting rooms; same paper forms to fill out; similar slow, expensive tests; and only marginally effective treatments. But a transformation is coming from multiple directions.

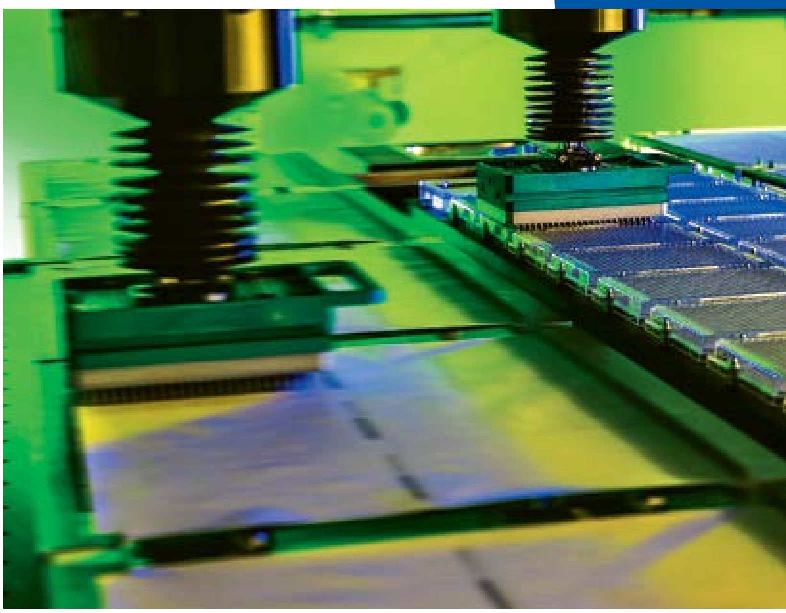
- **DIGITIZED RESEARCH.** "Instead of going out in nature and finding a tree frog that has a cure for some disease, [today's scientists] design 100,000 chemicals and test them in the lab to find one that works," says Daley. The combined result could be a tidal wave of powerful new treatments, which are in various stages of development.
- **CHEAP, FAST TESTS.** "Many of today's medical tests involve culturing cells in a lab for two or three days to get enough genetic material to analyze," says Daley. Next-generation tests will happen in real time. "Right now, testing for sepsis [a common, extremely dangerous blood infection] takes two days and costs $2,000. But Nanosphere [a startup in Northbrook, Illinois]—one of 20 publicly traded companies focused on advanced molecular diagnostics—can test for sepsis in 2.5 hours for $70."
- **SYNTHETIC BIOLOGY.** The emerging ability to mix and match genetic material (or build it from scratch) to create new life forms is allowing researchers to attempt such things as harnessing specially designed bacteria to mass-produce next-generation antibiotics, vaccines, and cancer drugs.
- **GENOMICS FOR THE MASSES.** Sequencing the first human genome required $3 billion and 13 years. A decade later, the $1,000, 24-hour genome is in sight. The possibilities opened up by widely available genomics include the ability to determine which cancer drug will work on which type of cancer, something today's oncologists can only guess at.
- **STEM CELLS.** Undifferentiated cells that can become anything from neurons to entire new organs were discovered more than three decades ago. But only in the past couple of years has it become possible to make them follow instructions. Scientists at Columbia University are now growing cartilage to repair damaged joints that currently require surgery, and the Harvard Stem Cell Institute is growing pancreatic beta cells, the insulin-secreting cells that are not functioning in Type 1 diabetics. Injected into diabetic mice, the cells cure the disease in fewer than 10 days.

THE BUSINESS IMPACT

"Hundreds of biotech companies are now chasing cures for diseases that 10 years ago, we couldn't even treat," says Daley. And faster, cheaper tests are announced on a weekly basis. This is great news for humanity but challenging for investors trying to identify eventual winners.

Income streams from treatments that manage but don't cure diseases will evaporate as true fixes emerge. Today's high-margin tests will be supplanted by cheap, mass-market versions. Medical devices like artificial joints and insulin pumps will be replaced by regenerated tissue. Repetitive hospital tasks and basic diagnosis will be automated. "Medicine is going to be fundamentally disrupted," predicts Daley.

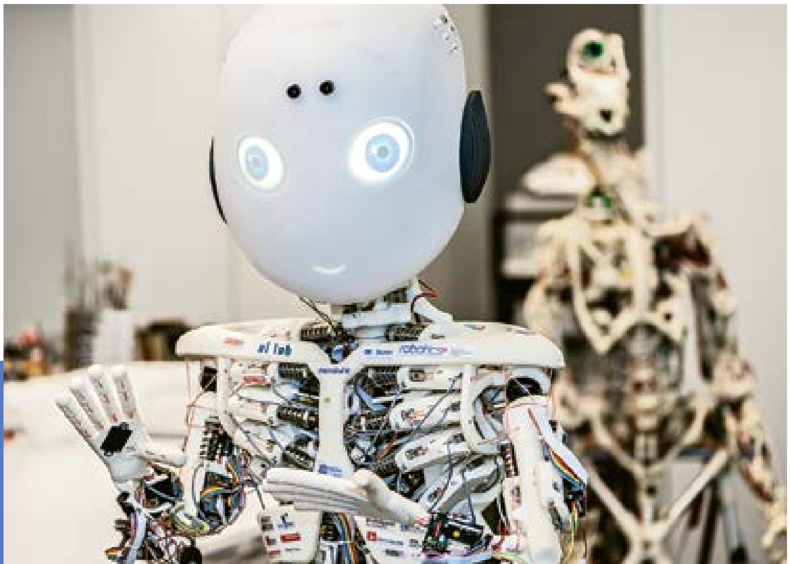
This microarray is a high-volume throughput robot that is used to prepare arrays with hundreds of different genes, proteins, or chemical compounds for testing. Microarrays have been instrumental in new genomics and proteomics research, revolutionizing drug development.



INVESTORS AND DISRUPTION

For investors thinking about the implications of the coming wave of creative disruption, the future can seem a daunting prospect. But some general guiding principles may be helpful.

ASSUME A FEW MORE DOUBLINGS. "[Some exponentially improving technologies] will be a thousand times more powerful in a decade, a million times more powerful in 20 years," says Ray Kurzweil. The biggest opportunities and threats will come from those future capabilities rather than from today's emerging ones.



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ROBOY, a next-generation humanoid robot developed by the University of Zurich's Artificial Intelligence Lab in 2014, combines multiple cutting-edge technologies, including the use of 3D printing to make "body parts" that can function in a more realistically human way.

ASSUME AUTOMATION. As venture capitalist Mark Andreessen famously noted, "Software is eating the world." Virtually every field will be automated to some extent in the coming decade. The winners will be the companies that facilitate the process and/or successfully embrace it.

AVOID (OR SHORT) STATIC INDUSTRIES. "The less a business has changed over the last 30 years, the more it's about to change," says Daley. "Publishing, for instance, didn't change for decades, and in a single decade has been completely transformed." Now it's the turn of manufacturing, health care, and most service industries.

OR PLAY BOTH SIDES OF THE PROCESS. "Existing markets don't disappear overnight," says Daley. "So, one strategy is to invest in the growing threat and the potential victim and let the market sort it out. Had you owned both Netflix and Comcast at the time of Netflix's IPO, you'd be doing just fine today."

BE A LITTLE PARANOID. "Know where a company's margins are made, and assess every potential threat," says Daley. "Regularly survey the landscape of new innovations, even some of the goofy-sounding ones, and ask yourself whether or not it could disrupt your model."

To take just one of myriad possible examples, the recent quantum leap in connectivity allows the customers of Boston car-sharing firm Zipcar to use their phones to find, reserve, and unlock the company's cars and then pay based on miles driven and time spent in the car. Right now, this is just a tiny blip on the car rental industry's radar screen, but five years from now, who knows?

UNDERSTAND WHAT IS *NOT* DISRUPTIVE. Electric vehicles, for instance, "are additive, not a substitute for internal combustion engines," says James Albertine, energy analyst with investment firm Stifel Nicolaus in St. Louis, Missouri. And there are no more Teslas in the pipeline because a big part of the company's advantage is derived from the low price it paid General Motors for its main production plant. "They had a very attractive entry point, just as GM was restructuring. That's not going to be easy to replicate," says Albertine.

NOTICE OLD FIRMS WITH NEW TECH. "Some of the old dinosaurs might have things that completely transform their growth prospects," says Mellon. Hewlett-Packard's memristor, for instance, "can compress vast amounts of data in portable format, 100 terabytes on a phone. It will be enormous." Combine memristors with 3D printing, and HP might look shiny and new a decade hence.

WATCH THOSE NETWORK EFFECTS. Also known as the law of increasing returns, network effects are caused by the tendency of a network to become more valuable and powerful as it gains users. In an interconnected world, predicts McKinsey & Company in its previously cited report, cloud-based AI services will be subject to this law: "The more people who use an AI, the smarter it gets. The smarter it gets, the more people use it. … Once a company enters this virtuous cycle, it tends to grow so big, so fast, that it overwhelms any upstart competitors." For an idea of the investment implications, think Google versus the other search engines.

NOWHERE TO HIDE

The technologies highlighted in this article are just a sample of what's coming. The McKinsey report lists *a dozen* disruptive technologies and business models that it estimates will have a cumulative impact—wealth created and destroyed—of tens of trillions of dollars. In other words, every corner of the global economy is getting an upgrade, and no place is safe.

John Rubino, a former financial analyst, is a freelance writer and author of several books on investment topics.

THE ALGORITHM WHO ADVISED ME

Is the wealth management business ready for artificial intelligence?

By Rhea Wessel

With so-called robo-advisers taking over process steps in the wealth management business, will investment advisers have to radically change their business models?

Robo-adviser services were estimated to have global assets under management of $14 billion by the end of 2014, with 83% of that total managed by robo-advisers in the United States, according to MyPrivateBanking. Within five years, that number could reach $255 billion globally, not including assets that are invested with the recommendation of an automated financial adviser but controlled by private investors (e.g., the so-called do-it-yourself investors).

The range of services differs from company to company, but generally, web-based robo-advisers automate elements of investment advising, such as basic advice, account aggregation, risk assessment, financial planning, rebalancing, tax optimization, and reporting.

Once a user has everything set up with an automated provider, the investor has (at least in theory) access to high-quality investment advice that may not be personal but is personalized algorithmically. Often, the investment vehicle provided along with the advice is a passive investment, such as an ETF.

"Robo-advice is a wake-up call for the investment management industry—in terms of pricing, creating a great customer experience, and being fair to the end customer," says Srini Venkateswaran, a partner at strategy and general management consultant Marakon in New York who advises investment management firms on how to run their businesses.

Essentially, robo-advisers mean the empowerment of the investor, according to a report by MyPrivateBanking GmbH titled "Robo-Advisors: Threats and Opportunities for the Global Wealth Management Industry." Previously, investment managers had all the expert knowledge, and people went to their wealth advisers for help. Now, the clients are getting their hands on the expertise. "All the professional knowledge is getting put into software," says Steffen Binder, research director at MyPrivateBanking.

ADVISING INTERRUPTED

Indeed, robo-advisers are already shaking up the "traditional" industry, and their initial success is making established players rethink their approach. Millions of people currently lack traditional advisory services, and younger people in particular are likely to be more comfortable using robo-advisers for their investing needs rather than dealing directly with a person.

Another risk traditional players face is losing out to startups that say they can get the same or better investing results as professional managers—for far lower fees—by automating parts of the advising process and supplying clients with low-fee, passive investments. They say an algorithm is less biased than a human adviser and will help the investor keep emotion out of the investing equation.

One of the traditional advisers watching developments closely is Charles Lewis Sizemore, CFA, CIO of Sizemore Capital Management in Dallas, Texas. Sizemore does not rule out that he might offer his clients (or at least some of his clients) forms of automated advice, perhaps through a white-labeled robo-adviser that he can brand as his own. Such a tool would allow him to take on smaller clients that might be unprofitable at first because of overhead expenses.

In October, Betterment, one of the robo-advisers with the most assets under management, launched Betterment Institutional for advisers like Sizemore. And Charles Schwab & Company has said it will offer free, web-based advice starting in 2015 for investors with $5,000 or more through Schwab Intelligent Portfolios.

Already, Sizemore refers investors who cannot meet his minimums to his Covestor portfolios, giving them the opportunity to "copy-cat" his investment moves at a much lower minimum. Advisers using the Covestor platform split the management fee with Covestor, and they also have to be willing to publish their most recent trades, which potential investors can view for free.

Sizemore says he's not worried about giving away his investment expertise for free by opening up his trading strategy on Covestor. In fact, he welcomes it. "Allowing would-be clients to see my latest trading moves builds trust and credibility," he says. "My approach may seem like it undermines my own business, but it actually boosts it by allowing a potential client to get comfortable with my investing style before committing a larger piece of their nest egg."

NAYSAYERS

As investment advisers take stock of the implications of the new technology, it's tempting to shrug it off and say there will always be a need for the human touch or to point to the inability of computers to calm panicked investors during a crash. Especially during the needs-analysis phase, research shows that people want to work with humans, according to Kira Dubas, an associate principal at Marakon.

And advisers may be able to learn lessons from the market disruption that will help their firms. "Investment advisers need to improve the experience and provide more online interaction," says Dubas. "People are used to conducting more parts of their lives online. Larger firms need to find ways to get around the weight of incumbency to improve the experience."

For one, automated advisers simplify and shorten the onboarding process, which can still take days or weeks with a traditional adviser. The advice may be cheaper and more tailored than with traditional advisers. And robo-adviser websites and platforms may offer more opportunities for investors to discuss strategies with peers and hear each other's advice, an important part of any transaction for many digitally savvy people. (Some research has shown that digitally savvy people place more trust in their peers than in institutions.)

THE UPSIDE

On the sunny side, some observers say that automating certain steps in the advisory process will free up advisers for more interesting and challenging work and bring investment advice to the mass-market retail investor who now gets no such direction.

For example, FutureAdvisor, a San Francisco-based firm that uses proprietary algorithms to provide free asset allocation advice, is targeting "the rest of America which has never had financial advice before and deeply needs it," in the words of spokesman Chris Nicholson. The growing firm had $13 million of assets under management in late 2013 and increased the total to $300 million by late 2014. Beyond the free algorithmically generated advice, for the actual investing, FutureAdvisor's customers are asked to upgrade to a premium account in which FutureAdvisor aggregates funds from existing brokerage accounts and executes the trades for customers. FutureAdvisor fees are 0.5% of assets under management. According to the MyPrivateBanking report, automated advisers' fees range from zero to 1.3% of assets under management.

Ian McKenna, the director of the London-based consulting firm Finance & Technology Research Centre, challenges the idea that robo-advisers are uninteresting for sophisticated investors with larger portfolios and complex investment cases. On the contrary, he says high-net-worth individuals are among the first to adopt new technologies and expect their advisers to do the same. A new report by Capgemini and RBC Wealth Management found that 65% of high-net-worth individuals expect to run most of their wealth relationships digitally in five years.

McKenna recommends that advisers work to embrace robo-type advising and see how they can use it to their advantage, instead of pitting themselves against the new technology. "Wealth management has been pretty much unscathed by new technologies compared to other industries," says McKenna. "We believe that there is strong evidence, led by what's going on in the US, that this is not actually going to be the case for much longer." [For more about the impact on wealth management, see "The Future of Automated Advice" on page 39.]

COMBINING TECHNOLOGY AND ADVICE

Don't expect robo-advisers to hold back on any bells and whistles in making the technology lifelike. Already, web users are accustomed to seeing comic-figure avatar faces wearing headsets who pop up and offer customer service, help paying a bill, or other kinds of support.

When people balk at the idea of a machine providing effective advice, they usually say that computers cannot pick up on subtle clues from the client. The field of facial biometrics is working on this very problem. Some companies, such as global market research firm GfK, have the ability to measure human emotion through facial movements using a webcam and software. The nonverbal information can be evaluated to provide a fuller psychological profile. Such technology is frequently used in advertising and allows marketers to evaluate, for example, the emotional impact of their video ads.

With companies combining facial biometrics with financial technologies that provide advice—and delivering the results with financial adviser avatars—users may actually have the feeling they're getting personal advice from a human instead of a computer.

"It's all about changing the fundamental operating model of the financial advice business," says McKenna. "Realistically, there will always be a need for help and guidance. The question is how you deliver it."

Rhea Wessel is a freelance journalist in Frankfurt.

The Future of Automated Advice

In a brief interview, Ian McKenna, director of the Finance & Technology Research Centre consulting firm in London, shares his insight on the rise of algorithmic advisory services and the future of wealth management.

How can investment advisers use robo-type tools to their advantage?

First, I'd like to say that the robo-adviser term is a really negative description of the tools. It seems to have been coined by some people in the adviser community in the United States who were perhaps fearful of the potential impact of what we'd call automated advice or an algorithm-based approach to advice.

To answer your question, advisers need to look at how their existing business propositions are constructed to see how automated advice can best fit in. Are there elements of your operation that are time consuming and less efficient? Where can costs be reduced and efficiency increased by working with more technology, particularly with algorithm-based solutions?

What's wrong with the term robo-advice?

The term robo-advice is very pejorative. It's a negative way to approach these changes. We should really be looking at where these tools can help us work smarter and more effectively.

If you look at the research from scholars at Oxford University, you'll see that financial advisers are at lower risk from new technology compared with other professionals, like insurance underwriters, whose work is largely data driven.

People say that emotions are taken out of the equation with automated advice. But this won't always be the case. There are significant advances being made in the field of machine measurement of human emotion based on facial biometrics.

What else can we expect?

Many technologies are being developed in parallel. Individually, they would not drive that much change. But as technologies converge, the change will be radical and quick. Machines already measure human emotion with facial biometrics. Other technology can read how honestly people are answering questions by listening to the stress in people's voices.

You could set up an avatar on screen who is talking to a consumer, whose voice is being analyzed to measure emotions and the truth—or otherwise—of what people are saying. It's multiple forms of input that can be analyzed and brought together to form a fuller picture of the customer. In the education field, there's technology being developed that can monitor how much attention the person is paying to what's on the screen. You could use this to understand whether the consumer was comprehending the financial advice being put in front of them. If the information was too complex, the machine could replay it in a simpler form. You end up with a responsive tool that can even be packaged in the avatar of your choice, maybe your favorite movie star.

What's going on in the UK in automated advice?

The cost of actually providing face-to-face advice is very expensive, regardless of where you are regulated. In the UK, face-to-face advice is quickly becoming unaffordable for anyone but the wealthy. At the same time, many countries see the UK's regulatory advising regime as the "gold standard" in terms of consumer protection. That brings up another point in the debate. Sticking to a rigorous and complex regulatory regime around advising investors can actually be easier with technology, since it is an environment that is very rules driven.

Anything else?

There's significant evidence to suggest that one of the things consumers like about online advice services is that they don't feel obligated to buy a product. People are far more comfortable talking to a machine and getting information. They don't feel guilty because they've wasted a salesperson's time.

There is also evidence in areas like medical underwriting that people may be slightly more honest when they think they are talking to a machine. They are less likely to hide things that they might otherwise find private if they're convinced they're talking to a machine.

THE TERM ROBO-ADVICE IS VERY PEJORATIVE. IT'S A NEGATIVE WAY TO APPROACH THESE CHANGES. WE SHOULD REALLY BE LOOKING AT WHERE THESE TOOLS CAN HELP US WORK SMARTER AND MORE EFFECTIVELY.

If automated advice is offered in your territory, you've got to understand what it costs, what the services offer, and what they don't offer. Look for the gap between what the customer can buy as an automated service and the value-add the adviser can bring. It will come down to cost, the product offerings, and ancillary services.

What's your outlook for the investment advice market itself?

Some people say that automated advice startups will get gobbled up by the name-brand advisers. But I believe new organizations will emerge. The top five players in wealth management in 2030 will be names we've not yet heard of. They don't even exist as organizations today. They'll be lean startups that are unencumbered by the legacy costs that drag back the financial services industry.

How can a startup scale up globally, given diverse regulatory environments and different languages?

Regulation is globalizing all the time. Regulators are talking to each other. If you look at the core principles of financial planning and wealth management, it doesn't matter what your race or your religion is. You want the same thing for your family and loved ones.

There are enormous global banking software companies, though you still have local regulation in banking. I predict there will be a global financial advice and wealth management software industry in the next 10–15 years. Financial services businesses are going to be disturbed and disturbed radically. The best thing for financial services firms to do is to set up their own incubator and give that incubator the objective of actually destroying their own classic business. But few organizations have the courage to do that.

African HORIZONS

Develop a strategy for Africa now before it's too late, say two experts on investing in Africa

By Nathan Jaye, CFA

An advisory council appointed by US Secretary of Commerce Penny Pritzker to expand business opportunities in Africa is now in full swing. The President's Advisory Council on Doing Business in Africa (PAC-DBIA) includes two CFA charterholders with deep knowledge of Africa. Melissa Cook, CFA, is founder and managing director of African Sunrise Partners, a New York-based investment strategy firm focusing on Africa. Walé Adeosun, CFA, is founder and chief investment officer of Kuramo Capital Management in New York City, which provides investment management services to institutional investors focused on alternative assets in emerging and frontier markets. In this interview with *CFA Institute Magazine*, they discuss the challenges and opportunities of investing in Africa, the growing importance of Africa for investors and the companies in which they invest, and why "the opportunity cost of delaying is higher than it may seem."

Why is PAC-DBIA happening now?

COOK: President Obama's policy in the past couple of years has been to reorient US engagement in Africa away from foreign aid and toward business development. The idea is that productive investment that results in job creation will foster economic [growth] and then political stability in Africa.

The president hosted the United States–Africa Leaders Summit in August 2014 in Washington, DC. He then issued an executive order to create an advisory council. Secretary of Commerce Penny Pritzker has been charged with bringing the private sector together to provide good perspective and advice for the president as to how to better advance the administration's goals.

This group is really serious. The secretary of commerce is extremely engaged. It's a very important priority for her and for the president. It's encouraging to see broad-based support from the White House and surging interest from investors and companies.

ADEOSUN: The program has tremendous potential. US businesses can participate in the growth of the African continent by investing in African companies that end up buying equipment from the US. While doing so, they'll create new jobs in the US and also provide capital to African countries. Since the president started this initiative a couple of years ago, there has been real commitment to the steps he initially laid out. When the president went to Africa two years ago, I was invited to join the trip in Dakar and Johannesburg. The president mentioned that his treasury secretary and commerce secretary would be coming to Africa after him, and they did.

What are the investment goals of PAC-DBIA?

COOK: If US institutional investors decided today to allocate 2% of their funds to Africa, the continent would have a hard time absorbing that much capital. There's a push to develop capital absorption on a few levels. One is to support the development of local stock markets. Local exchanges are small but growing and becoming more professional and technically sophisticated. Another is to create a dialogue between African governments and global investors about what is needed in order to attract and retain more capital. Investors and companies need clear and predictable regulations. They need rule of law. They need deals that are bankable, and they need companies that can absorb the capital. The PAC-DBIA is working to develop recommendations for policy changes or steps the US government can take to accelerate the process.

What will you recommend to the DBIA?

ADEOSUN: I want to help get large pools of US capital—I'm talking about big pension plans, endowments, and foundations—to understand that Africa provides a lot of opportunity for growth and they can participate in that growth by providing capital.

COOK: I believe that there is too little knowledge in the investment community about what's really happening in Africa and what the opportunities actually are. Looking at the corporate side, I see companies making what I would describe as "accidental decisions" about Africa based on what they hear anecdotally, not based on facts. My recommendations involve removing barriers that might prevent US companies from operating on the continent—not by compromising our standards but by working with African governments to figure out how to reduce corruption and improve the investment climate.

With improved knowledge and perspective, institutional investors can put pressure on companies they own to have a deliberate Africa strategy. This is essential to the long-term competitiveness of US firms. If US companies avoid Africa because they think the markets are too small, it's too early, or business in Africa is too risky, they're leaving the door open for global competitors to solidify market share on the continent and in other parts of the world. Once that happens, it will be very difficult for US firms to break into Africa's fast-growing markets. African economies may look small today, but growth is rapid and the opportunity cost of delaying is higher than it may seem.

What do you mean by "accidental decisions"?

COOK: Perhaps somebody on the board has a golf buddy who heard that Nigeria is too dangerous and difficult, so the board has decided they're not going to investigate opportunities in Africa's largest economy, a country of nearly 170 million people. I've actually had Fortune 100 companies say that to me: "We can't do business in Nigeria. One of our guys heard you can't go there."

To me, if you're on the board of directors of a publicly traded company, it is bordering on fiduciary negligence to make decisions based on that type of "analysis." Companies that might commission studies and do serious research on almost every other market in the world seem to believe that Africa is just a no-go zone and that it's OK for them not even to think about their strategy in Africa.

ADEOSUN: But many countries are thinking about it already. We're seeing the presence of many Chinese and Korean companies in Africa. The largest phone company in Nigeria right now is a Chinese phone company called Tecno. Its strategy is to grow the business in developing countries like Nigeria and then use the capital from that experience to come and compete with companies in the US.

COOK: Look at the telecom equipment space, where Huawei and ZTE are the big Chinese players. People used to think Huawei was not to be taken seriously because it [allegedly] was shipping routers with Cisco manuals in the box. Now look at the market share that these companies have in Africa. They're using African markets to gain experience, and they're reinvesting cash flow into research and development to become more competitive in Europe and other parts of the world.

Melissa Cook, CFA

Why is Africa attractive now?

COOK: Many countries are benefiting from improved governments. They've opened up major parts of the economy to private sector investment. Young people are going to work and driving rapid innovation. Some of the continent's growth is driven by resources sales, so falling oil and copper prices hurt in several countries. But when you visit many countries, the growth that's taking place is easy to see and it's quite broad based. Reforms in power, agribusiness, banking, and communications are setting the stage for strong economic performance.

AFRICAN ECONOMIES MAY LOOK SMALL TODAY, BUT GROWTH IS RAPID AND THE OPPORTUNITY COST OF DELAYING IS HIGHER THAN IT MAY SEEM.

ADEOSUN: I don't even think it's so much resource based. I think it's really consumer based. There's an emerging middle class and a ton of people in the cities who have much more disposable income than we think they do. All of this is a result of the political stability that has occurred over the last 15 to 20 years as more governments in Africa have moved to a democratic form of government, which has improved the overall governance, including improved regulations and privatization of companies.

In 2000, when licenses were going to be issued in Nigeria for mobile operators, South Africa's MTN [cellular network company] estimated it could establish 2 million Nigerian mobile phone lines. Nigeria had only 400,000 land lines at the time. Today, Nigeria has 120 million mobile lines. MTN Nigeria is probably one of the most profitable businesses on the continent, with revenues of US$5 billion and close to 60 million subscribers. They have EBITDA [earnings before interest, taxes, depreciation, and amortization] margins of about 60%. Where in the world do you get EBITDA margins of 60%?

It can't be that Nigeria has 60 million wealthy people. Rather, it's people who are not wealthy but have more disposable income than we think. That's really where the phenomenal growth on the ground is. Recently, the *Wall Street Journal* wrote that of 200 multinational companies, the top country they were all interested in is Nigeria.

COOK: There are more than 700 million mobile phone users across the continent. When I tell my clients that—people who don't know much about Africa—they can't believe it. There's so much power in this mobile phone base now. Even the most basic phones can transact mobile money. Governments can deliver services like tax collection, licensing, and voter registration via mobile phone. You have applications for education, health care, commerce, local information, and entertainment. The explosion of innovation that's going on thanks to technology is nothing short of revolutionary.

Companies at the 2014 US–Africa Business Forum announced more than US$14 billion in investments in Africa. Which companies are among the leaders?

COOK: GE is leading the pack with major power-sector investments and other areas like aviation, transportation, and health care. Coca-Cola has been developing local farm capacity so it can source inputs locally. This strategy is a win-win, as it creates local jobs (and new consumers) while helping the company manage costs and currency exposure. IBM has a large research and development center now in Nairobi. Those are a few examples.

Why is having a local network in Africa so important?

ADEOSUN: In Africa, it's very, very critical that you identify strategic partners on the ground who can help you navigate the landscape. While governance and regulations are improving, things are not the same as in developed markets. Having a local network is so critical—it leads you in the right direction and helps you avoid the minefields. You shouldn't underestimate the power of having a local network. Also, there's not a very extensive credit system in Africa, so how do you vet people? That's where the local network comes into play.

COOK: From a research analyst standpoint, back in the days before investor relations departments offered guidance for earnings, you had to go out and actually figure things out for yourself. Africa is like that. You have to go to countries regularly; go to the stores; visit the companies; see the factories, the roads, and the airports; and see the consumer. You have to go into informal markets and look at what people are buying. And then you have to go back six months later and see what has changed! There's no substitute. It's the only way to understand what you're actually investing in.

How do you develop that local network?

ADEOSUN: It takes time. Melissa has been traveling in Africa the past seven years. I have a natural network since I went to high school (boarding school) in Lagos, Nigeria. So I have a lot of peers as leaders of corporations or in government. Everything is a phone call away for me. But in the absence of that, it's spending time, as Melissa has done over the years.

COOK: I've been there 30 times in the past seven years—to 13 countries so far.

What are the biggest risks of investing on the continent?

ADEOSUN: I'm not generally worried about political risks. If you invest in China, there is a concern your businesses could be nationalized in one day, given the regime. Africa tried that in the 1960s and 1970s with minimal success. I don't think you have to worry about that in Africa, as most African countries have moved toward a democratic form of government. Nationalizing business is not the way to go, and nobody's practiced that, except for Robert Mugabe in Zimbabwe. I don't see any other African countries doing anything like what Argentina just did.

Africa is a lot about risk perception. One of the things President Obama is doing is lowering the risk perception in Africa and the associated risk premium. People should understand that this lowering of the risk perception isn't very different from what has already happened in China, India, and Latin America. The risk premium should not be so high for Africa. It's high right now because risk perception is high.

What kind of return on investment are you looking for?

ADEOSUN: We're looking to make returns similar to most frontier markets. In most of the investments that we make, which is mostly private equity, we're looking to make three times our money back. I think that's fair for investments in frontier markets.

What are the main investment vehicles?

ADEOSUN: Most of the opportunities are in private investment. But last year, we saw a wave of countries issue sovereign bonds for the first time (at very attractive yields) that were largely gobbled up by American investors. These issues were three, four, or five times oversubscribed. You can invest in the equity markets, but the equity markets are not very big. If you include South Africa, the market cap of Africa is about US$1 trillion overall, with South Africa accounting for close to 80%. And it's not very liquid. That's why I say the bulk of the opportunity is still in the private investments. But there are also real estate and infrastructure opportunities that will develop out of public–private partnerships.

COOK: I visit local stock exchanges when I travel. They realize that there needs to be broader local retail and institutional participation. You're seeing strong African companies that might've said in the past, "Oh, we don't want to be public. We don't want the disclosure, and we can fund our own growth." They're now looking at accessing capital markets. Many local companies, particularly in East Africa, are saying, "We need to be Africa's multinational companies. We cannot do that as a private company without the right structure and access to cheap capital." I encourage my clients to take a long view and look at these private companies, understand the drivers of the main segments of each economy, and think about when the time comes that investors can get access to larger chunks of African economies—how are they going to position their portfolio?

How important are the demographics right now?

COOK: Extremely important. Not only do you have young people coming into the work force, but you've got technology, which is much more easily adopted by young people. So there's a demographic dividend if the governments can figure out how to create jobs. It's a demographic time bomb if they don't.

ADEOSUN: The other thing about demographics you're seeing is a whole wave of reverse migration happening. You're seeing a lot of Africans who grew up in Africa, came to the West to get an education, and are now returning home in droves.

How would you sum up interest among Western investors?

ADEOSUN: I think they're slowly moving in the right direction, but there's a long way to go. If you look at Africa's overall market cap relative to global GDP, it hovers around 2%–3%. You could make an argument that funds could have close to 2%–3% of their assets in Africa, but most funds are so far away from that right now. Most of the interest we see right now is from the endowments and foundations. Very few of the corporate plans and very few public plans are invested, but we are moving in that direction.

COOK: When I talk to money managers and institutions, people make the mistake of saying, "Well, it's only 2% of world GDP. It's only 2% of my company's earnings. It's not important enough, and it's too early." I keep stressing that it's not too early. You can't turn on a dime and become smart and knowledgeable about Africa. You have to understand it now. If you don't get in while it's still early, it's going to be very, very difficult, at least for corporate participants, to get in when things are more obvious to the rest of the world.

Walé Adeosun, CFA

So it's still the early stage now?

COOK: For major institutional investors, it's still early because the continent's ability to absorb capital is still limited. From a corporate standpoint, it's not early. It's actually almost too late in some cases. When you drive down the Mombasa Road in Nairobi from the airport to downtown, you will see every global brand of machinery, industrial equipment, vehicles, consumer goods, and agribusiness equipment. Everything is already there. There's a view in the US that Africa is a place of death and destruction and only a place for charity. That's unfortunately still a view widely held among the US corporate community, and it's just the wrong way to look at it. From a corporate investment and strategic standpoint, it's not early.

From an institutional investor standpoint, it's not too early to build knowledge and think strategically about not just your own capital in Africa but the companies that you own throughout your portfolios. Are they taking a smart, deliberate, strategic approach toward Africa?

If they're not—and I saw this when I used to cover China a number of years ago—you end up with US or European multinationals that face severe pressure from Chinese competitors. If you're not paying attention to that new competitive paradigm, you are taking major unintended risks in your portfolio. So I talk to people about the global perspective and how Africa fits into the competitive landscape.

PEOPLE SHOULD UNDERSTAND THAT THIS LOWERING OF THE RISK PERCEPTION ISN'T VERY DIFFERENT FROM WHAT HAS ALREADY HAPPENED IN CHINA, INDIA, AND LATIN AMERICA. THE RISK PREMIUM SHOULD NOT BE SO HIGH FOR AFRICA.

Nathan Jaye, CFA, is a speaker on intelligence and a member of CFA Society San Francisco.

Markets and the Economy: What to Expect in 2015

By Kurt Schacht, JD, CFA

In 2007, CFA Institute created the first of what is now known as its Global Market Sentiment Survey (GMSS). The annual survey—now global in scope and recognizing the importance of both developed as well as emerging markets and the interrelatedness of the international economy—has become a mainstay of our outreach to media outlets, regulators, and society members looking for insights into markets, economic issues, and market integrity for the coming year. This year, we invited the insights and perspectives of our nearly 130,000 global members for the 2015 GMSS, and we hope you had a chance to participate. Some of the highlights from the 2015 survey are notable indeed.

The investment pros among the CFA Institute membership predict a ho-hum year ahead for most asset classes. If you were hoping to make up more ground on your own or your clients' retirement nest eggs, stay alert. Although markets have had quite a run over the past several years—registering more than 40 new all-time highs in the US equity market alone—CFA Institute members expect very modest moves up in equity markets and interest rates over the course of 2015.

Those looking for the shine of precious metals returns may be disappointed in the year ahead, according to members. Meanwhile, the oil patch has thrown everyone for a loop recently. At the time the 2015 GMSS was conducted, Brent Crude was around $90 a barrel, and survey respondents expected this crude oil benchmark to remain in that range at the close of 2015. Given the recent downside gyrations, this prediction would ultimately require a major rally from the current level, which fell below $60 a barrel in January.

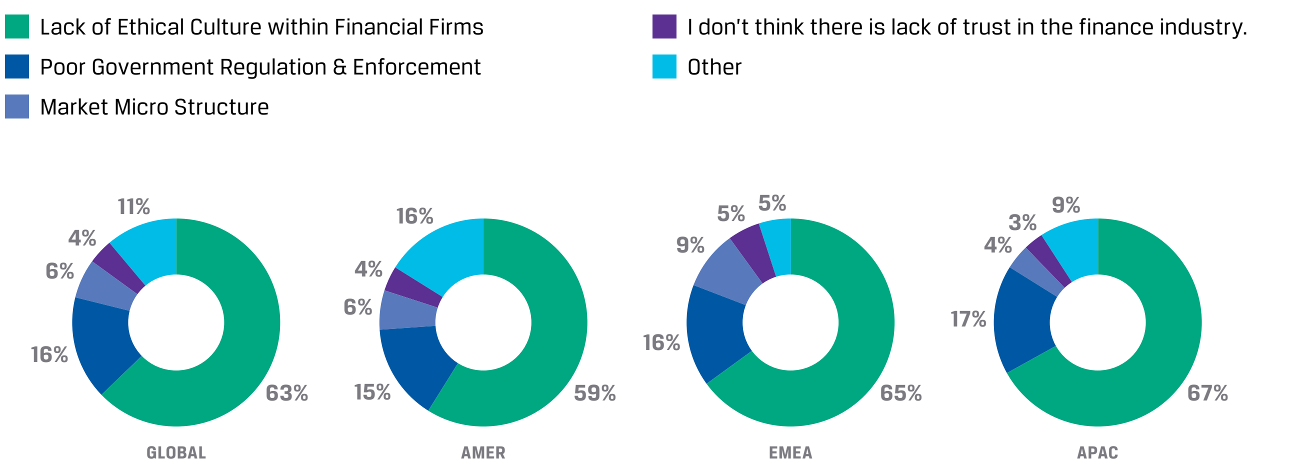
One of the more interesting predictions for the year ahead might be best described as "BRICs (Brazil, Russia, India, and China) revisited." India and Russia once again rank among the top four markets, bumping Japan and Germany out of the top echelon for 2015. One respondent commented that investors should expect a lot of volatility in 2015, but at the end of the year, things will be nearly flat across the board. Clearly, given what has happened with oil, the energy sector may be an outlier for those expecting a flat 2015.

Meanwhile, looking at the overall global economy for 2015, a couple of points emerge. On average, survey respondents expect that the global economy will grow only modestly (by 2%) in 2015. In fact, nearly 40% of respondents expect global GDP to grow by only 2%. This average falls considerably below the most recent World Bank forecast of 3.4% growth in global GDP for 2015 (a forecast the World Bank has subsequently reduced). Moreover, the key contributors to this prediction of weaker global results stem from continued economic difficulties in Europe, continued sluggishness in emerging markets, and a worrisome slowdown in China.

MARKET RISKS AND ETHICAL CHALLENGES

On a more edgy note, concern over trust and the reputation of finance practitioners remains a disturbing challenge. The world economy and market averages seem to have moved past the financial crisis of 2008, yet every week, we see reminders that the fault lines that shook the soundness, safety, and integrity of the world financial system are still active. In 2014 alone, we saw Bank of America's record

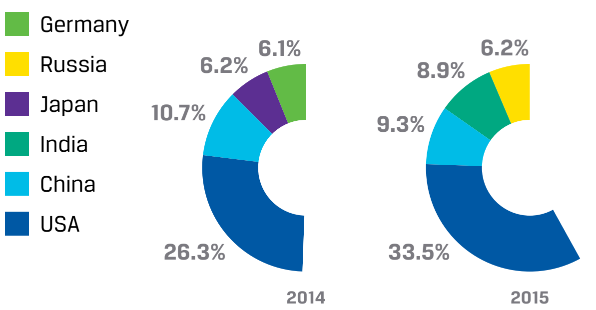
Factor Contributing Most to Lack of Trust in Finance Industry



$16.65 billion mortgage securities fraud settlement and the largest-ever insider-trading penalty in the SAC Capital Advisors case. Recently, the SEC and other regulators announced the investigation of improper fees charged by private equity advisers, and five major US banks agreed to pay $4.3 billion to settle charges of systematically manipulating the foreign currency markets, with criminal prosecutions still a possibility.

Many regulatory reforms motivated by the crisis and industry "bad actors" have taken hold, but they have not turned off the spigot of bad behavior. More enforcement cases and stiffer penalties to ensure that financial firms take responsibility for their behavior are critical, and the SEC has taken a step in the right direction, with a record number of cases and fines for enforcement actions in fiscal year 2014 (755 actions totaling $4.16 billion in disgorgement and penalties). Still, something is clearly absent as the parade of industry transgressions seems to march right along. In the 2015 survey, members cite better enforcement of existing laws and regulations as the most-needed regulatory or industry action to improve market integrity in their home markets in the coming year. The regulatory community cannot rest.

Top Picks for Equity Market Performance:



MORE ENFORCEMENT, BETTER ETHICAL CULTURE

As the 2015 GMSS underscores, regulatory enforcement alone cannot prevent the ethical failures that so influence the reputation of the industry and, at their worst, can lead to a full-blown financial crisis. In the view of CFA Institute, the financial services industry would be doing the public—and investment professionals—an injustice if we were to write off the litany of scandals as "just a few bad apples" or if, even worse, firms viewed the infractions as merely the cost of doing business. Firms must fix the behavior—not just view the fines as a traffic ticket and rush ahead to the next "minor" violation.

Not surprisingly, this survey, like previous surveys, cites lack of trust in the industry as one of the biggest risks to markets overall. Nearly two-thirds of our members (63% this year, up from 54% last year) say poor firm cultures are to blame. In other words, the trust problem stems as much from flawed firm culture as it does from ineffective government regulation and enforcement. Members say what undermines trust as much as anything is a continual flow of highly publicized frauds, such as insider trading and bogus financial reporting.

THE PATH FORWARD: WHAT'S NEXT?

Our efforts at CFA Institute to foster a more trustworthy profession and protect investors are an important example for the finance industry. Yet, despite all of our investor protection activities, educational training programs, and best-practice standards, the results of the 2015 GMSS suggest our work is only part of the solution. According to the survey, regulators and firms both share the burden of making improvements.

Four points about the role of regulators are key. First, globally, regulators and policymakers need to do a more effective job managing risk. Our members indicated that improved regulation and oversight of global systemic risk (28%) was the regulatory or industry action most needed in the coming year to help improve investor trust and market integrity. Feedback from different regions suggests that in the six years since the global financial crisis, the degree of cross-border cooperation between regulators with regard to detecting and mitigating systemic risks does not yet appear to be sufficient. Second, for the third consecutive year, members have said that local regulators need to step up their enforcement of existing laws and regulations. We believe this includes holding more individual finance practitioners accountable, not just firms. Third, public issuers must improve the transparency of financial reporting and other corporate disclosures. Finally, the global banking industry must do a better job managing risk, and it must be required to impair troubled credit holdings in a more consistent and timely way across the industry.

As for the role of financial industry firms, the survey highlights three areas. First, top management needs to more fully align compensation with investor objectives (31%). Second, managers should institute a zero-tolerance policy for ethical breaches (27%).

Third, firms must adhere to ethical codes and standards (21%). (CFA Institute recently announced that BlackRock, the world's largest asset manager, has joined more than 1,000 firms worldwide in adopting our Asset Manager Code of Professional Conduct, which outlines the ethical and professional responsibilities of firms that manage assets on behalf of clients. See the related article on page 47.)

In the end, all parties in the financial services industry have plenty to do to improve the behaviors and practices of professionals serving clients and customers. If you responded, thanks for participating, and if you missed responding to this year's survey, please join us next fall for the 2016 GMSS.

Kurt N. Schacht, JD, CFA, is managing director of Standards and Financial Market Integrity at CFA Institute.

KEEP GOING

View the 2015 Global Market Sentiment Survey: www.cfainstitute.org/gmss.

Follow the *Market Integrity Insights* blog: http://blogs.cfainstitute.org/marketintegrity.

Follow us on Twitter: @MarketIntegrity

BlackRock Adopts Asset Manager Code

BlackRock, the world's largest asset manager, has joined the ranks of more than 1,000 firms worldwide that claim compliance with the CFA Institute Asset Manager Code of Professional Conduct.

The Asset Manager Code of Professional Conduct (www.cfainstitute.org/assetcode) clearly outlines the ethical and professional responsibilities of firms that manage assets on behalf of clients. For investors, the code provides a benchmark of ethical conduct they should expect from asset managers and offers a higher level of confidence in firms that adopt the code. Ariel Investments, Janus Capital Management, JP Morgan Asset Management, Loomis Sayles, Morgan Stanley Investment Management, TD Asset Management, and US Bancorp Asset Management are among the firms that claim compliance.

"Investors deserve and should expect the highest level of professional conduct in the firms and individuals with whom they entrust their investments," said Rob Goldstein, BlackRock's chief operating officer. "Our clients entrust BlackRock to manage more assets than any other firm in the world; they are our No. 1 priority. Adopting the Asset Manager Code of Professional Conduct is one more demonstration of our commitment to placing the needs and interests of our clients above all else."

The Asset Manager Code of Professional Conduct is grounded in the ethical principles of CFA Institute and the CFA Program and requires that managers commit to the following professional standards: to act in a professional and ethical manner at all times, to act for the benefit of clients, to act with independence and objectivity, to act with skill, competence, and diligence, to communicate with clients in a timely and accurate manner, and to uphold the rules governing capital markets.

"Trust in the investment profession remains at risk, and it's a critical moment for investors and the future of the financial system," said Jonathan Boersma, CFA, head of professional standards at CFA Institute. "We applaud BlackRock and all firms that have adopted the code for displaying a steadfast and tangible commitment to professional ethics and putting investors first."

"Firms like BlackRock that actively demonstrate their integrity are the kind of industry leaders we need to advance the profession and shape a more trustworthy financial industry," added Michael Trotsky, CFA, executive director and chief investment officer of the Massachusetts Pension Reserves Investment Management Board and member of the CFA Institute Board of Governors.

DISCIPLINARY NOTICES

TIMED SUSPENSION

On 10 December 2014, CFA Institute imposed a **Five-Year Suspension** of membership and of the right to use the CFA designation on **Caley B. Perleberg (US)**, a charterholder member. A Hearing Panel found that Perleberg violated the CFA Institute Code of Ethics and Standards (2010) of Professional Conduct I(C)–Misrepresentation, I(D)–Misconduct, and III(D)–Performance Presentation.

In 2011, Perleberg was an affiliate member of CFA Institute and candidate in the CFA Program. He was employed as a portfolio manager in the trust department of Home Federal Bank in Sioux Falls, South Dakota. Perleberg became a CFA charterholder in 2013.

At Home Federal, it was well known that changes to asset allocations for customer trust accounts could be made only with the advance review and approval of the bank's Trust Investment Committee (TIC). In December 2011, Perleberg recommended to the TIC that the bank increase its allocations to alternative investments by 3% (to 15%), but the TIC did not approve this request.

Shortly thereafter, Home Federal employees began to suspect that, without telling anyone, Perleberg had begun purchasing securities to increase the alternative investment allocations before the TIC meeting. When Perleberg's coworkers and supervisors at the bank questioned him about this, he repeatedly denied that he had changed the allocations without permission. In fact, Perleberg made purchases changing the allocations both before and after the TIC meeting at which his recommendation was discussed but not approved. Home Federal terminated Perleberg's employment in January 2012.

The Hearing Panel also found that, while he was employed at Home Federal, Perleberg failed to make every reasonable effort to investigate, report, and remedy a suspected problem with the bank's reported performance results, despite repeated requests by his colleagues that he do so. As a result, Perleberg caused inaccurate, inflated performance figures for the accounts that he managed to be communicated to Home Federal's customers and TIC.

Finally, after Home Federal terminated him, Perleberg claimed that he was entitled to unemployment compensation by making false and misleading representations to the South Dakota Department of Labor and Regulation that he was not fired for intentional misconduct. During the Professional Conduct Program's investigation, Perleberg continued to make false and misleading statements regarding his changes to the bank's trust account asset allocations.

If you are aware of potential violations of the Code and Standards by a member or candidate, we encourage you to contact Professional_Conduct@cfainstitute.org.

Members seeking guidance in applying the Code and Standards to their professional activities should contact ethics@cfainstitute.org.

SUMMARY SUSPENSION

On 3 November 2014, CFA Institute imposed a **Summary Suspension** on **Kasemsante Gog Guevara Boonswang (US)**, a lapsed charterholder member, automatically suspending his membership and right to use the CFA designation. Boonswang was suspended for his failure to cooperate with a Professional Conduct Program investigation of an industry-related matter. Because he did not request a review, the Summary Suspension became a **Revocation** on 3 December 2014.

WARNING: The editor general has determined that reading this column could expose you to sarcasm, irony, and other forms of humor.

Are Investment Committees Obsolete?

By Ralph Wanger, CFA

As your career as a CFA charterholder progresses, your talent and discipline will provide you with an endlessly fascinating job, an occasionally increasing salary, and a reputation for leadership, wisdom, and virtue. Virtue leads to love of your community, including your college. Said college will be grateful for your generosity. Giving to charitable causes will be meritorious and embellish your reputation.

Before too long, your beloved alma mater will elect you as a trustee and assign you to the investment committee. At your first meeting, you will meet other trustees, some of whom you may already know. There will also be the president of the university, the CFO, and a consultant—all welcoming you. They will explain that the endowment is not only too small but also restricted to a multitude of specific projects by donor requests, so the liquid general fund is tiny. Even that amount is not as liquid as you wish, because the previous private equity investments produced a lot of privacy but not much equity. They are sure you can help them turn around a difficult situation; the university is counting on you.

What are the management principles—or biases, as I call them—that you will need?

You must consider the risk–return character of the endowment portfolio. There will be some problems. The fixed-income part does not work. The committee would like to (a) have 40% of the portfolio in fixed income and (b) make 8% on the total portfolio. But if your fixed income yields 3%, your stocks have to make 11.4% to get an 8% result (after fees). You don't think your stocks can make 11.4% over the long term, and no one else on the committee thinks so either. So, the committee chooses to jack up risk in order to get the desired return. The bond portion drops to 20%, and 20% is put into alternatives, a consultant-driven allocation that will use hedge funds to generate 6% (after fees) with low risk.

What do you give up in doing this? Three things. First, you give up liquidity. Your investments can be converted into cash only on a schedule that was picked by the hedge fund manager, not you.

Second, consider risk. You are taking more risk than your consultant tells you. The consultant is calculating standard deviations of the underlying hedge funds. Monthly standard deviations are low (and CAPM says that standard deviation measures risk), so what's the problem? But as you and I know, hedge fund risk is not captured by standard deviation. The only ways to jack up yield are by owning lower-grade paper or giving up liquidity. In 2008, we found out that there is no substitute for liquidity.

Third, the returns on the alternatives have not come close to their benchmarks—at least, not in my experience.

But the risk–return problems of the portfolio are not your real problem. What are the risks and rewards for you?

Your payoff matrix is asymmetric. If you run an aggressive portfolio and your success is notable, you will get a sincere handshake from the president of your school. But if you lose a bunch of money, there will be all kinds of trouble. You'll have to resign from the committee and the board, and your face will be in the newspaper accompanied by such words as "unwise speculation," "scholarships reduced," and "gormless clotpoll." Losing is 100 times as bad as winning is good.

So, the index fund was invented just in time to rescue the pension and endowment investment committees. Cautious mediocrity is the optimal choice. No one will ever again be called a gormless clotpoll.

The last bias on my list is the "paralysis system" of managing money. Form an investment committee of six, with each member serving six years so that every two years, the two most experienced are replaced by two newbies. It is hard to keep a consistent focus in such a group. The chairman will dominate the agenda, and the chairman will be thrilled if any of the other five members show up at all (forget about their actually having read the agenda). If anyone has the strange desire to change the portfolio, fine. But it takes five meetings of a committee to get anything novel passed, and if meetings are quarterly, what's the point? Your best investment ideas are unlikely to look very original and compelling after 15 months of delay.

This analysis leads to the conclusion that the investment committee is obsolete, and the entire investment process should be outsourced. The committee will get a quarterly update from the outsourced CIO and so be reduced to an amiable luncheon group. There will be career openings in this growing field.

Ralph Wanger, CFA, is a trustee of Columbia Acorn Trust.

Illustration by Robert Meganck