Observations on Financial and Technological Innovation “FinTech” Opportunities and Challenges

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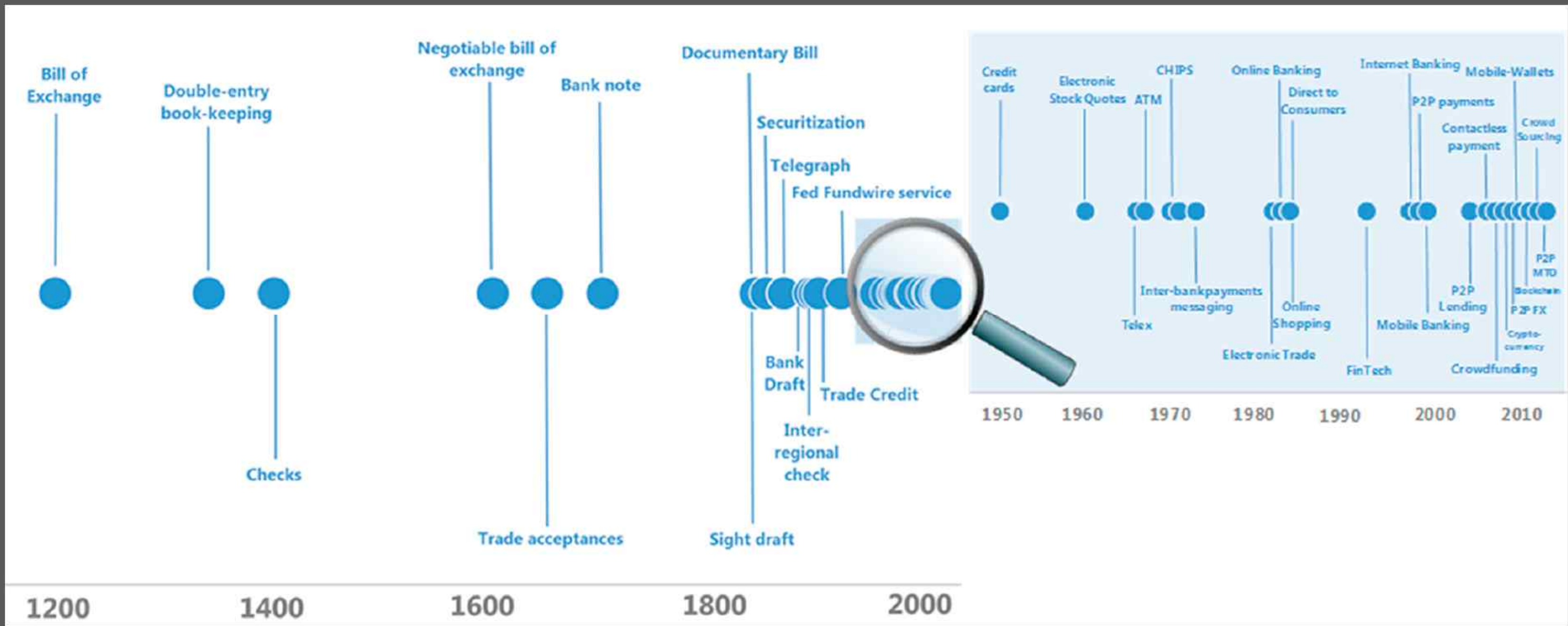
Accelerating Pace of Technological Progress in Financial Services
Rational Optimism for the Future of Finance in the Long Term



Sources: Arner, Barberis, and Buckley (forthcoming); Quinn and Roberds (2008); World Economic Forum (2015).

Technology and Finance : FinTech
Opportunities and Challenges for Financial Services

- Digitalization of financial services, “FinTech”, offers enormous global opportunities for new and improved services and substantially lower costs, with disproportional improvements accruing to those who are underserved by current standards.
- To realize that potential, innovation design based on “best practice” will not be good enough, and the important challenges to implementation must be addressed as part of the design.
- Successful realization of FinTech-enabled opportunities faces material challenges and there will definitely be financial-service industry “winners” and “losers” from its successful implementation.
- FinTech innovations will create disruptive challenges for users, providers, advisors and regulators of financial services but also create potentially significant opportunities for them as well.
- Will today’s technology disruptions to current practice of existing financial-service providers lead to their displacement or will it create enhanced opportunities for those established institutions that can adjust their business models to take advantage of FinTech?

A Central Challenge to FinTech
Trust is Fundamental to Financial Services

- Technology by itself is not sufficient to create trust. Transparency or verification is a substitute for trust.
- FinTech will succeed most easily in areas of financial services involving calculations, processing, payments and record-keeping where performance can be readily tested and verified, and in any activity in which transparency can be adequately substituted for opaqueness. Truly transparent services do not require trust. Services which can be fully verified need not be transparent and do not require trust to be adopted.
- FinTech with technology alone will be challenged in offering services and products that are “inherently opaque [i.e., cannot be made transparent] such as financial advice, solutions and many complex integrated financial products. Verification of investment performance is especially difficult. The only means of providing those services and products is through trust. Technology by itself is not a substitute for trust.
- FinTech requires a model and the data to populate it. The model selected will depend on the objectives of the selector. Models require abstractions from complex reality and the selection of the abstractions involves judgment—the “art of the science”. The quality of the data used in the model is critical. These judgments are opaque, extremely difficult to verify, and thus, inherently require trust by its users.

Verification of Investment Performance-- How Long Does It Take to Verify Superior Advice? How Much Outperformance or Underperformance is Required?

- Historical average return = 15% and standard deviation = 20%
- 95% confidence level of outperformance or underperformance [t-statistic = 2.0]
- What future realized sample returns would be needed to achieve significance?

PERIOD OF PAST HISTORY = 10 YEARS

Future Observation Period	Required Outcome
5 years	< -7% or > 37%
10 years	< -3% or > 33%
20 years	< -1% or > 31%

PERIOD OF PAST HISTORY = 30 YEARS

Future Observation Period	Required Outcome
5 years	< -5% or > 35%
10 years	< 0% or > 30%
20 years	< 3% or > 27%

Practical conclusion: investment performance cannot be verified based on portfolio returns alone

Trust is Essential for FinTech to Succeed

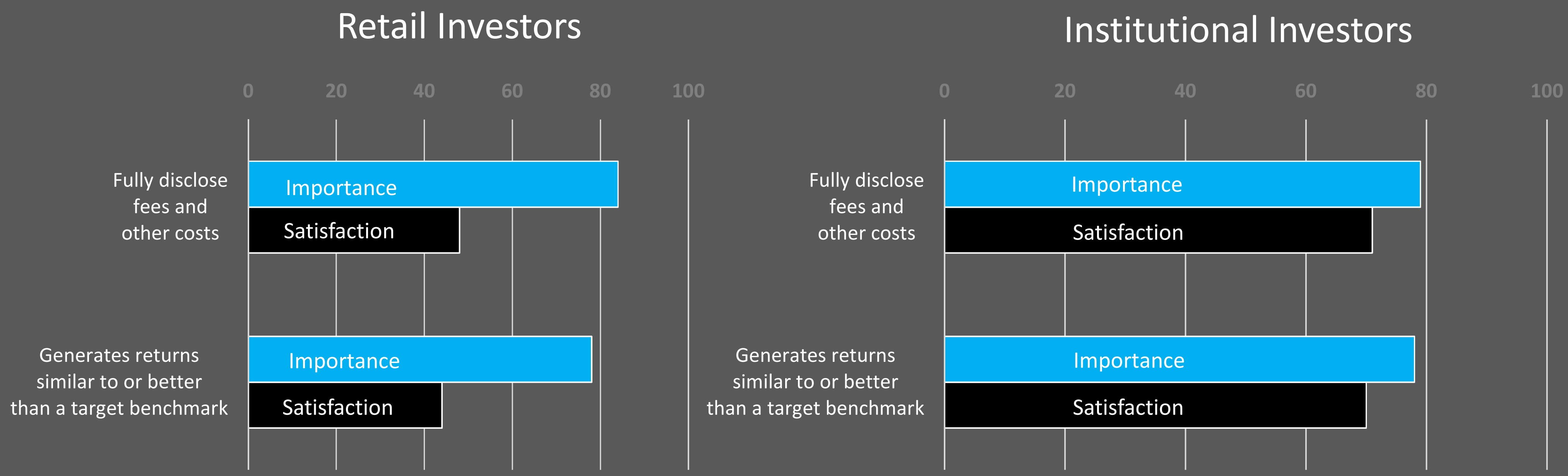
- Trust requires two components: 1. trustworthy 2. competence.
- Trust is a valuable and robust business asset for the financial-service provider to retain clients against price competition and to create growth opportunities in expanding products and services to both deepen and broaden their client base.
- Creating the trust asset. “Fee-only” independent financial-advisor business model offers a powerful structural approach for creating the trustworthy component of trust, by minimizing potential conflicts of interest and transparently aligning incentives between advisor and client. This model is disrupting the traditional “product-push” wealth-management model with captive distribution commission-based broker and advisor systems.
- Technology to succeed will have to partner with entities that can provide the trust asset, since it cannot create trust by itself. Technological advances will leverage financial advisors who have the “trust asset” to enhance expansion of their business instead of taking it away from them.

Fintech's Success Will Enhance the Value of Trust

- FinTech increases time efficiency and lowers cost by substituting "black box" technology for human efforts of both advisors and product providers but in doing so it also increases "opacity", which in turn makes trust an even more important and valuable asset. FinTech's success will thus drive increasing value for the trusted advisor, product provider, consultant and regulatory overseer.
- Questions to be explored: How will the value jointly created be shared between the technology and trust assets? Instead of being displaced, will established institutions that are trusted and have adapted their business models to take full advantage of technology have a material advantage over new FinTech entrants into financial services? Will the industry become more fragmented or more concentrated?
- Retail consumers of financial-management services lost trust in both their providers and their regulators in the 2008 financial crisis. There is evidence that this loss in trust is still having ramifications today.

Missing Trust: Retail Investors Register Low Satisfaction with Cost Disclosures and Performance from Active Portfolio Managers

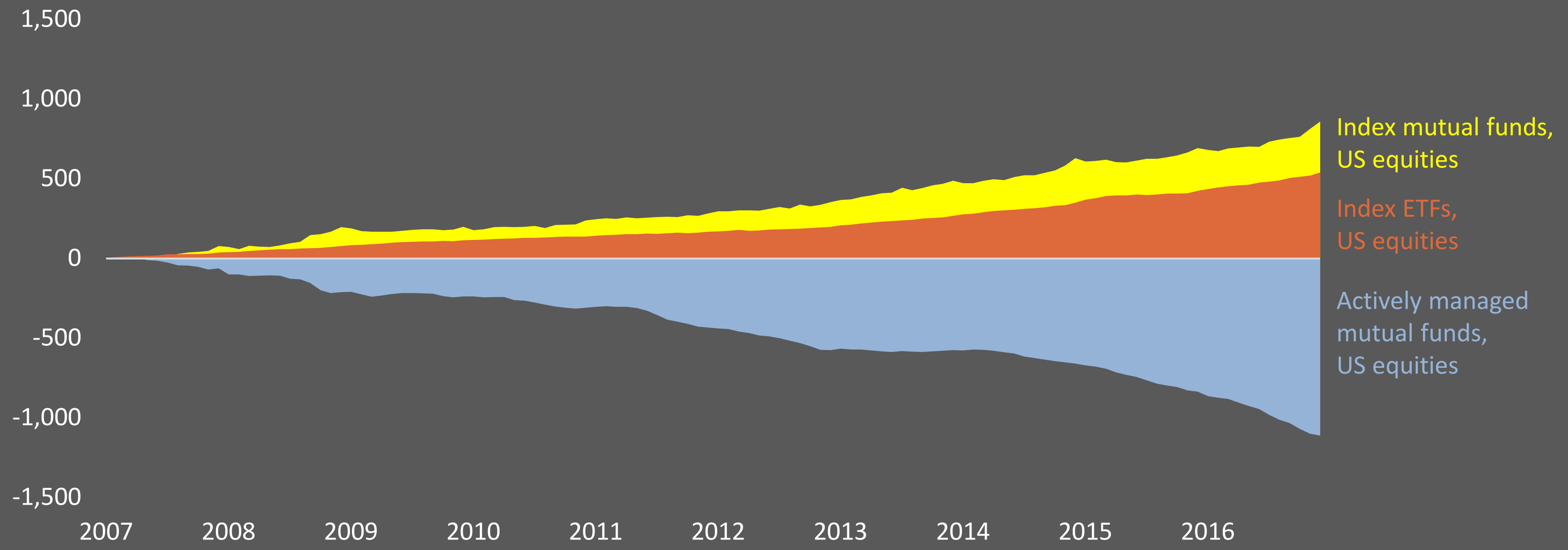
Satisfaction and Importance ratings by investors (%)



Source: CFA Institute ©*FT* April 2018

Growth of Index Funds and ETFs vs. Actively Managed Funds –

Industry Impact of a Loss of Retail Investor Trust 2008-9 and a Continuing Flight to Transparency as a Second-Best Strategy?



Source: 2017 ICI Factbook. http://www.icifactbook.org/ch2/17_fb_ch2
Cumulative flows to and net share issuance of index mutual funds (US equities) and index ETFs (US equities), billions of dollars; monthly, January 2007–December 2016. Prior to October 2009, index equity Index ETF (US equities) data include a small number of actively managed domestic equity ETFs. Note: Equity mutual fund data include net new cash flow and reinvested dividends. Data exclude funds that invest primarily in other funds. The charts is for illustrative purposes only and are not indicative of any investment.

Observations on Trust and Financial Advice--1

- The client and advisor share the objective that their relationship last long.
- There is however a threshold of poor ex post performance at which the client leaves.
- There is a positive trade-off between that threshold level and the degree of trust the client has in the advisor—greater trust, higher threshold
- Increasing transparency when possible will shift that threshold-trust tradeoff curve upward
- A policy of explaining to the client what you will do for them in advance and then reviewing what you did afterwards to show that you did what you promised, will build trust

Observations on Trust and Financial Advice--2

- Crisis for a client always involves large losses but large losses need not always create a crisis for the client—crisis is a consequence of losing trust in the strategy.
- A consistent philosophy of investing and client understanding of the potential consequences of risks taken builds and retains trust --
- Lifetime Integrated Financial Experience [“LIFE”] minimizes and manages crisis and adds peace-of-mind value to the client beyond just an improved financial return
- Avoid Paths of Error
  - Market timing is risky. Successful market timing requires the timer to be “right” twice – getting out and getting back in (relative to core strategy)
  - Justifying portfolio manager changes based on best realized performance of component funds is training your client to leave you —
  - In judging, distinguish between the fundamental merits of the design of a product or strategy and the current quality of execution of that design.

Innovation in Regulation to Restore and Strengthen Trust

- Cultivate the “Trust Triangle: consumer-provider; consumer-regulator; regulator-provider
- Fiduciary duty responsibility for financial advisors strengthened to promote creation of trust but with significant clarity on the meaning of “client’s best interests”, to provide balance to protect the advisor from too much litigation risk.
- Encourage transparency and avoidance of conflict of interests
- Mandated disclosures matched to the user of the information. E.g., disclosures to customers should contain only information deemed “meaningful” to the customer, to avoid inducing frustration or poor decisions
- Risk definitions and measures consistent with the purpose or goal of the product or advice offered. E.g., risk of retirement-income-goal product or portfolio measured in terms of volatility of its retirement income and not the volatility of its value.
- Disclosures of expenses to permit meaningful comparisons among similar alternatives. Expenses disclosed for a product or service could include the total embedded fees of the product [computed like VAT] as well as the marginal contribution to expense from service or product provider.
- Regulations should be routinely reviewed for their “unintended” consequences

Speaker Profile

Robert C. Merton is the School of Management Distinguished Professor of Finance at the MIT Sloan School of Management and John and Natty McArthur University Professor Emeritus at Harvard University. He was the George Fisher Baker Professor of Business Administration (1988–98) and the John and Natty McArthur University Professor (1998–2010) at Harvard Business School. After receiving a Ph.D. in Economics from MIT in 1970, Merton served on the finance faculty of MIT's Sloan School of Management until 1988 at which time he was J.C. Penney Professor of Management. He is currently Resident Scientist at Dimensional Fund Advisors, where he is the creator of Target Retirement Solution, a global integrated retirement-funding solution system.

Merton received the Alfred Nobel Memorial Prize in Economic Sciences in 1997 for a new method to determine the value of derivatives. He is past president of the American Finance Association, a member of the National Academy of Sciences, and a Fellow of the American Academy of Arts and Sciences.

Merton has also been recognized for translating finance science into practice. He received the inaugural Financial Engineer of the Year Award from the International Association for Quantitative Finance (formerly International Association of Financial Engineers), which also elected him a Senior Fellow. He received the 2011 CME Group Melamed-Arditti Innovation Award, and the 2013 WFE Award for Excellence from World Federation of Exchanges. A Distinguished Fellow of the Institute for Quantitative Research in Finance ('Q Group') and a Fellow of the Financial Management Association, Merton received the Nicholas Molodovsky Award from the CFA Institute. He is a member of the Halls of Fame of the Fixed Income Analyst Society, Risk, and Derivative Strategy magazines. Merton received Risk's Lifetime Achievement Award for contributions to the field of risk management and the 2014 Lifetime Achievement Award from the Financial Intermediation Research Society. He received the 2017 Finance Diamond Prize from Fundación de Investigación, IMEF.

Merton's research focuses on finance theory, including lifecycle and retirement finance, optimal portfolio selection, capital asset pricing, pricing of derivative securities, credit risk, loan guarantees, financial innovation, the dynamics of institutional change, and improving the methods of measuring and managing macro-financial risk. Merton received a B.S. in Engineering Mathematics from Columbia University, a M.S. in Applied Mathematics from California Institute of Technology and a Ph.D. in Economics from Massachusetts Institute of Technology and holds honorary degrees from nineteen universities.
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