

Financial Innovation Survey of FRAC Members

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FRAC Financial Innovation Working Group

Why focus on financial innovation?

- Financial crises are frequently preceded by the rise of new innovations. These innovations can reduce costs and contribute to growth in the industry. They can also contribute to fragility in unexpected ways. Monitoring innovation is crucial to monitoring systemic risk in the financial industry.
- The OFR is in a unique position to focus on the systemic risk arising from innovation.
 - Most financial regulators have additional priorities, from protecting consumers to promoting the safety and soundness of institutions they oversee. There may be opportunities for the OFR to collaborate with other regulators to examine the systemic ramifications of new innovations.
 - There may be innovations that cut across the jurisdiction of multiple federal regulators or are not within the domain of any federal regulator. The OFR may be able to facilitate coordination, discussion and monitoring with respect to such innovations.

FRAC Financial Innovation Survey Questions

- 1. New and Ongoing Financial Innovations:** Are there any recent financial innovations that are getting less attention than they should given their potential disruptive or systemic risk impact? Which are likely to be the most transformative over the next five or ten years? What changes to your or others' organizations internal processes are you seeing or anticipating as a result of financial innovations?
- 2. Secondary Effects of Financial Innovations:** Are there any recent financial innovations that have material follow-on impacts that may have or create systemic risks?
- 3. Historical Financial Innovations:** Which financial innovations have had the greatest systemic impact historically? Are you aware of any case studies that have been (or ought to be) done that illuminate the benefits, costs, or unintended consequences of specific financial innovations?
- 4. Definition:** How do you define and categorize financial innovation?
- 5. Datasets & Approaches:** What other datasets and tools are you aware of that could potentially be used to monitor or evaluate financial innovation? Are you aware of efforts in industry or academia or elsewhere to monitor and evaluate financial innovation (literature, case studies, surveys, offices or centers, etc.)?
- 6. Existing Gaps:** Are there existing gaps or innovation-related outputs the OFR could address/produce that might be valuable to the financial community? Are there other ways that the OFR could contribute to current understandings of financial innovation?

Definitions of Financial Innovation:

“The sudden appearance of a new kind of financial contract, or sudden increase in size of the market for a new kind of financial contract.”

“Advances in institutional structures, products and the processes that support financial activities.”

“I think there might be three types of financial innovations – those in response to: regulation, taxes, and meant to improve efficiency.”

“Not sure if it is best viewed as unitary category. Classifications may be more meaningful.”

“I'm not sure it's useful to have a taxonomy of financial innovation, as anything that changes in the financial sector could be classified as an ‘innovation.’”

New & Ongoing Financial Innovations

Most mentioned by FRAC members:

- Distributed Ledger & Blockchain
- Automated and High-Frequency Trading & Processes
- The use of algorithms and big data in lending and other financial decisions
- Cybersecurity

Follow-On or Systemic Effects:

“The most beneficial (and therefore successful) innovations can also be the most disruptive. A truly valuable financial innovation is likely to undermine the business models of old-school incumbents in that sector. That is obviously not an argument against innovation – it is an argument for devoting supervisory resources to ensure that the loss of profitability among incumbents does not pose systemic risks of one sort or another.”

“A particular systemic risk of artificial intelligence and machine learning is that financial behavior becomes coupled through reliance on common datasets and models.”

“Artificial Intelligence-based technologies might result in algorithms that behave in unpredictable ways under particular circumstances resulting in unintended consequences at massive scale e.g. flash crash.”

“As systems become more interconnected they become more vulnerable to focused cyberattacks from hackers and nation states.”

Themes

Some issues emerged across multiple member responses as drivers and types of innovation:

- Technologies that exploit new ways of gathering and analyzing data (big data, high frequency trading)
- Technologies that increase transaction speed or frequency (big data, high frequency trading)
- Technologies that displace existing institutions or established practices (P2P lending, crowdfunding, cross-border payments, distributed ledger)
- Technologies that change the nature the information that market participants use in contracting or making decisions (big data, high frequency trading, LIBOR)
- New contract types and changing market structures (treasuries, P2P lending, crowdfunding)
- Expanded/reduced roles of different players within markets (more centrally cleared swaps, Euro, captive reinsurers)
- Responses to changes in law (regulations, taxes) vs. technology

Approaches to Studying Innovation

- Case studies
 - Historical
 - Ongoing
- Agent-Based Modeling
- Textual analysis of financial publications
- Assess concentration and absolute value of affected market sectors
- Analyzing time series of aggregated market characteristics
- Surveys of market participants
- Counterfactual analyses

Historical & Ongoing Cases or Periods of Innovation

- Emergence of MBS in 1980s
- Saving & Loan crisis
- CDOs
- Equity market lessons for Treasuries or other markets, e.g., use of triggers and “time outs”
- Role of networks/electronic markets in HFT & market fragmentation
- Agency structured notes
- OTC regulations and derivative-fueled crises
- Covenant-Lite corporate bonds
- Subprime crisis
- Tri-party repo
- Central clearing & settlement
- Adoption of ISINs, LEIs & other financial tracking devices
- Credit cards & payment processing
- Segmentation of investment managers (mutual funds, hedge funds)
- Eurodollar and money-market fund development/adoption
- Regulation Q and its demise
- Money market accounting changes & “Break the Buck”
- Role of options during Dutch tulip bubble of 1637

Potential Next Steps

- Use findings as starting point for further discussion.
- Pursue methods for identifying systemic risks posed by innovations or identifying innovations likely to pose a systemic threat.
- Identify innovation case study(ies) to pursue.
 - Opportunity for multi-disciplinary approach, e.g., combine policy analysis & agent-based modeling
- Consider resurveying FRAC members in a year. Identify the types of information that would be most useful to the OFR.