# Eastern Medicine for Western Finance

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# Overview

- Finance today: Dynamism, complexity and unknowns
- Some implications
- How we regulate finance
- Case studies
- How we might do better

# Three Characteristics of Finance

Dynamic

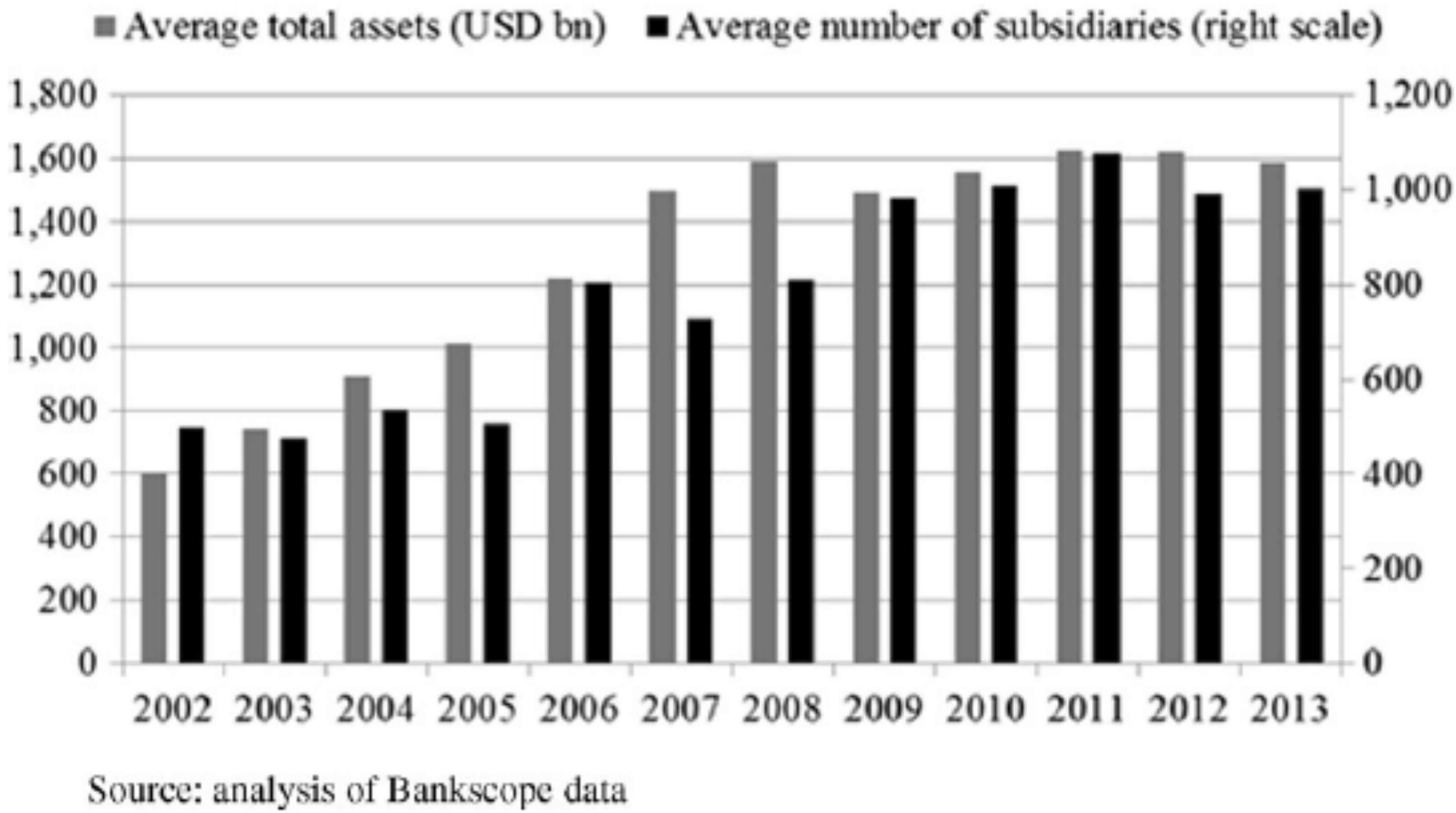
- Periods of stability can induce changes in asset pricing, changes in leverage, and structural change
- Regulatory arbitrage
- Innovation
- Radical change

# Three Characteristics of Finance

Complex

- Institutions
- Instruments
- Markets
- System

# Banks




Average number of majority-owned subsidiaries and the average of total assets for the sample of 29 G-SIBs 2002–2013

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Source: Jacopo Carmassi & Richard Herring, *The Corporate Complexity of Global Systemically Important Banks*, 49 J. Fin. Serv. Research 175, 180 (2016).

# Another Look at Banks

| | Banks | Insurance companies | Mutual & pension funds/nominees/trusts/trustees | Other financial subsidiaries | Non-financial subsidiaries | Total subsidiaries |
|---|---|---|---|---|---|---|
| Bank of America | 72 | 17 | 584 | 322 | 915 | 1,910 |
| | 32 | 24 | 396 | 282 | 673 | 1,407 |
| Barclays | 54 | 16 | 465 | 380 | 824 | 1,739 |
| | 49 | 21 | 309 | 239 | 385 | 1,003 |
| BNP Paribas | 103 | 68 | 323 | 760 | 1,338 | 2,592 |
| | 88 | 74 | 102 | 433 | 473 | 1,170 |
| Citigroup | 111 | 41 | 456 | 650 | 1,039 | 2,297 |
| | 101 | 35 | 706 | 584 | 1,009 | 2,435 |
| Credit Suisse | 30 | 4 | 89 | 52 | 67 | 242 |
| | 31 | 4 | 91 | 63 | 101 | 290 |
| Deutsche Bank | 68 | 8 | 541 | 618 | 889 | 2,124 |
| | 54 | 9 | 458 | 526 | 907 | 1,954 |
| Goldman Sachs | 15 | 10 | 74 | 121 | 200 | 420 |
| | 7 | 4 | 48 | 151 | 161 | 371 |
| HSBC | 89 | 37 | 309 | 298 | 832 | 1,565 |
| | 85 | 37 | 246 | 381 | 485 | 1,234 |
| JPMorgan Chase | 54 | 13 | 305 | 205 | 518 | 1,095 |
| | 38 | 17 | 229 | 145 | 375 | 804 |
| Morgan Stanley | 19 | 12 | 245 | 236 | 799 | 1,311 |
| | 19 | 22 | 225 | 170 | 616 | 1,052 |
| RBS | 33 | 5 | 162 | 206 | 393 | 799 |
| | 31 | 29 | 168 | 450 | 483 | 1,161 |
| Société Générale | 95 | 20 | 97 | 405 | 296 | 913 |
| | 81 | 13 | 93 | 270 | 387 | 844 |
| UBS | 28 | 4 | 108 | 152 | 166 | 458 |
| | 29 | 2 | 121 | 66 | 199 | 417 |
| Total by industry | 771 | 255 | 3,758 | 4,405 | 8,276 | 17,465 |
| | 720 | 310 | 3,490 | 4,263 | 6,729 | 15,512 |
| % by industry | 4% | 1% | 22% | 25% | 47% | 100% |
| | 5% | 2% | 22% | 27% | 43% | 100% |

Breakdown by Industry of Subsidiaries of G-SIBs, May 2013 (white) and December 2007 (gray)

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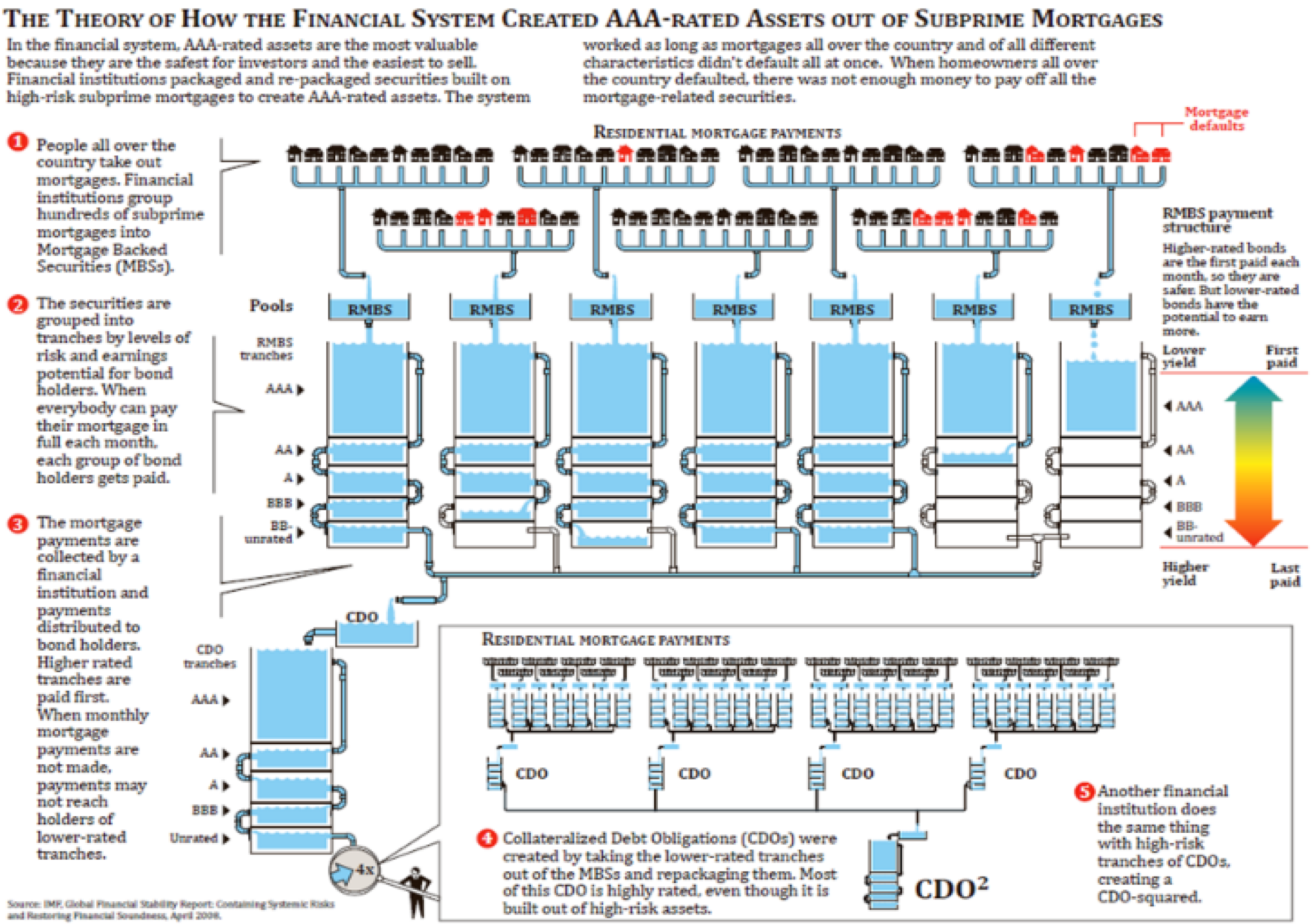
Source: Jacopo Carmassi & Richard Herring, *The Corporate Complexity of Global Systemically Important Banks*, 49 J. Fin. Serv. Research 175, 181-2 (2016).

# Instruments

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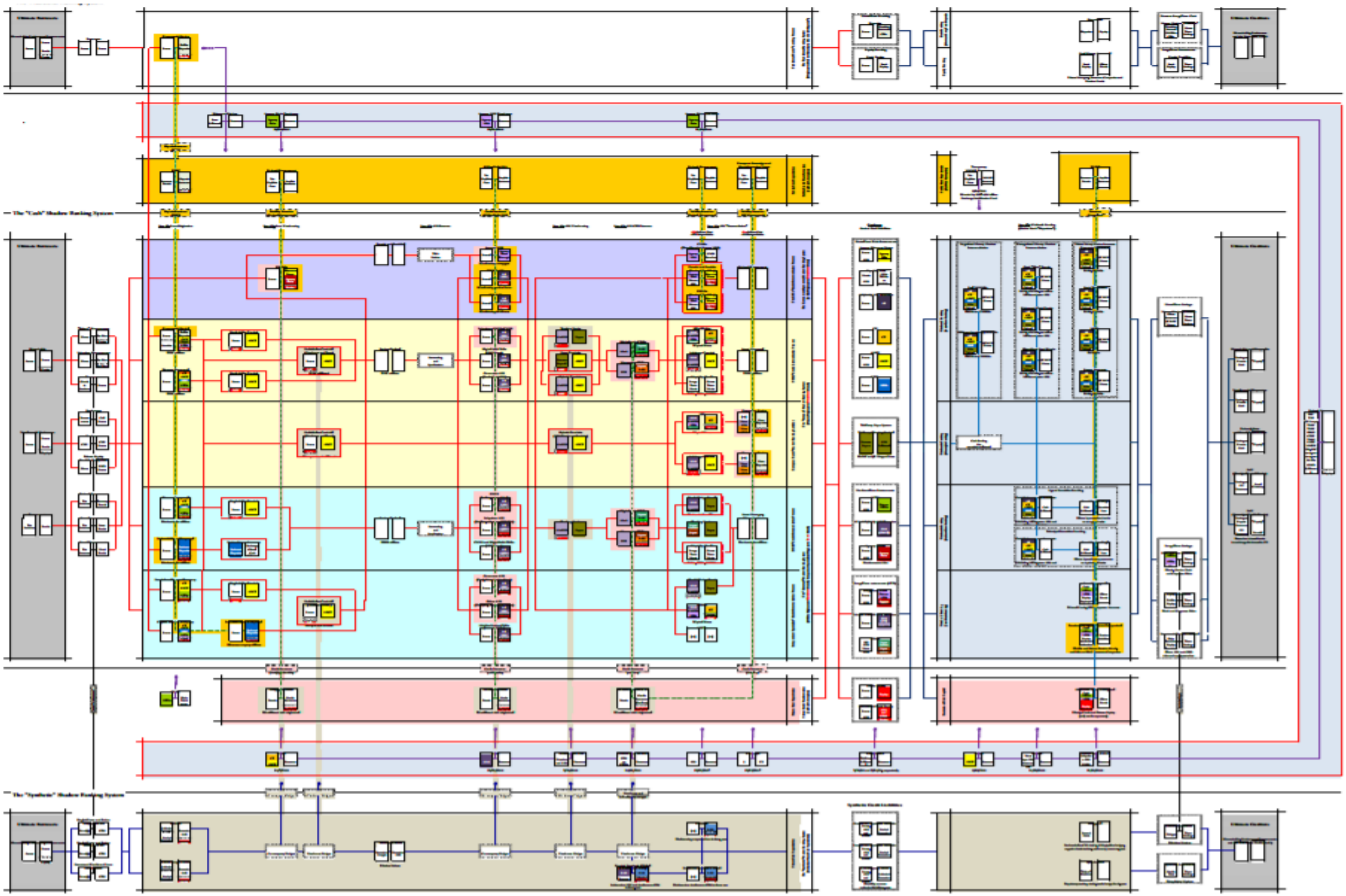
Source: IMF, Global Financial Stability Report 2008.

# The Shadow Banking System, circa 2008



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Source: Zoltan Pozar et. al, *Shadow Banking*, FRBNY Staff Report No, 458 (2010).

# Three Characteristics of Finance

## Unknowns

- "The financial system has crossed a threshold of complexity where the system is evolving faster than regulators and regulations can keep pace." Simon Levin & Andrew Lo
- "The essential challenge facing everyone living in a capitalist economy is the inability to conceive of what the future may hold. The failure to incorporate radical uncertainty into economic theories was one of the factors responsible for the misjudgments that led to the crisis." Mervyn King
- "It would seem that the supervision and regulation of US investment and commercial banks during the great moderation was based on an assumption about how the financial system was supposed to work, not upon sufficient knowledge about how the financial system actually worked." Richard Clarida

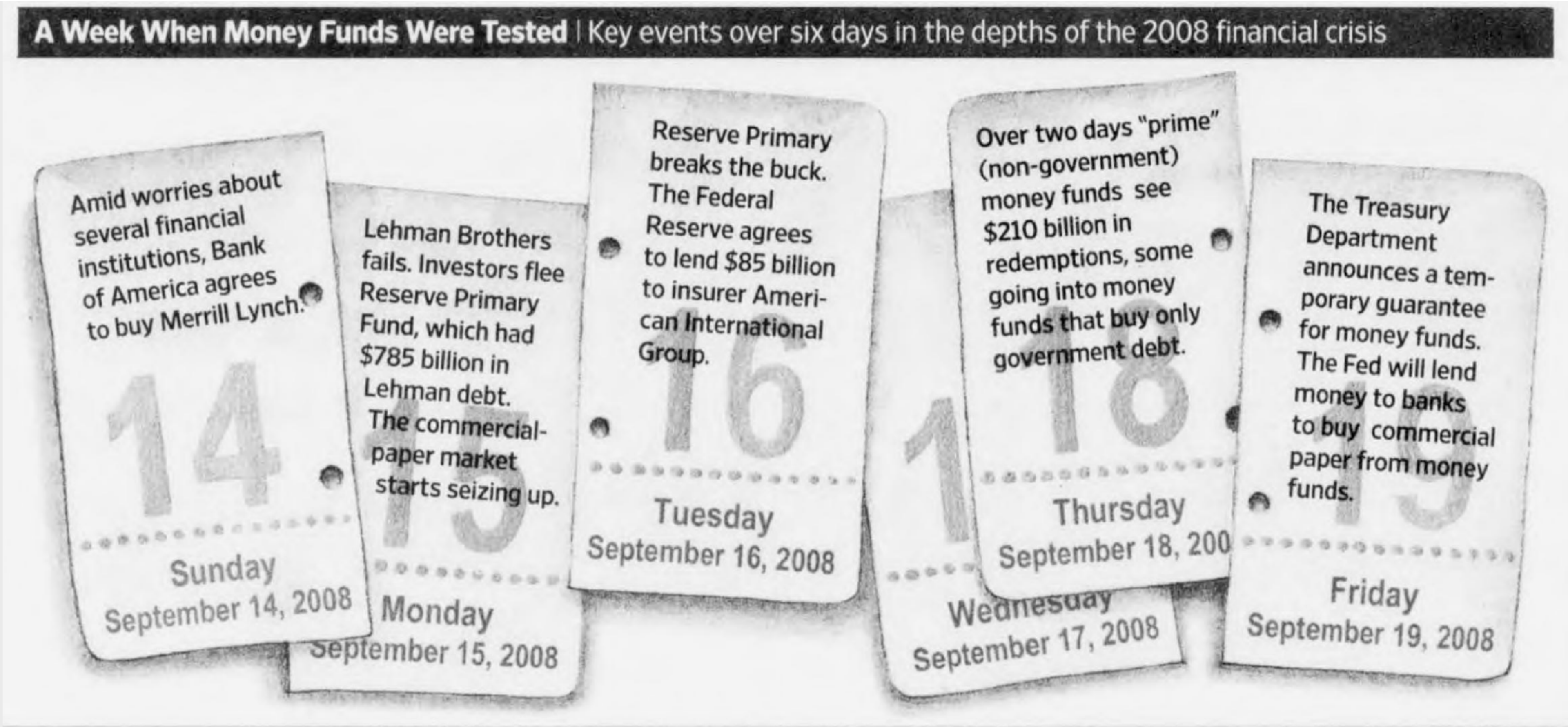
# These Dynamics Matter

- Can impede market discipline, firm governance, and supervision
- Can exacerbate fragility
- Can delay and impede crisis response
- Creates challenges for how we regulate finance

# Process of Financial Regulation

- International financial regulation (IFR)
  - E.g., Basel Accords
- Statutes
  - Bicameral approval and presentment
  - Committees and other vetogates
- Rulemaking
  - Notice and comment
  - Cost-benefit analyses
- Supervision, etc.

# Case study: Money market mutual funds

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Source: Should Investors Worry About Money Funds?, *The Wall Street Journal*, June 3, 2011.

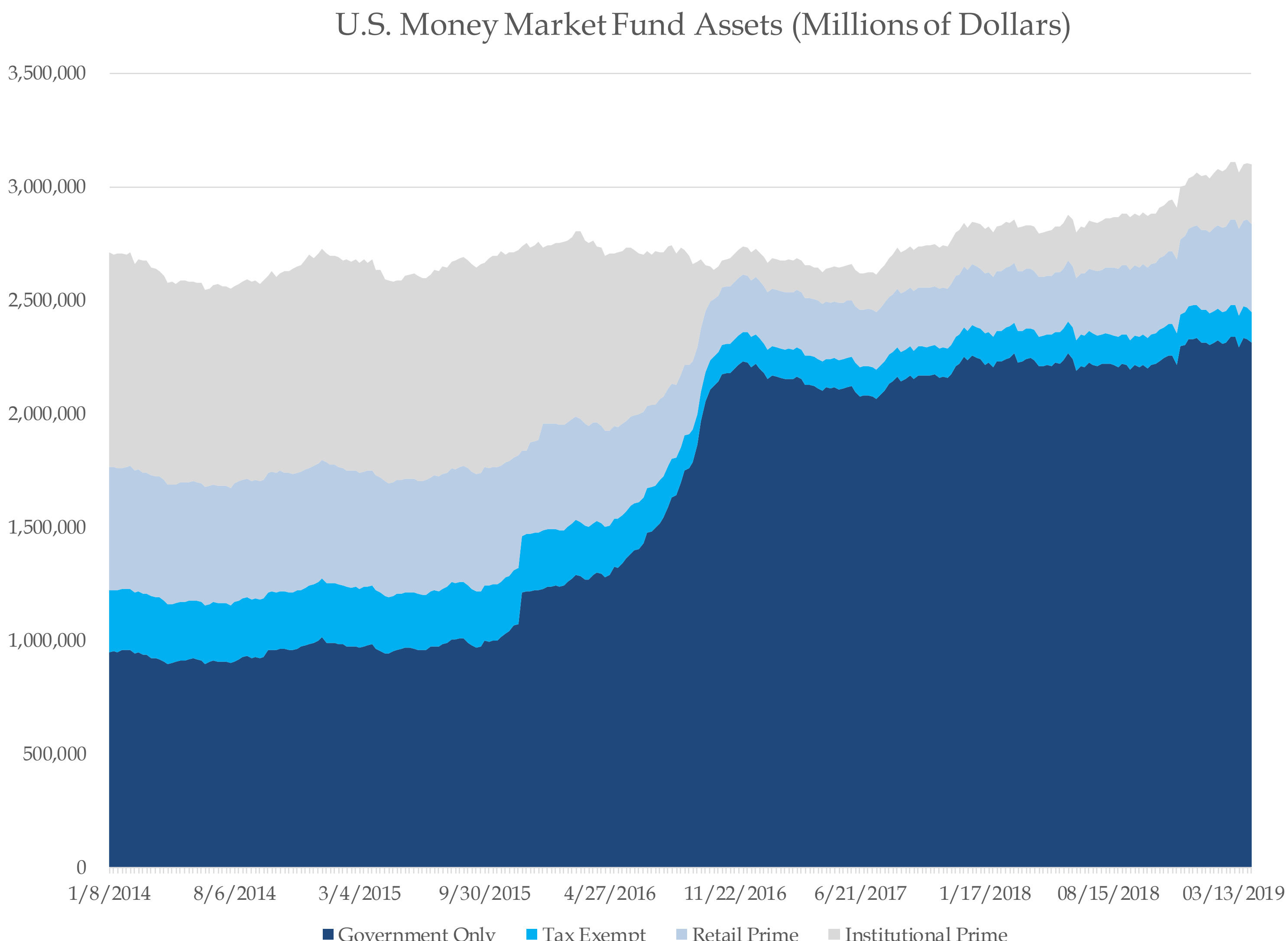
# Rulemaking Process

- Further Background
  - Dodd-Frank Act
  - President's Working Group
  - FSOC
- SEC proposed rule changes in June 2013
- Received and reviewed more than 1,400 comment letters
- Issued final rule on July 2014, with delayed implementation
- Release issued with final rule: 893 pages, 2,530 footnotes

# What Were The Issues Discussed In Connection With Adoption?

- Lots of attention on enhanced market discipline
  - Mentioned 17 times in final rule and supporting release
  - "We … believe that daily disclosure will increase market discipline, which could ultimately deter situations that could lead to heavy redemptions" 333
- Some attention on the systemic ramifications
  - "[W]e acknowledge changes in the market arising from the reforms may have macroeconomic effects in the future" but "[b]ecause we cannot foresee all of the ways markets will evolve, we cannot predict [those]… effects." 631
  - "Given the heterogeneity of investors' preferences and investment objectives and constraints, we do not expect that all investors will allocate assets to the same alternative." 635
- Effectively no discussion of the Federal Home Loan Bank System
  - Mentioned once, in footnote 1893 on page 610
  - "Government money market funds must invest at least 99.5 percent of their portfolio in cash, "government securities"…. Allowable securities include securities issued by government sponsored entities such as the Federal Home Loan Banks….

# What Happened When The Rule Went Into Effect?




*Source: Investment Company Institute*

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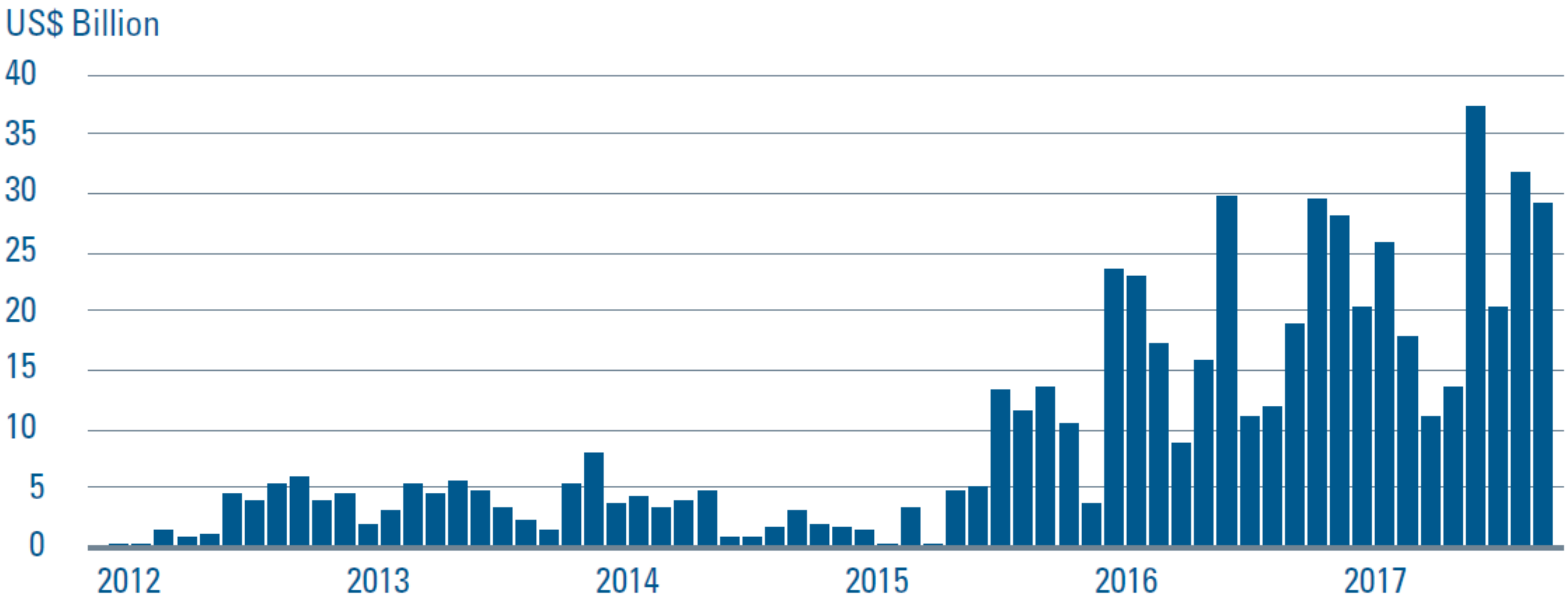
# How this was possible:

FHLBS' MONTHLY ISSUANCE OF SHORT-TERM FLOATERS INCREASED SIGNIFICANTLY IN 2016-2017



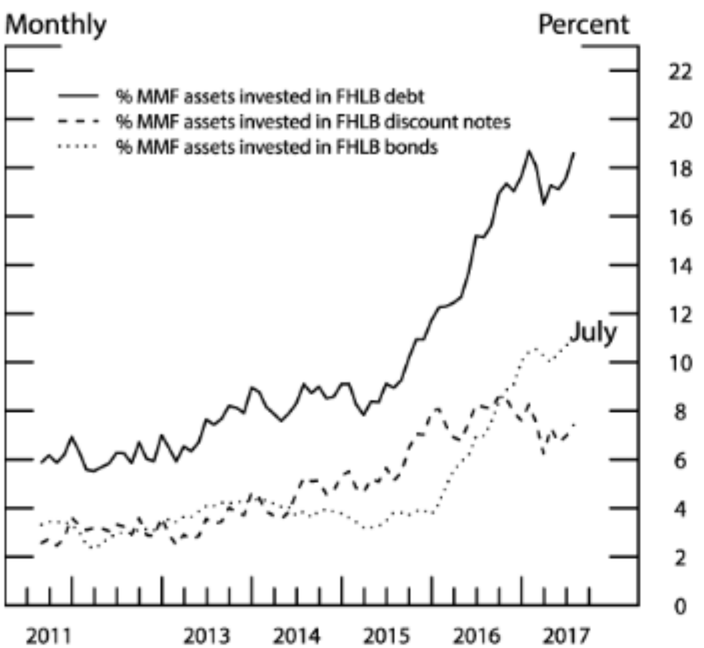

Source: FHLB Office of Finance Monthly Issuance Data Reports (January 2012-August 2017).

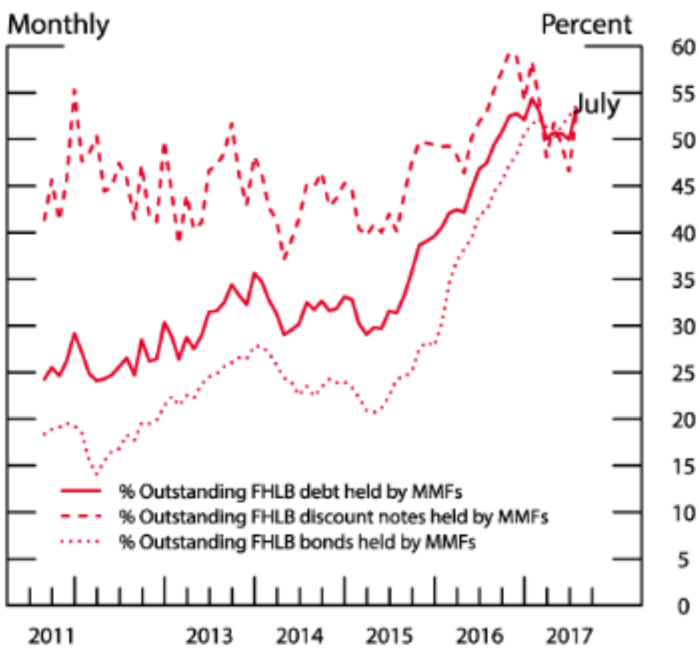
Note: Here, "short-term" signifies 397 days or less to maturity.



Source: Claude Lopez Et Al., *Macroprudential Policy and Financial Stability: Where do we Stand?* The Milkin Institute, March 2018.

# How this was possible, cont'd:




Source: SEC N-MFP filings, FHLB filings.

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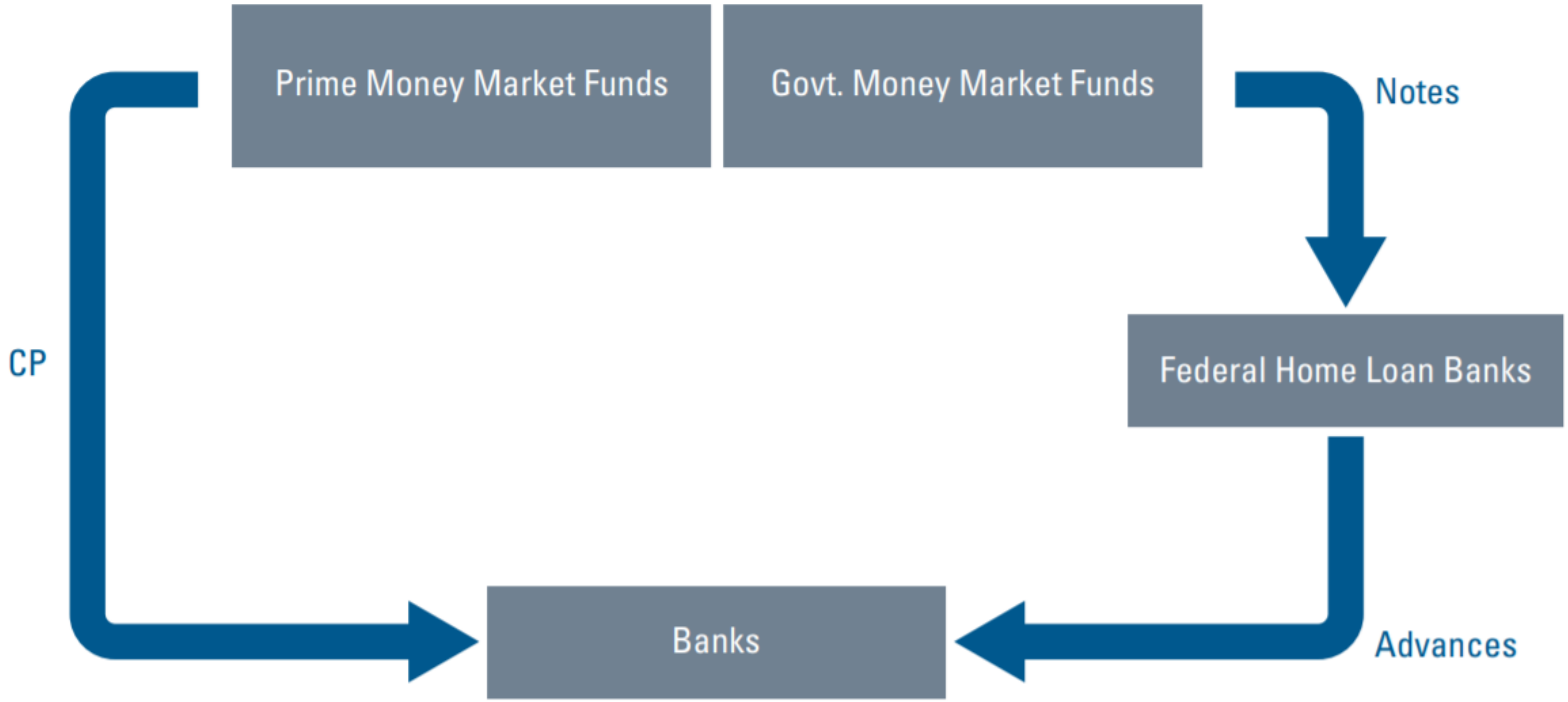
Source: Gissler, Stefan, and Borghan Narajabad (2017). "The Increased Role of the Federal Home Loan Bank System in Funding Markets, Part 2: Recent Trends and Potential Drivers," FEDS Notes. Washington: Board of Governors of the Federal Reserve System, October 18, 2017, https://doi.org/10.17016/2380-7172.2093.

# Net Effect

BANKS ACCESS FUNDING FROM GOVERNMENT MMFS INDIRECTLY THROUGH FHLBS




Source: Milken Institute.

Note: The set of instruments in the figure is simplified; e.g., MMFs fund banks via repo as well as by buying CP, and FHLBs fund banks via repo, federal funds, and bond purchases, as well as in the form of advances.

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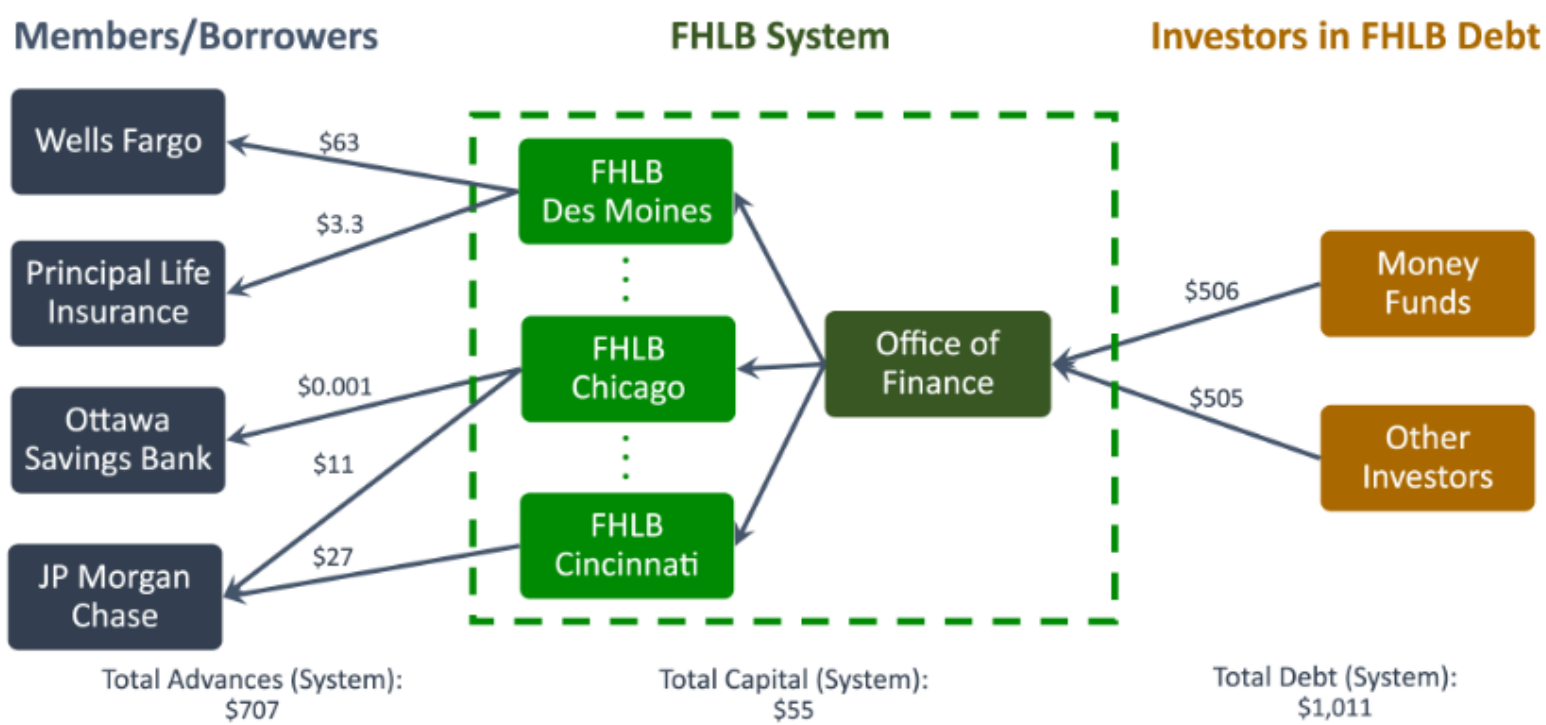
Source: Claude Lopez et Al., *Macroprudential Policy and Financial Stability: Where do we Stand?* The Milken Institute, March 2018.

# Another Look

Figure 2: Schematic map of the flow of funding in the FHLB system




*All amounts in billions of dollars, as of June 2017

Source: FHLB 10Q and 10K filings, SEC N-MFP filings, CALL reports.



Source: Gissler, Stefan, and Borghan Narajabad (2017). "The Increased Role of the Federal Home Loan Bank System in Funding Markets, Part 1: Background," FEDS Notes. Washington: Board of Governors of the Federal Reserve System, October 18, 2017, https://doi.org/10.17016/2380-7172.2070.

# Where Do Things Stand Now?

- Outcome no one seems to have predicted
  - Thoroughly studied.
  - Regulators not the only ones to lack critical information.
- That outcome raises a range of policy issues not addressed by anyone in advance
- Rule remains entrenched, discussion limited.
- The value of the significant public and private resources expended in the process far from clear.

# Case study: the Basel rules

- Many of the same dynamics at play in the context of recent money market mutual funds reforms can be observed over a longer time horizon in the evolution of the Basel rules.
- The process of designing, updating, and implementing the Basel rules involves extensive deliberation, expert input, and industry consultation at various levels.
  - Basel I (1988): imposed basic risk-weighted capital requirements based on pre-defined "buckets" (30 pages).
  - Basel II (2004): introduced internal ratings based (IRB) approach to risk weighting  for larger, more sophisticated banks (347 pages).
  - Basel III (2010-2019): introduced a new non-risk-weighted leverage ratio, countercyclical and systemic buffers, output floors and other, more prescriptive, capital and liquidity requirements (616 pages).

# Can we do better?

- Some progress:
    - Living wills
    - Stress tests*
    - Data standardization
- Others proposals:
    - Experimentalism
    - Sunsets
    - Experimentation
- Real virtues but also drawbacks and limitations to each approach.
- Close examination of why suggests incremental changes or additions to current system will not suffice.

# What might eastern medicine entail?

Holistic

“’The whole is greater than the sum of its parts’ expresses the essence of holism…. Holism generally opposes the Western tendency toward analysis, the breaking down of wholes into parts sometimes to the point that ‘you can't see the forest for the trees’.

Holism is an important concept in the sciences and social sciences, and especially in medicine. Holistic medicine tries to treat the ‘whole person’ rather than focusing too narrowly on single symptoms.”

Merriam-Webster Online

# Eastern medicine as a mindset

## Stress tests

- When undertaken outside of periods of systemic distress cannot provide assurance that banks will be well capitalized (or structures able to withstand) massively adverse macroeconomic developments.
- Could be very useful at identifying limitations in how regulators and banks assess and understand risk exposures and ramifications of recent developments.

## Rulemaking

- May at times be appropriate to shift focus from quantifiable costs and benefits to structural effects and identification of other values at stake
- Willingness to identify open issues, matters of contention, and how best to monitor.

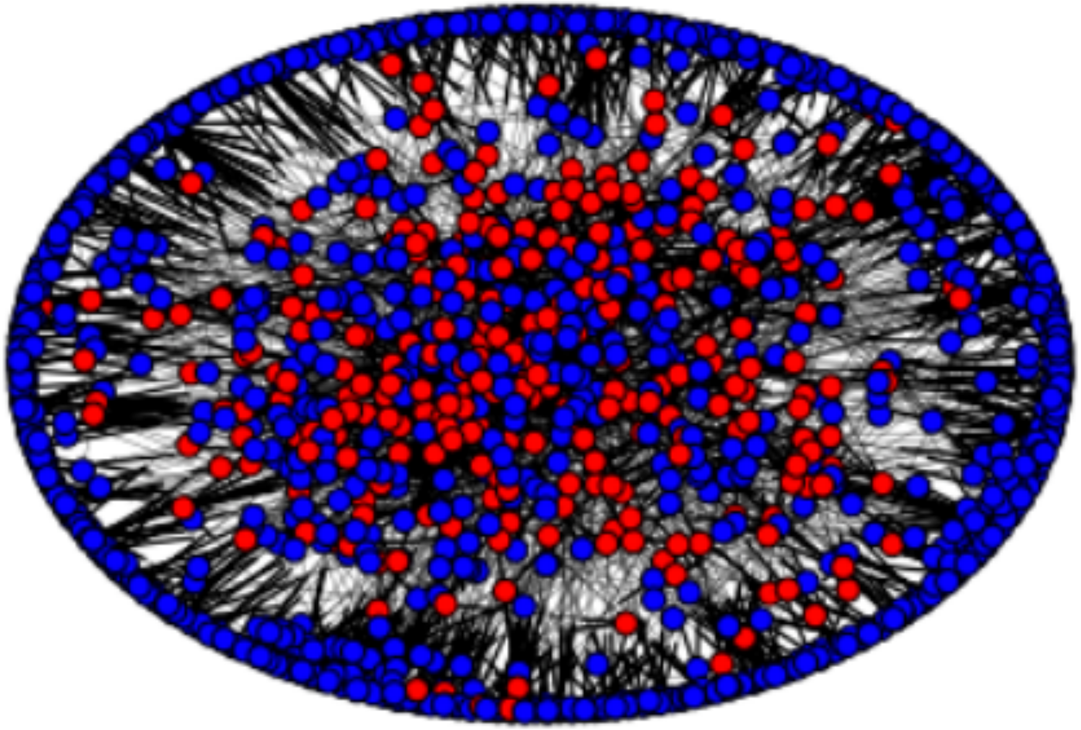
# Could eastern medicine be operationalized?

Ten-year commissions:

- Multi-disciplinary effort to assess progress.
- Scope:
    - What is working, what is not, and why?
    - What are unintended consequences, good and bad?
    - Other pertinent developments, like new tools?
    - Look at a range of signals of financial system health, and assess various interpretations of those signals.
- Like other processes, aim should be on improving efficacy, while also addressing legitimacy and buy-in.

# Vicious cycle

## Title 12 of the U.S. Code (Banks and Banking)



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Source: William Li et al., *Law is Code: A Software Engineering Approach to Analyzing the United States Code,* 10 J. of Bus. & Tech. Law 297, 342.