Liquidity:
Connecting Theory and Policy

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Main Points

- "Liquidity" is difficult to define and model
  - Multiple "concepts" of liquidity
  - Relates to institutions/investors, markets, and instruments in different ways depending on "type" of liquidity
  - Data to "test" models even less ideal than for some other economic/financial problems
- Designing policies to reduce systemic liquidity problems even more difficult
  - Connecting theory to policy tools is not straightforward
  - Practical considerations limit ability to match theoretical insights to policies
  - Multi-dimensional systemic liquidity risk makes prioritizing policy responses hard

Liquidity Theory (I)

- Insights from theoretical work
  - Basic notion of liquidity is as a "service" to make payments or readjust portfolio choices
  - Liquidity and safety are often confused
    - Safety in terms of market risk—little loss of value in a given time period—market liquidity.
    - Safety in terms of rollover risk—ability to continuously "fund" a set of trading positions or assets—funding liquidity
    - Safety often considered a low credit risk instrument (default-free)
  - Problems arise in liquidity services when there are "market failures" or externalities.
    - Transaction costs
    - Moral hazard
    - Asymmetric (or incomplete) information
    - Counterparty risk/default risk/coordination externalities

Liquidity Theory (II)

- More insights from theoretical work
  - Demand for money-like services to make payments is dependent on several factors
    - Investor's risk-aversion – (grandma wants DD; grandson goes for MMMF)
    - Monetary policy conditions ("search for yield")
    - Accounting features (MMMF holdings are cash-like on corporate balance sheets)
    - Regulatory influences (from deposit rate caps to capital requirements or their absence)
  - Innovation influences types of money-like offerings (lower transaction costs, illusion of safety)
    - Securitized assets backing ABCP appeared "money like"
    - Constant NAVs still appear "money like"
    - China's wealth management products (WMPs) appear "money like"

Features of the Crisis That Models Try to Explain

- Fire sales and defaults become "efficient" *ex post*
- Short-term maturity assets no more "safe" than long-term maturity assets
- Counterparty risks perceived (or are) high leading to market freezes
- Role of innovation to satisfy higher demand for liquidity services led to poor quality instruments (or poorly understood ones)
- Role of regulatory arbitrage and poor oversight
- Role of incentives (e.g., securitization, credit rating agencies)

Private Solutions

- Hold more loss-absorbing capital to protect against fire sales and defaults
- Self-insure against funding shocks by issuing longer-term liabilities (including possibly deposits, if a bank) or holding liquid assets that can be liquidated easily
- Be transparent about risks held and funding structures
- Have only super-safe counterparties (e.g., central banks, clearing facilities, trade with institutions with a government back-stop)
- Note: Private solutions do not necessarily deal with systemic liquidity events

Public Policy Solutions

- Provide insurance against liquidity shocks or runs
  - Lender of last resort facilities
  - Clearing/settlement facilities
  - Deposit insurance
- Influence short-term liquidity buffers
  - Central banks reserve requirements
  - Regulatory (liquidity) requirements
- Require more loss-absorbing capital to protect against fire sales and defaults, become "buyer-of-last resort"
- Expand and/or intensify regulatory perimeter to other (non-bank) institutions influencing liquidity conditions
- Require disclosure and exposure data transparency

Progress Report on Public Policy Solutions

- By central banks
  - Lender of last resort facilities expanded and renamed (more eligible collateral, longer-term liquidity support (LTROs))
  - FX swap facilities in place (partially)
  - Some countries using reserve requirements aggressively
- By government
  - Deposit insurance (some countries putting in place now)
  - Discussion of depositor preference (in liquidation)
- By international standard setters: Basel III
  - Require more loss-absorbing capital to protect against fire sales and defaults
  - Require larger liquidity buffers (LCR) and less maturity transformation (NSFR)

Progress Report on Public Policy Solutions (cont'd)

- Expand and/or intensify regulatory perimeter to other (non-bank) institutions influencing liquidity conditions

- Require disclosure and exposure data transparency

Shadow Banks: FSB Regulatory Approach

- Shadow banks are those institutions that:
  - Engage in maturity transformation
  - Engage in liquidity transformation
  - Take on leverage
  - Assist in credit risk transfer

- Based on monitoring, decide which activities/entities have the potential to pose systemic risks or, due to regulatory arbitrage, undermine benefits of financial regulation.
  - Working on a method to determine which ones pose of systemic risk

Current FSB Work Streams on Shadow Banks

- Post crisis: Five regulatory work streams were deemed important
  - Mitigate spillover effects between regular banks and shadow banking entities
  - Reduce susceptibility of money market mutual funds to runs
  - Assess and mitigate systemic risks posed by other shadow banking entities
  - Assess and align incentives associated with securitization
  - Dampen risks and pro-cyclicality associated with securities lending and repos

Progress of Implementation for Shadow Banks (I)

- Banks/non-bank linkages
  - Still little progress on banking risk of excessive reliance on short-term funding from shadow banks.
  - Limitations on equity exposures and connections to SIVs
- MMFs
  - In U.S., still maintain constant NAV (net asset value) with no effective backup plan for runs(though less maturity mismatch)
  - Accounting treatment still encouraging "money like" features
  - Disclosure to market participants still inadequate for them to see risks
  - New U.S. rules make some (incremental) progress on "capital" buffers but don't eliminate "run" risk.

Progress of Implementation on Shadow Banks (II)

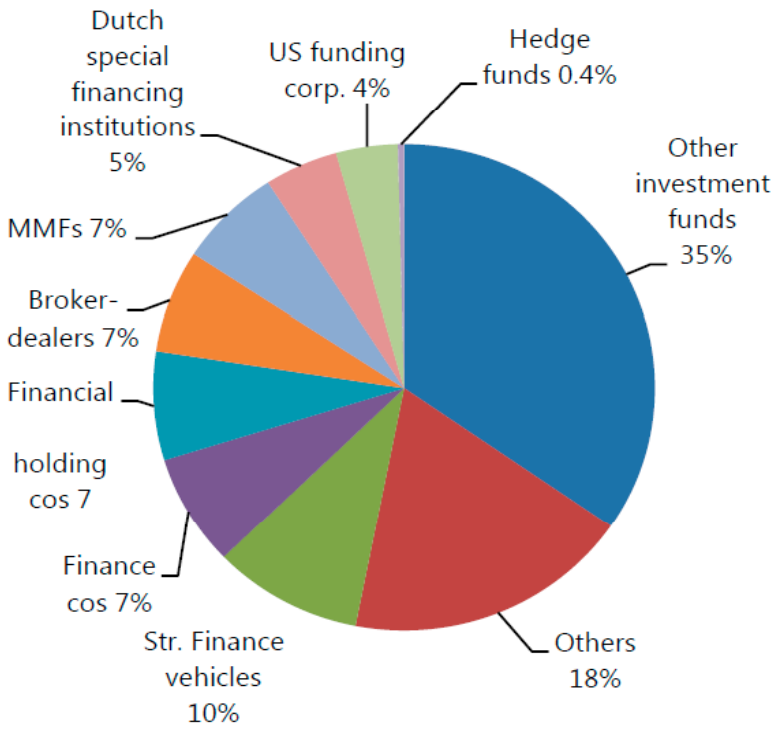
- Other non-bank risks
  - Data still insufficient; some jurisdictions not even allowed to collect data from unregulated entities
- Repo and securities lending
  - Tri-party repo markets have lowered time frames in which intra-day risks are most acute, but have not eliminated them
  - No agreement on how to mitigate procyclicality of margin in repo activities—proposed haircut floors not taken up yet
- Securitization
  - Many aspects "cured"; SIVs/conduits consolidated on balance sheets; capital held against vehicles; better reporting by credit ratings; risk retention of underlying assets

2012 FSB Monitoring Exercise: OFIs

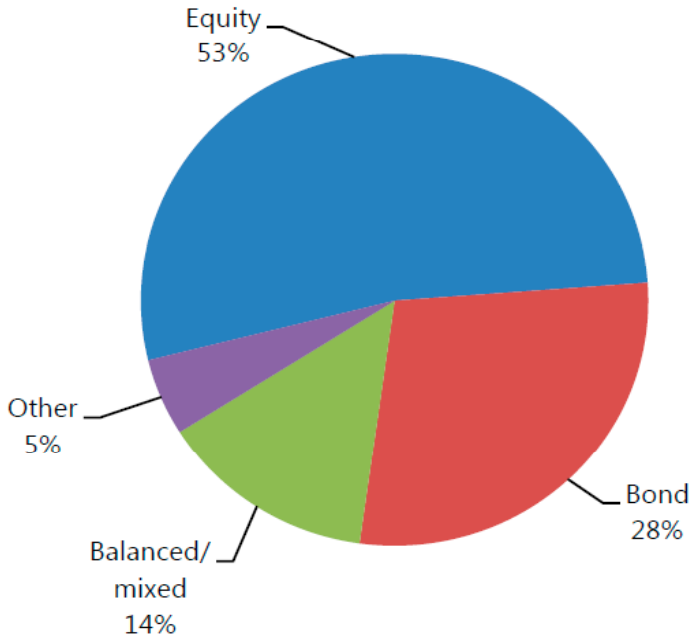
Sub-sectors of non-bank financial intermediaries (OFIs)

25 jurisdictions; at end-2011 Exhibit 4-1

Decomposition by sub-sector



Other investment funds by type from ICI statistics[1]



[1] Sample: 25 jurisdictions minus Indonesia, Saudi Arabia, Hong Kong, Singapore, for which data is not available.

Sources: National Flow of Funds data; Investment Company Institute (ICI).

Progress of Implementation on Commercial Banks

- Capital regulation
  - More and better capital; fire sales less damaging
  - Leverage ratio backstop
  - G-SIB and D-SIB capital surcharges
- Liquidity regulation
  - LCR: Hold more "high quality liquid assets" to withstand expected cash withdrawals over a 30-day period
  - NSFR: Reduce funding rollover needs by lengthening maturity of liabilities (or shortening maturity of assets)

Attention to Symptoms not Causes

- Central banks probably best equipped with policies to forestall liquidity difficulties, but …
  - New innovation for money-like instruments only indirectly influenced by central bank's control of "real" money.
  - If risk aversion is a key component determining the efficient production of liquidity services, what can a central bank hope to do to influence risk aversion?
  - Should LOLR facilities or "buyer of last resort" role be (almost) "free"—ad hoc policies and no ex ante charge. [encourages moral hazard issues].
  - If central bank become intermediary during crises, does not address coordination externalities.

Attention to Symptoms not Causes

- Shadow banking much less addressed
  - Disconnecting banks from shadow banks may insulate banks, but liquidity provision then goes further into the shadows. [counterparty risks still present]
  - Regulation of MMF is consumer protection oriented, not financial stability oriented when issues are now with corporate cash pools and run risks. [not dealing with asymmetric information and moral hazard]
  - Repo and securities lending still have (some) operational and counterparty and market risks [not dealing with coordination externalities, moral hazard, asymmetric and incomplete information].

Attention to Symptoms not Causes

- Even commercial banking, reforms not adequate
  - Capital and liquidity risks aimed at protecting individual banks, not preventing systemic events (though with higher buffers will lower the chances) [coordination externalities, fire sales as even HQLA will become illiquid in a crisis]
  - G-SIB and D-SIB charges not really tied to meaningful measures of the problem [coordination externalities, counterparty risks, asymmetric information, moral hazard]

Progress Inhibited by Lack of Analysis

- Even if (some) data were available, limited ability to take the models to the data to see which tools work best.
  - Would more information on exposures be sufficient to mitigate systemic problems? What are the benefits of confidentiality? Is the invisible hand too invisible?
  - *Why* do investors want new products that are money-like? Why are the old ones insufficient? How do existing regulations influence their liquidity (money-like) desires?
  - If risk aversion plays such an important role, why aren't we more concerned with measuring it directly.

Next Steps (A Personal View)

- On data
  - Move away from Flow of Funds
  - Collect exposure information (present and future); share it (at least among supervisors), possibly publish it (masked or aggregated?)
  - Engage in more market intelligence (especially on OFIs and new products)
  - Change laws to allow data collection to proceed and allow data sharing across and within borders
- On analysis
  - Conduct more analyses of tools, their calibration, and their effectiveness
  - Formulate better models for understanding systemic liquidity risks that are "measurable" and "testable" with data
  - Consider more about "behavior" in liquidity modeling—liquidity is a slippery concept—employ other techniques(surveys?) and insights (herding?)
- On regulation
  - Focus on root causes not superficial ones
  - Pay attention to regulatory arbitrage and "spillovers" across regulations

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