ILLIQUIDITY AND ALL ITS FRIENDS

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Funding and market liquidity

market liquidity
[securitization, resale] → "illiquid assets"

A	L
✓ T-bills, quasi-cash	✓ retail deposits
✓ other securities	✓ wholesale deposits
✓ "illiquid assets"	✓ MT/LT debt, hybrid securities
	✓ equity

$\left.\right\}$ issuing new securities/
diluting existing claimholders
= *funding liquidity*
[determinants: corporate governance, absence of debt overhang, ...]

Others: risk management, reputation risk, ...

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Hard to capture with a single statistics

Demand for liquidity

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(2) "Reserves"

self-hoarding
- low ST debt (relative to earnings)
- liquid assets on balance sheet
- resell, securitize less liquid assets

contracted for
- credit line, CDS, ...

Should liquidity be monitored?

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✓ Underhoarding key concern:

- regulator protects debt claims
- externalities (systemic risk)
- macro-prudential regulation.

MARKET LIQUIDITY BREAKDOWNS

- ✓ 2 causes: adverse selection and insufficient financial muscle (local liquidity).
- ✓ Recent work: adverse selection and market breakdowns highly endogenous.

SECURITIZATION

Well-known

- *rationales*

  [exit and reinvestment; demand for stores of value; diversification]

- *hazards*.

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Does perceived fragility create a stigma? (Malherbe 2009)

Assumption: banks have imprecise estimates of other banks' liquidity position.

Topsy-Turvy principle:

- funding liquidity: perceived fragility impairs refinancing

  [discount window, CCL, ...]

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- funding liquidity: perceived fragility impairs refinancing
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- market liquidity (securitization): Perceived fragility helps.

✓ Multiple equilibria:

market believes little liquidity $\Longrightarrow$ little adverse selection $\Longrightarrow$ securitization market operates $\Longrightarrow$ no need to hoard much liquidity,

and conversely.

Dang-Gorton-Holmström (2009): State-contingent liquidity

Background:

- Debt as a low-information intensity security

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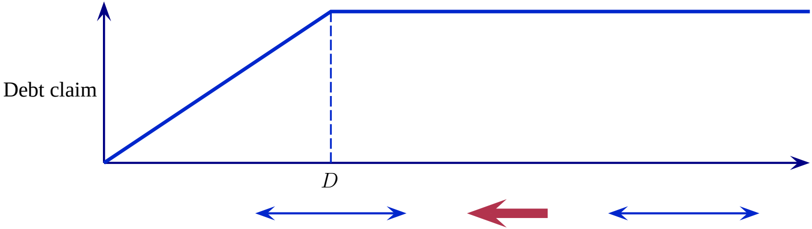
- Agents relying on market liquidity (short horizons) have a preference for easily resalable, low-information-intensity claims

  [Gorton-Pennacchi 1990]

DGH's double whammy argument:



Expected value here: information acquisition

freezing of market

Expected value here: LLI security, fully tradable

liquid

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FINANCIAL MUSCLE

Are there specialized buyers (with financial muscle) on other side?

- *Allen-Gale* (1994, 1998, ...) *cash-in-the-market pricing model*: precursor of fire-sale models:

$\left\{\begin{array}{l}\text{Lots of liquidity sellers} \\ \text{Price softness}\end{array}\right.$ → may trigger further sales & price decrease
[bankruptcy in their work, MVA]

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- Overhoarding: vulture behaviors; hoard liquidity to overbid rivals for distressed assets. Reinterpretation: wait for prices to decrease even more
  [Holmström-Tirole 2009]

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COUNTERPARTY RISK AND CONTAGION

✓ Regulators' lenient attitude toward OTC markets

[indirect form of regulatory evasion/put on taxpayer money]

$\Longrightarrow$ inter alia unregulated players had to be rescued

[AIG holding, investment banks]

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- multilateral netting
- transparency.

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✓ Benefits of centralized platforms with standardized products

- multilateral netting
- transparency.

Remarks:

- platform should be carefully monitored (avoid TBTF)
- can have bilateral exposures in centralized system

  [some payment systems]

  OK. Key is transparency and netting.

Reforms

- don't try to regulate everything:

  (1) insufficient staff,

  (2) migration
- insulate "regulated sphere" against large-scale defaults

  [representation hypothesis].

To this purpose impose high capital charges on OTC contracts.

Models of contagion

- ✓ Allen-Gale (2000) and others: domino effects:

  Caballero-Krishnamurthy (2009): as in Dang et al., information acquisition in bad times

  [here: about health of counterparty of counterparty of... Daunting task]

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- ✓ "Lucas critique": network of cross-exposures affected by

  - regulatory environment
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  [compare OTC and payment systems]

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✓ "Lucas critique": network of cross-exposures affected by

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[compare OTC and payment systems]

✓ What are bilateral exposures about?

Must go together with incentives to monitor. Otherwise not justified.

[Rochet-Tirole 1996 monitoring model]

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AGGREGATE LIQUIDITY

✓ Possibility of shortages

[Holsmtröm-Tirole 1998]

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Key:

Imperfect pledgeability of income

private demand
for liquidity

[none in Arrow-Debreu]

rationale for shortages of private
liquidity/public supply of liquidity

[creation of stores of value]

OPTIMAL BAILOUTS

- ✓ Recent crisis: dire consequences of a widespread maturity mismatch:
  - Commercial banks' liquidity support to conduits, and wholesale borrowing.
  - Increase in market share of investment banks (which rely more on repos and CP than retail banks).
  - Primary dealers.
  - LBOs, households (ARMs, refinancing), ...

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✓ Widespread monetary and fiscal bailouts.

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[Farhi-Tirole 2009]

Benefit: Rescue institutions that rely on the wholesale market for funding.

A CALL FOR MACRO-PRUDENTIAL REGULATION

[Farhi-Tirole 2009]

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Monetary bailouts: Costs of low interest rates

- wedge MRS/MRT
- (implicit) subsidy to borrowers
- sows seed of next crisis. Three channels: incentive to lever; incentive to borrow short; reputation
- inflation; price dispersion (New Keynesian models).

Observation:

Distortion costs are to a large extent "fixed"

$\Longrightarrow$ strategic complementarities

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When everyone engages in maturity transformation....

- authorities have little choice but enabling refinancing
- refusing to adopt risky balance sheet lowers ROE.

Consequences

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- *Endogenous macroeconomic uncertainty.* In contrast with CAPM, banks, if can choose states of nature in which face financial difficulties, have an incentive to choose perfect positively correlated positions.
- An increase in probability of distress may well *reduce* liquidity/capital insurance.
- *TI problem*: central bank would like to commit to rigorous monetary policy. But when push comes to shove...

$\Longrightarrow$ rationale for macro-prudential regulation

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- Need to monitor *quality* of liquid assets. SC in substituting toward toxic assets.

- Monitor liquidity of strategic and politically powerful agents.

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OPTIMAL BAILOUT PACKAGE

Mechanism design (optimal monetary + recapitalization bailout)

- *Question*: Does monetary policy still have a role? Involves subsidy anyway, and is not targeted...

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- *Question*: Does monetary policy still have a role? Involves subsidy anyway, and is not targeted...

  Answer: monetary policy helps those who really need refinancing. Fiscal bailouts are more restricted, but may hand over money to institutions that do not need it (analysis: authorities face adverse selection).

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Thank you very much!

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