

# Financial Regulation in a System Context

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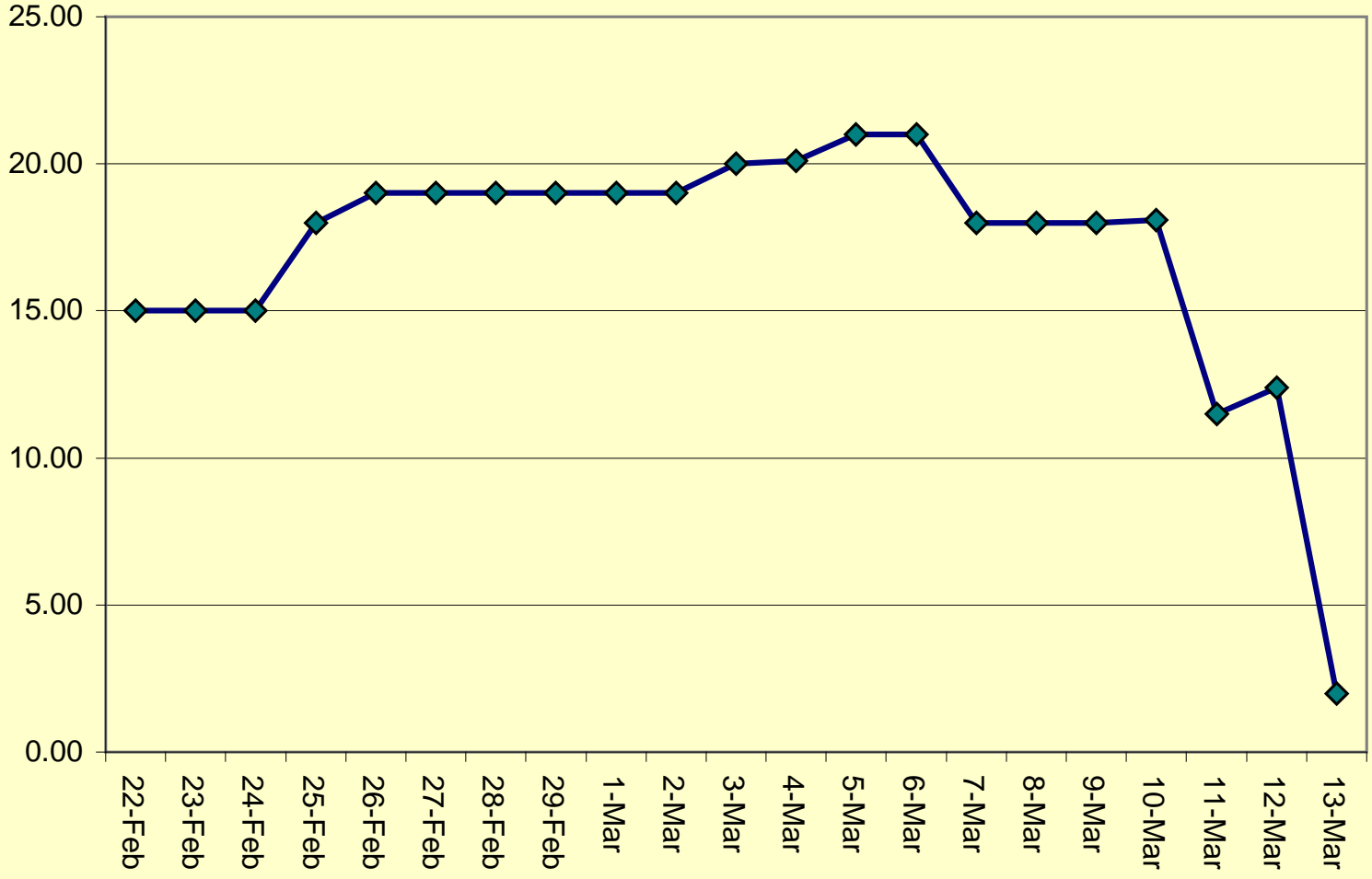
# Basel-style Capital Standards

- Problem is default by borrowers
  - Focus on asset side of balance sheet
- Capital is buffer to protect creditors
  - Especially retail depositors
- Preferred shares and subordinated debt are capital

# Bear Stearns

- Bear Stearns failed because of run by creditors, not defaults by borrowers
- (Immediate) problem was on *liabilities side* of balance sheet

**Bear Stearns Liquidity Pool (US\$ billions)**  
**(Source: SEC)**

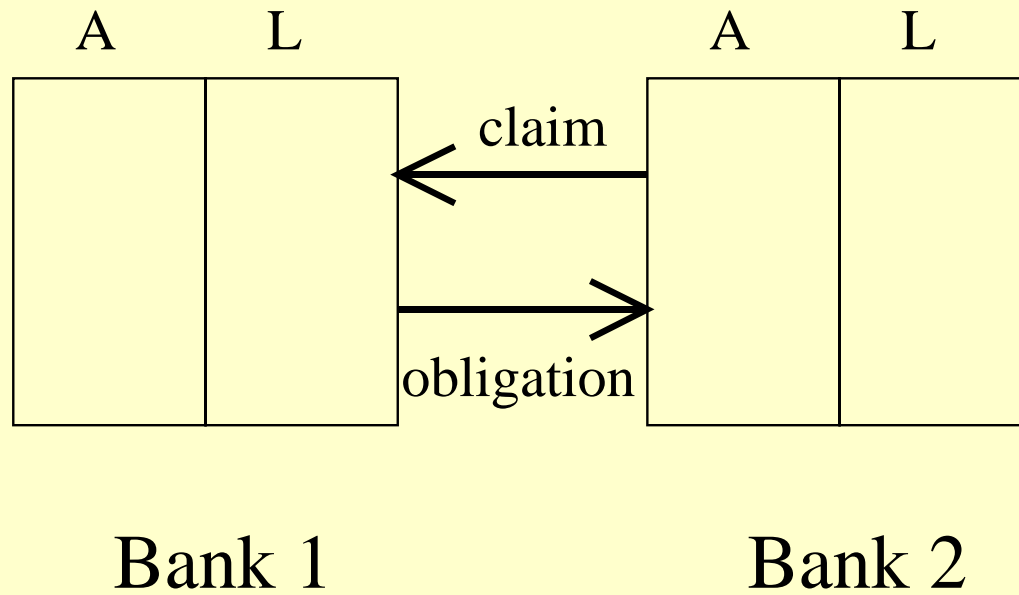


# Micro- and Macro-prudential Perspective

*“Ensuring the soundness of each individual institution ensures soundness of system as a whole”*

- Can this serve as the basis for a prescriptive rule?
- Yes, if following micro-prudential imperative invariably promotes overall stability
- But...

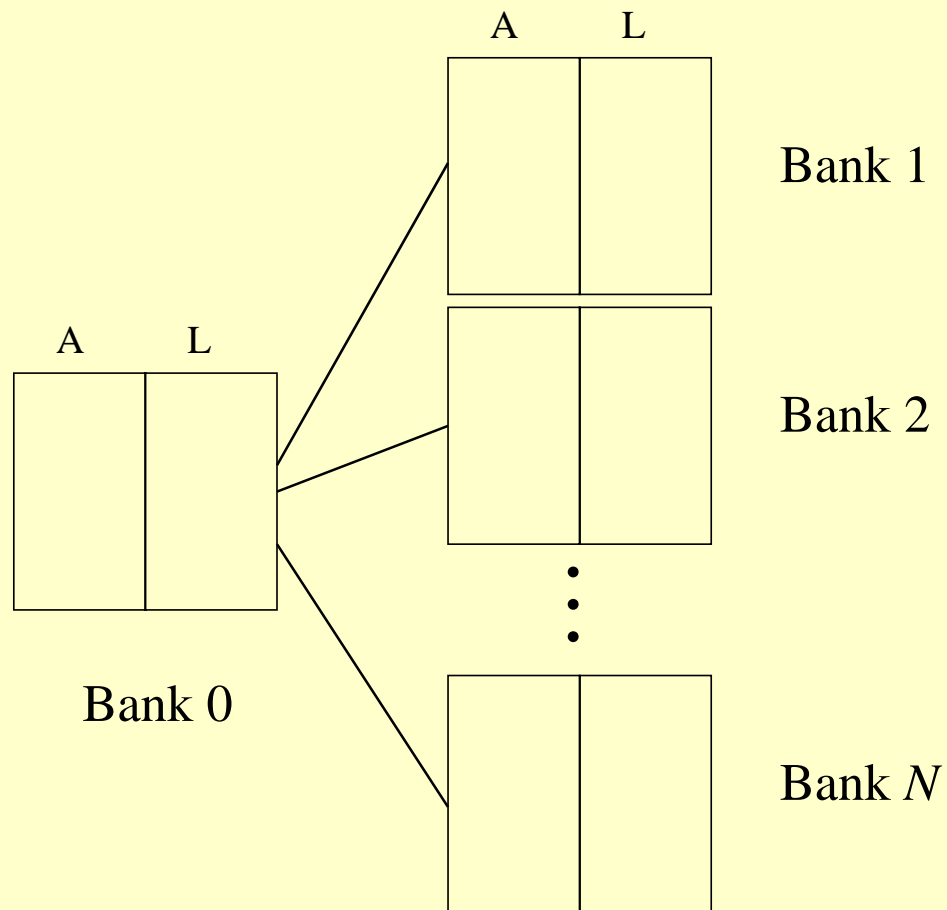
# Figure 1



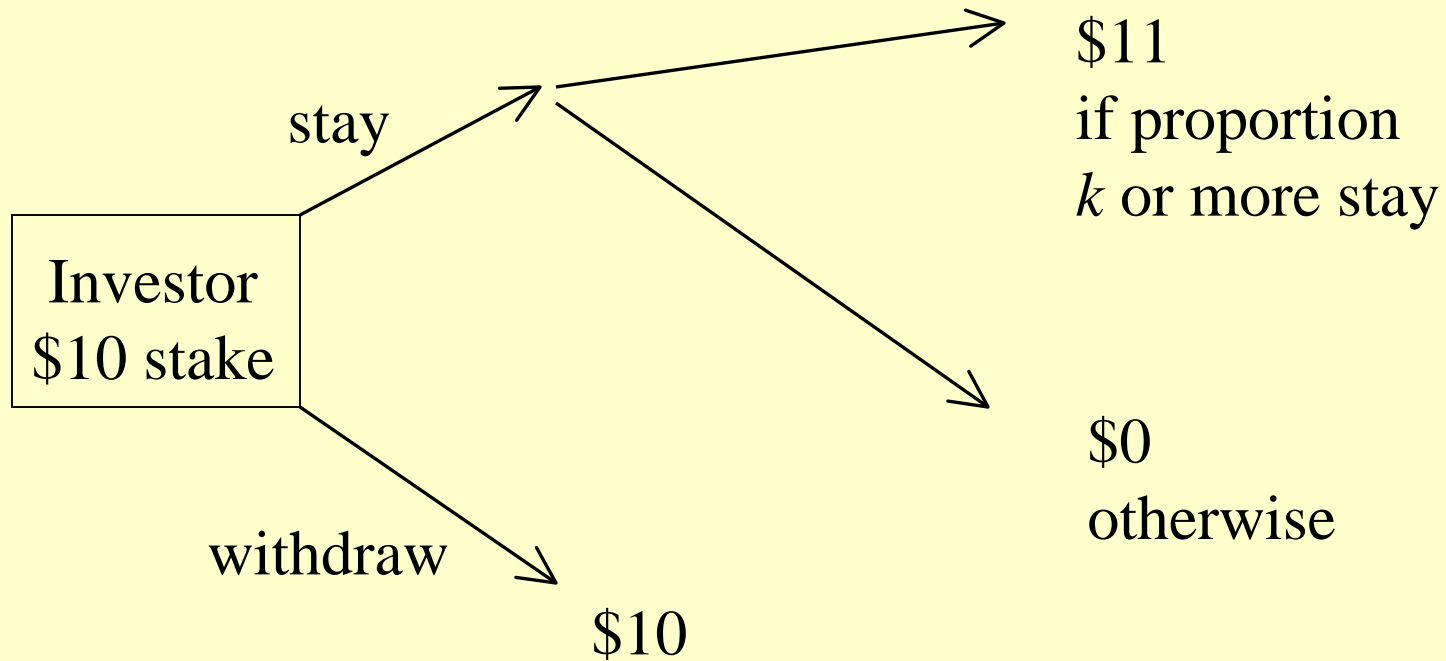
# Proposition 1

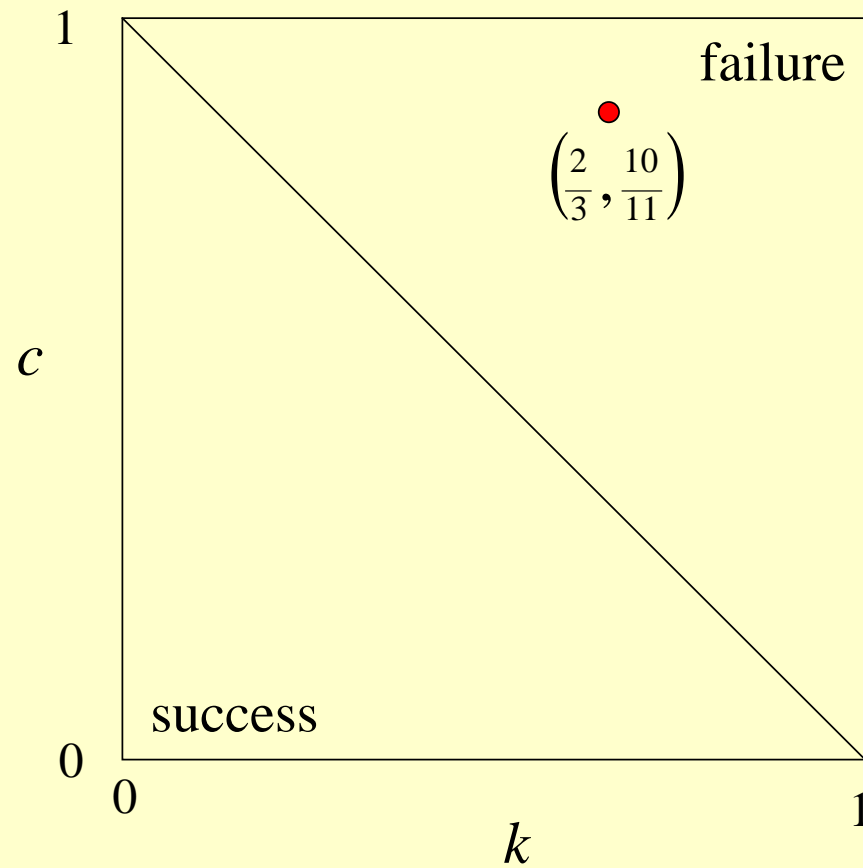
It is possible that actions that enhance the soundness of an individual financial institution undermine the stability of the system as a whole.

# Figure 2



# Summers (2000)



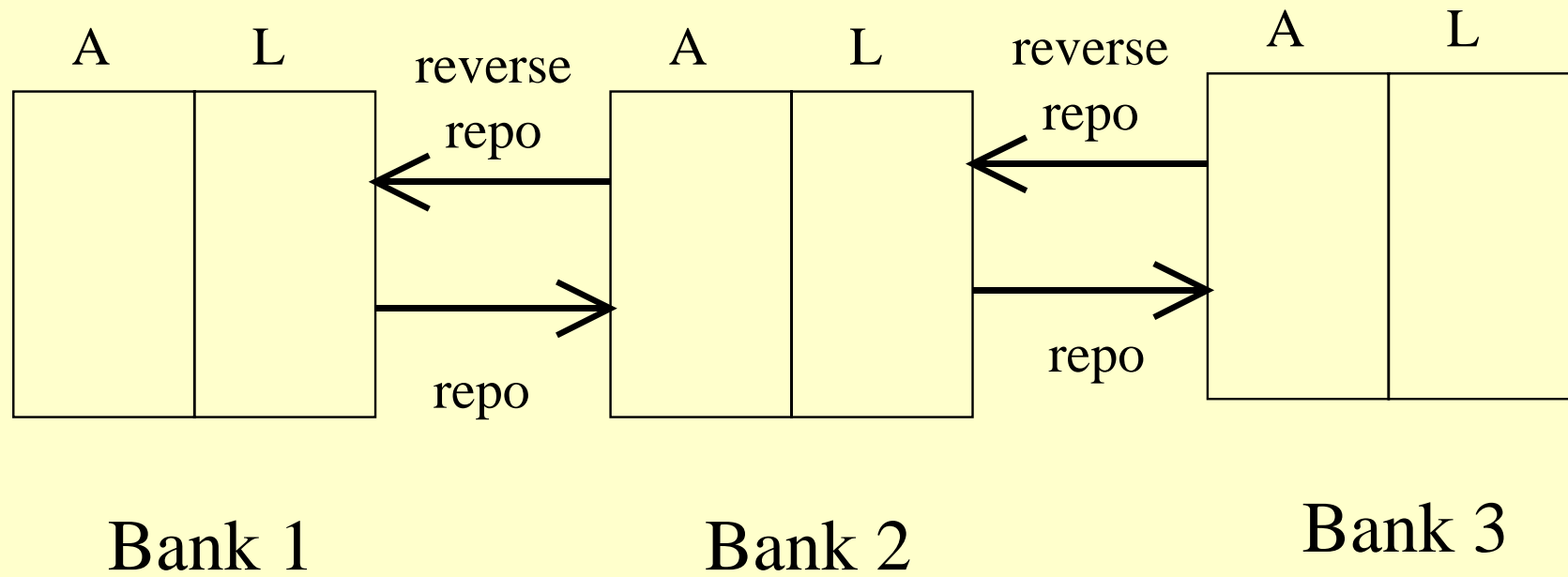


$c$  is cost of miscoordination as fraction of good payoff

## Proposition 2

A creditor run is more likely if the coordination threshold is high or when the cost of miscoordination is high. Policies that lower the coordination threshold and the cost of miscoordination are likely to promote system stability.

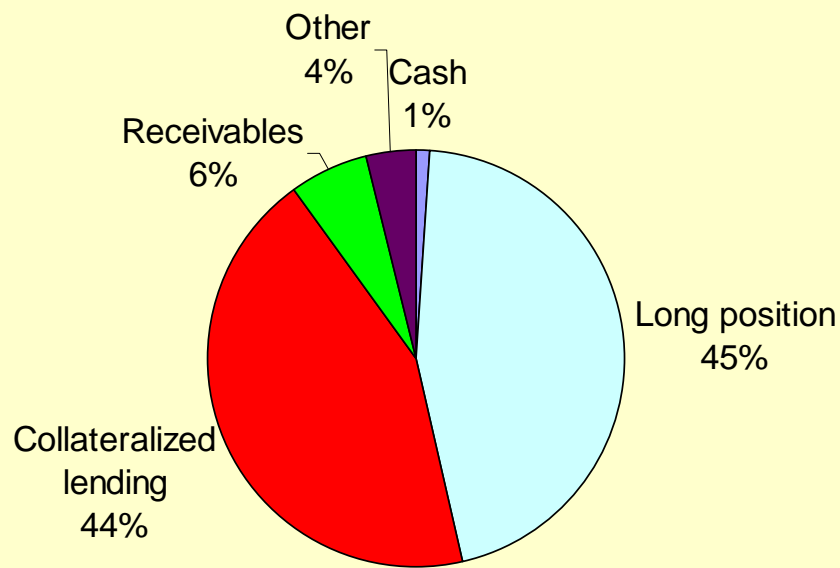
# Figure 4



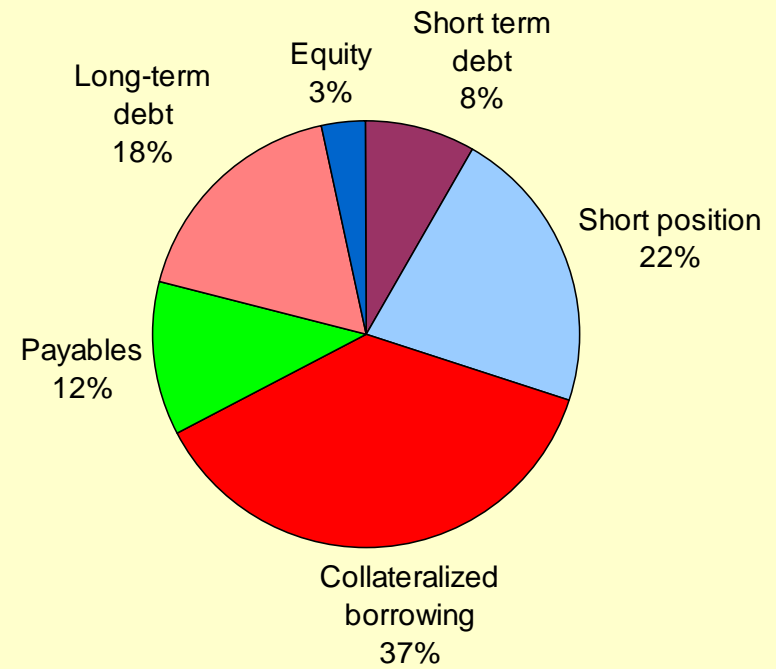
## Proposition 3

There is a distinction between risky assets and systemically important assets. Safe assets can be systemically important.

# Lehman Balance Sheet (2007)

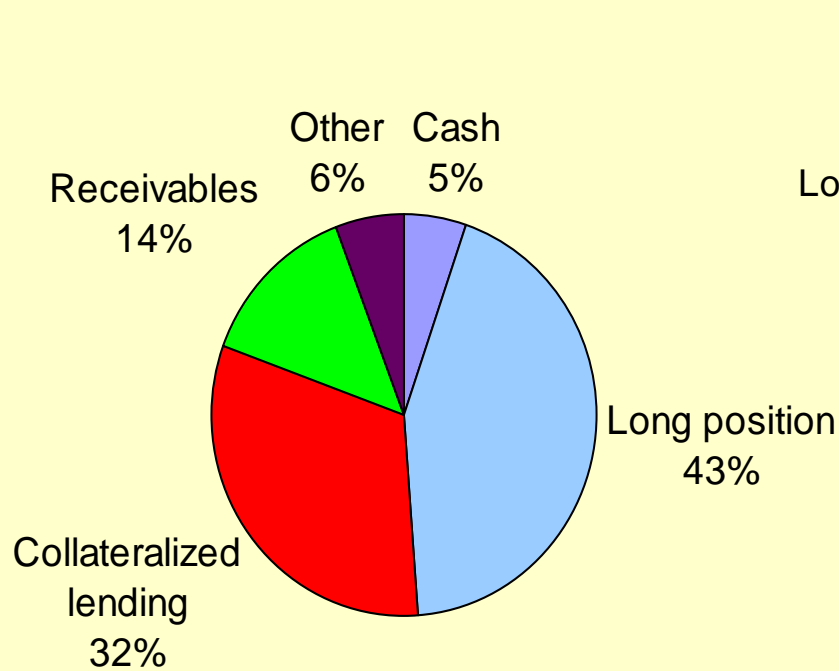


Assets

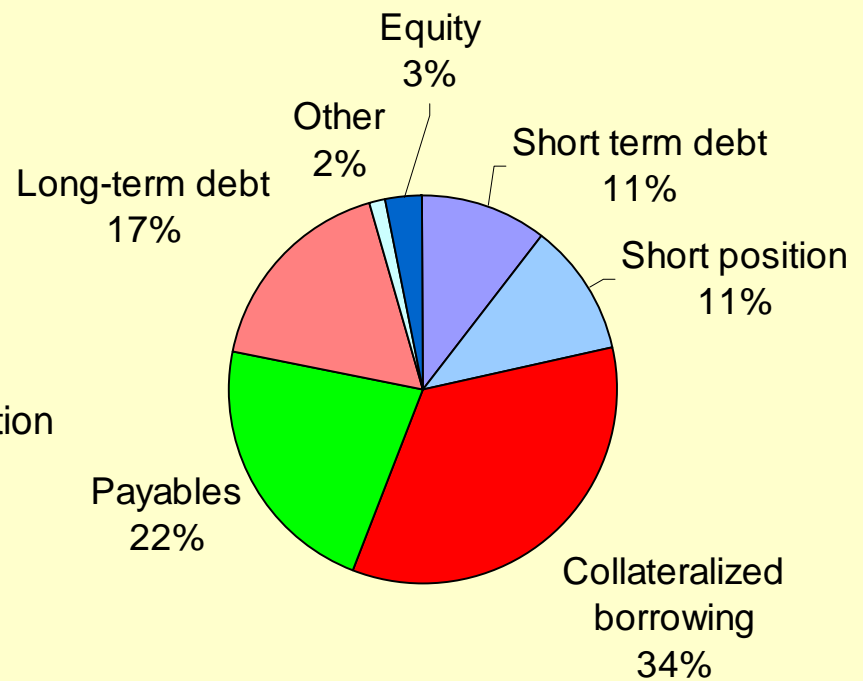


Liabilities

# Bear Stearns Balance Sheet (2007)

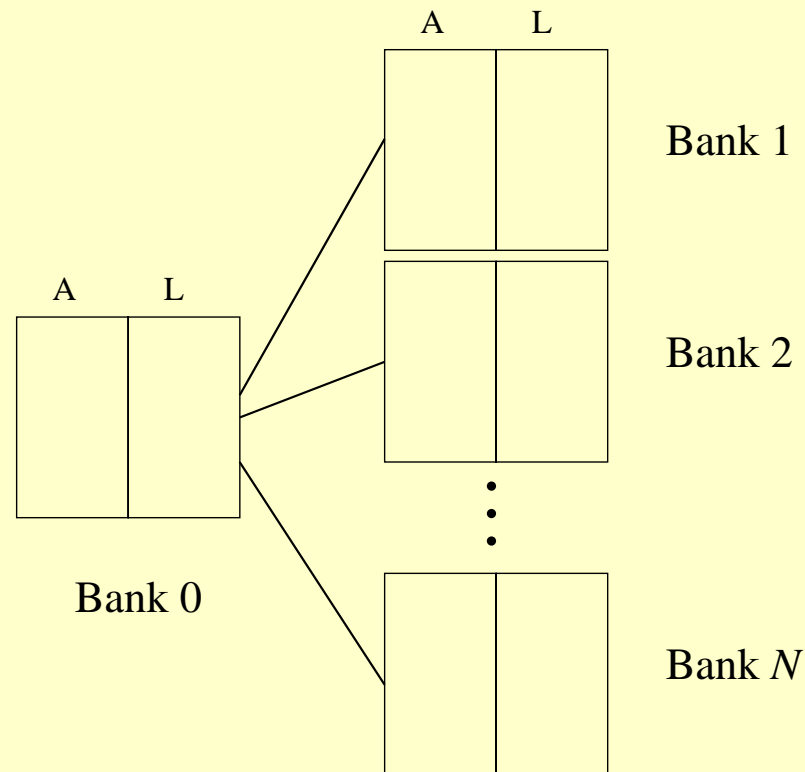


Assets



Liabilities

# Liquidity Regulation



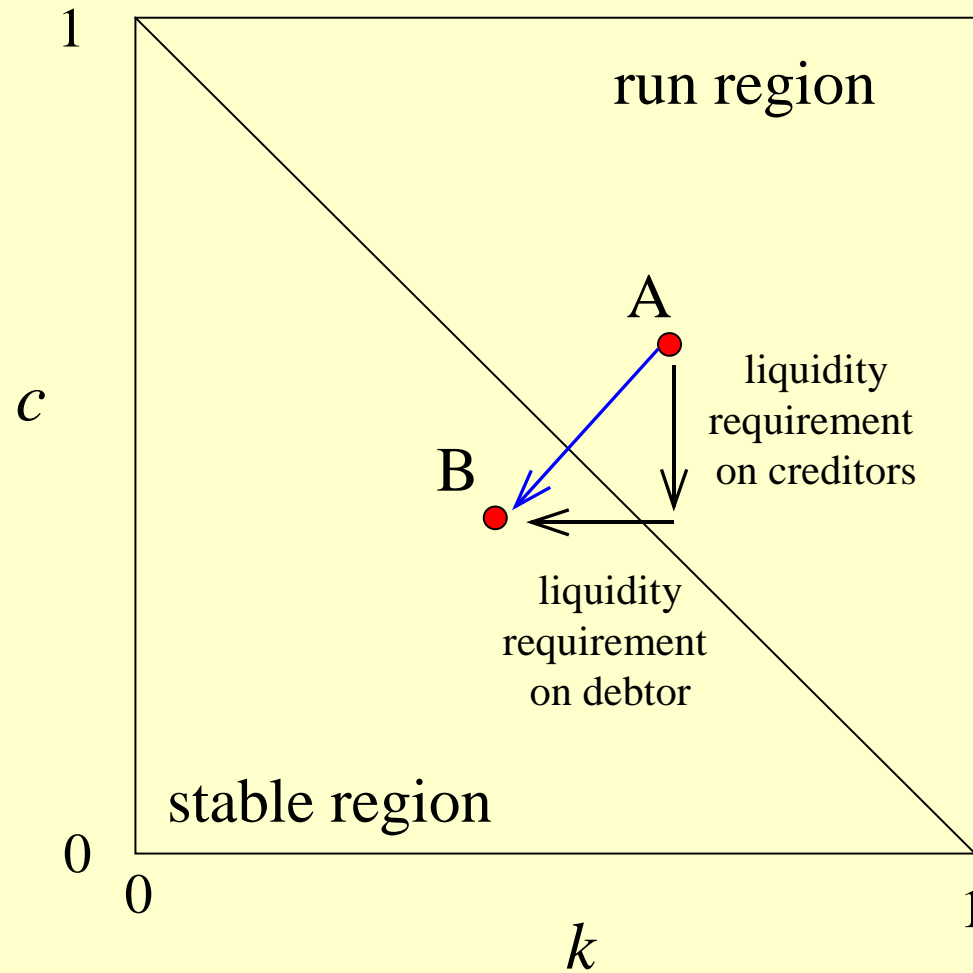
Make Bank 0 more resilient

Make creditor banks less trigger-happy

# Liquidity Regulation

- Vicious circle of reasoning leads to run
- Harness the same externalities to promote virtuous circle of reasoning
  - More robust debtor and more relaxed creditors
- Required liquidity levels may not be so onerous if distributed well in the system

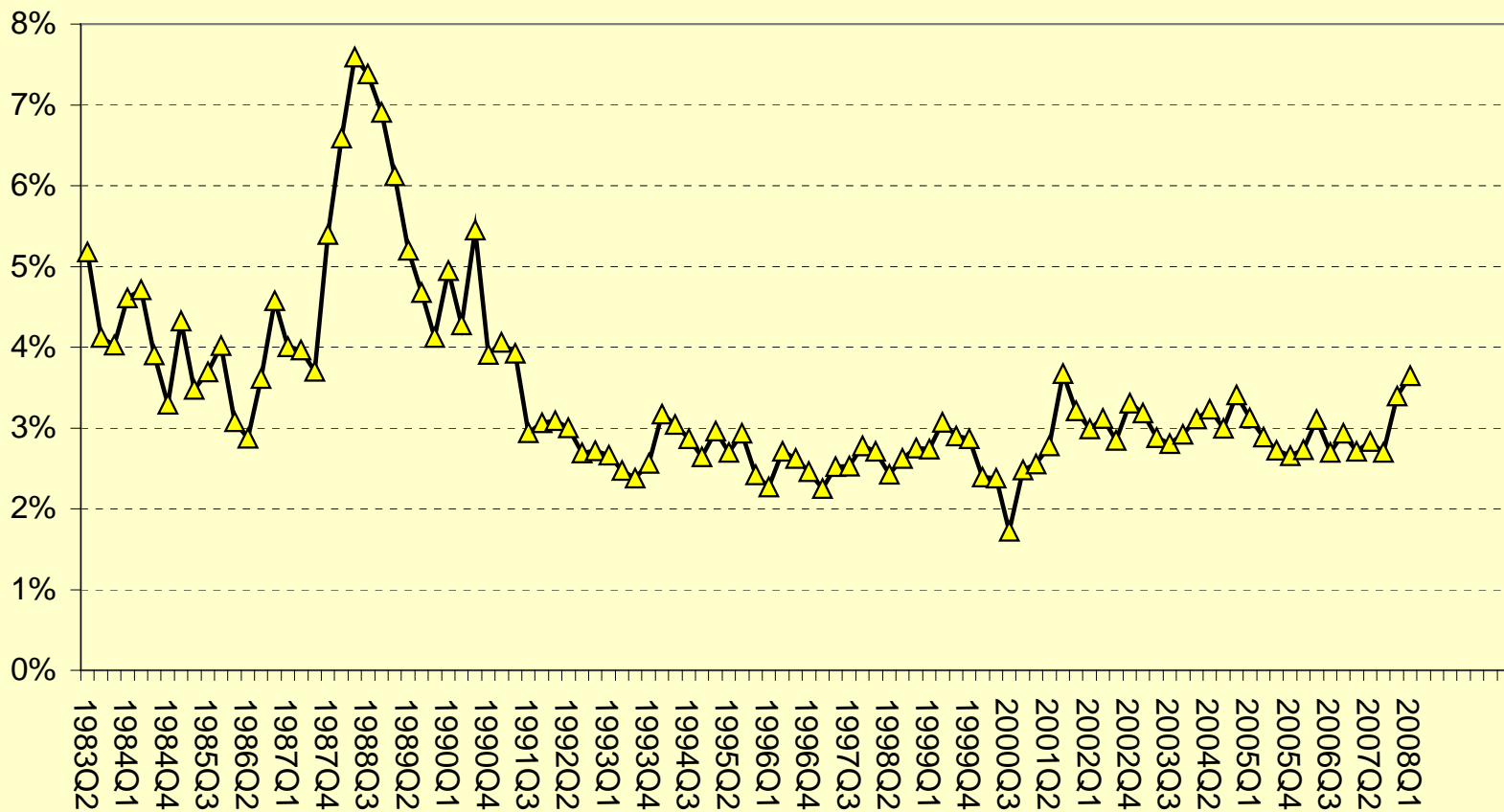
# Liquidity Regulation



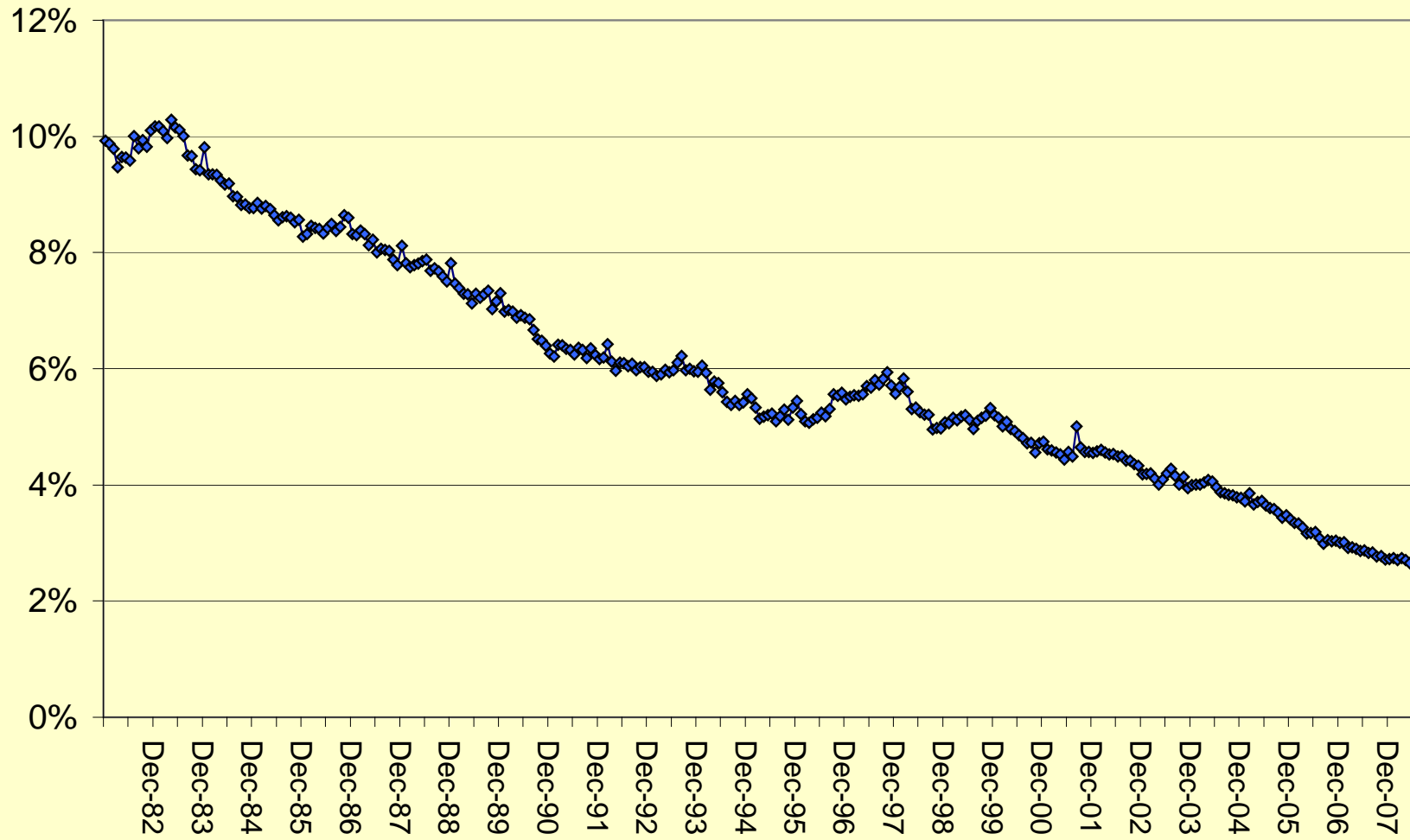
# Tri-party repos

- Money market mutual funds have high cost of miscoordination  $c$
- Presence of jittery (or constrained) creditors makes stabilizing reinforcement less likely from others

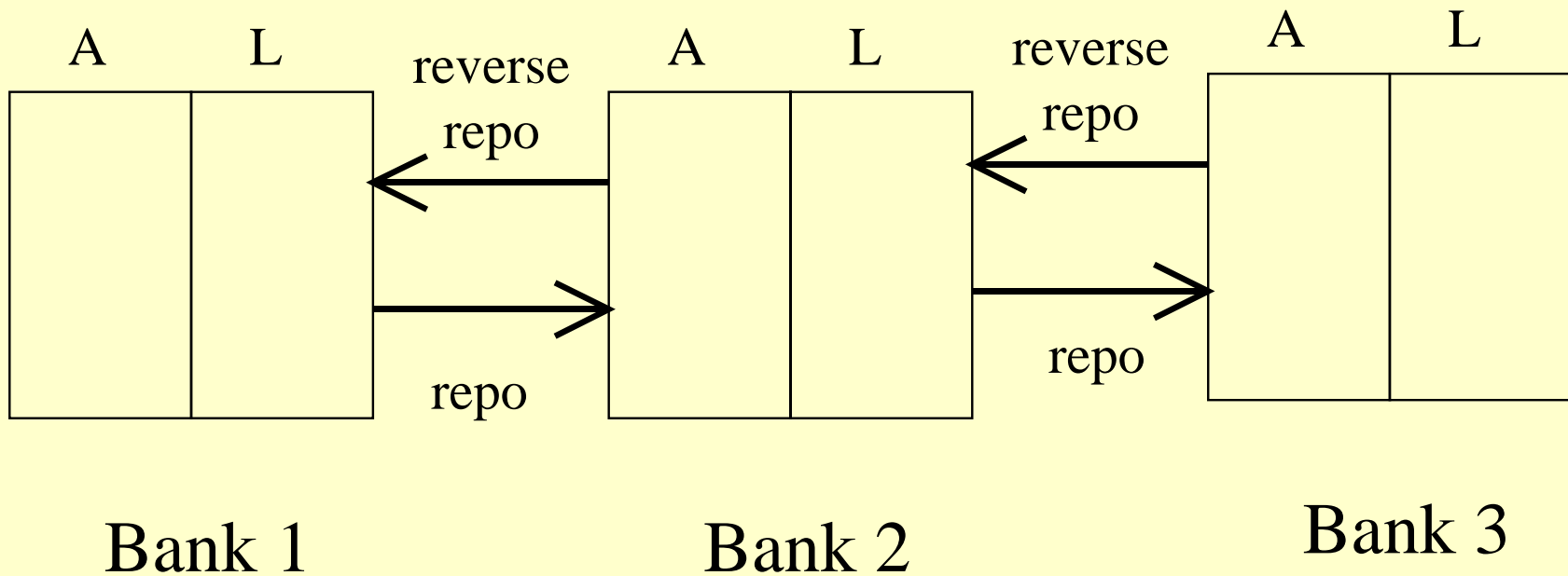
US Broker Dealer Sector  
Ratio of Cash to Total Financial Assets  
(Source: US Flow of Funds)



## Cash Assets of US Commercial Banks



# Secured Funding



Scenario: generalized increase in haircuts

# Secured Funding

- If haircuts rise from 2% to 4%, permitted leverage falls from 50 to 25
- Evidence suggests bulk of adjustment happens through shrinking of assets
  - Bank 2 can adjust down flexibly
  - Bank 1 suffers a run

# “Lump of Liquidity” Fallacy

- “Liquidity” suggests stock that can be reallocated
- But liquidity is better understood as *growth* of balance sheets – as a flow
- Liquidity doesn’t get reallocated – it disappears altogether
- Secured funding is less secure for the system than cash

# Leverage Regulation

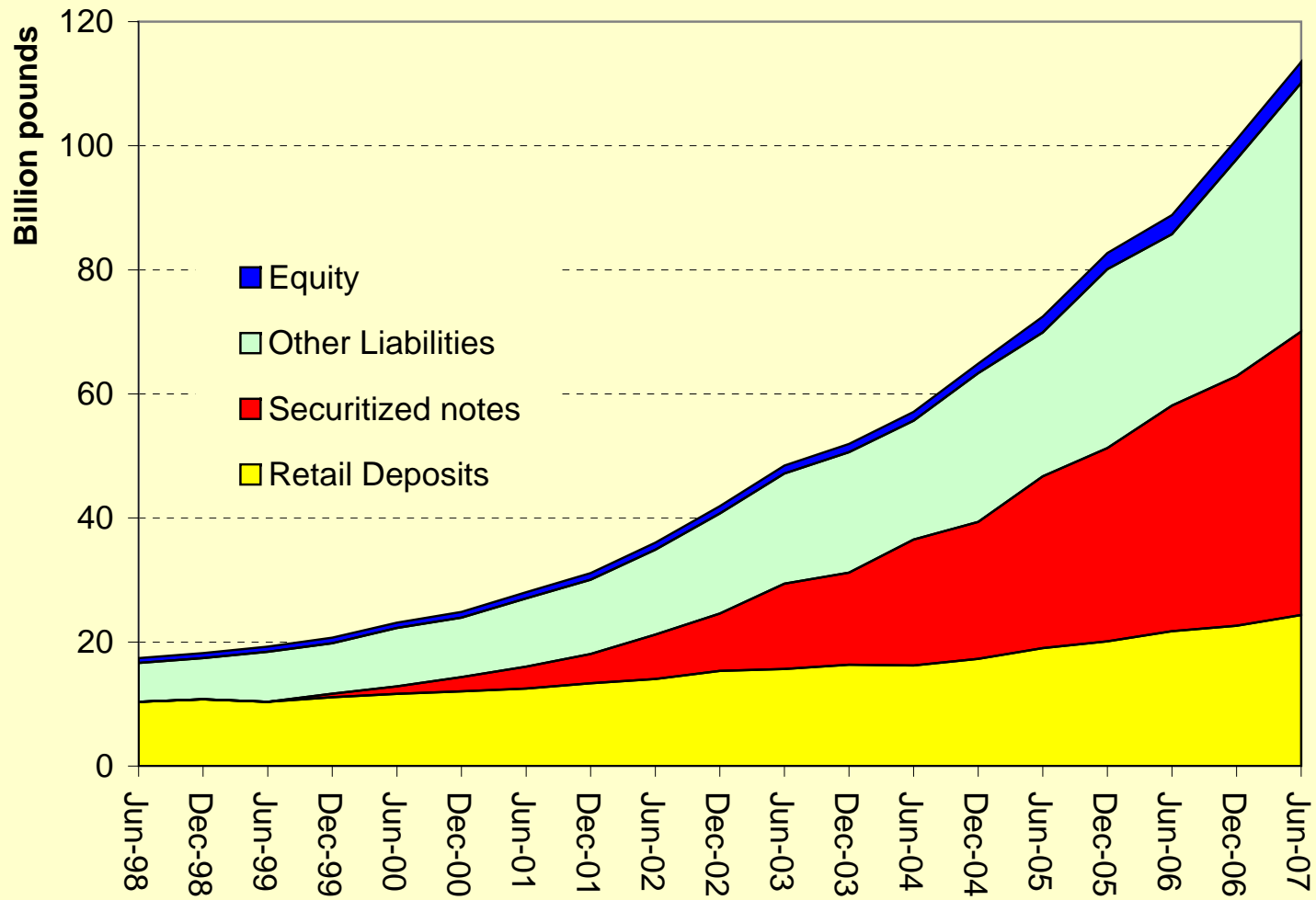
- Leverage regulation aims to prevent excessive erosion of haircuts in peak of the financial cycle
  - “reaching for yield” is especially precarious
- Leverage regulation is non-risk-weighted capital requirement
  - safe assets  $\neq$  systemically unimportant

# Measuring Leverage

- Numerator (Assets)
  - securitized assets
  - derivatives hedges
- Denominator (Equity)
  - common equity
  - common equity + preferred shares
  - common equity + preferred shares + sub debt

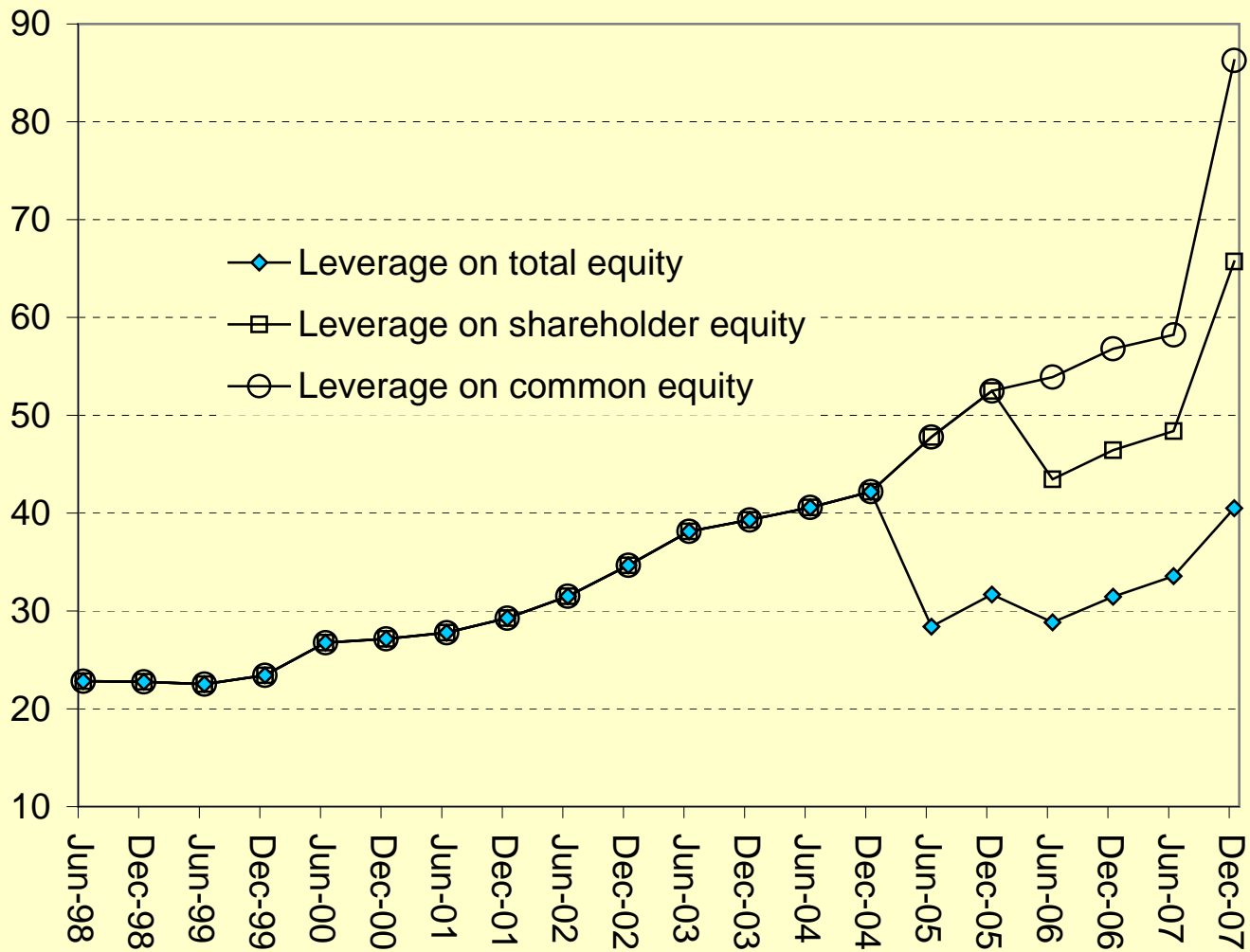
# Composition of Northern Rock's Liabilities

(June 1998 - June 2007)



# Northern Rock's Leverage

June 1998 - December 2007



# System Risk-weighted Capital Requirements

- Bank that lends to high system-weighted banks has high system weight
  - fixed point calculation
  - but infeasible without simplifying further
- Traditional regulatory segregation can sometimes be along natural boundaries
- Summary measures
  - Adrian and Brunnermeier (CoVaR)

# Countercyclical Capital

- Liquidity requirements and leverage constraints are complementary with counter-cyclical capital requirements
- Kashyap, Rajan and Stein (2008)