Banking crises

ECON4335 Lecture 8

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Banks and the macroeconomy

From Ragna's lectures

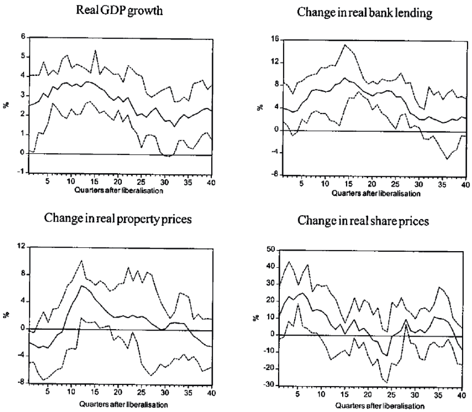
Credit channel:

- ▷ Cut in policy interest rate improves balance sheets, cash flows and collateral values
- ▷ External finance premium reduced both for banks, firms and households
- ▷ Strengthened effect of interest rate cut

- Same mechanism strengthens the effects of shocks from real economy
- Credit rationing may occur

Macroeconomic shocks from bank sector

- Regulatory changes
- Financial innovation
- Organizational innovation
- New technology
- behavioral changes



Note: Solid lines are sample averages, dotted lines are upper and lower quartiles..

From Goodhart et al OEP 2004

Relation to banking crises

- Problems with solidity or liquidity in banks raise external finance premiums
- May also result in credit rationing and / or price discrimination
- With relationship banking: Closing of bank means loss of information and increased external finance premium
- Closing of bank destroys the liquidity of customers, immediate need for external financing

Banking crises

- Liquidity crisis
- Solvency crisis

Bagehot: *Lombard Street* 1873.

> *To avert panic central banks should lend early and freely (i.e.without limit) to solvent firms against good collateral and at high rates*

One problem quickly turns into another
- higher borrowing costs, fire sales

Typology

- Crisis in individual bank
- Crisis in systemically important bank
- Systemic banking crisis
- Crisis in financial system

Reinhart and Rogoff: 114 "national" banking crises since 1945

Banks are vulnerable

- Borrowing short, lending long
- Extreme leverage

- Basel rule: Requires 8 per cent capital relative to *risk weighted assets*
- Liberal rules for counting subordinate loans as capital
- Genuine equity can be down to 2 per cent of total assets or even less

Contagion

- loans between banks
- unsettled trades and payments
- derivatives
- perceptions of risk
- effects on customers of other banks

Nobody knows all the exposures on a given day

Too big?

- Too big to fail
- Too interconnected to fail
- Too big to save

Moral hazard

Money market freeze

- Unsecured, short-term loans from other banks, money market funds etc
- Banks have to trade before day is over
- Little time for information gathering
- More efforts to collect information when trouble
- More asymmetric information, lemons problem
- Margin on interbank increase sharply, market may virtually close down
- Problem reinforced because every banks wants to improve liquidity
- Bank lending rates go up, blacklisting, credit rationing

CB as lender of last resort

Central banks can

- ▷ Extend more loans on the usual terms
- ▷ Accept new kinds of collateral
- ▷ Extend the duration of loans
- ▷ Lower its own interest rates (keeping lending rates above deposit rates)

CBs may prevent contagion to non-bank sector if conditions right

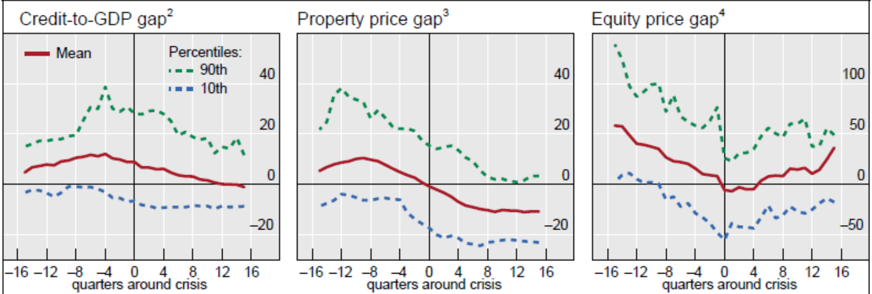
- ▷ Most banks must be solid
- ▷ Action must be swift, or solidity will suffer
- ▷ Zero lower bound on interest rates must not be effective
- ▷ Low policy rates must not be in conflict with goals of monetary policy

Widespread banking crises in mature economies result from loan-losses that threaten bank solvency

Warning signs

- Borio and Dreher
- Reinhart and Rogoff
- Allen and Gale
- Vale
- Diamond and Rajan

Credit and asset price behaviour around banking crises[1]



[1] The historical dispersion of the relevant variable is taken at the specific quarter across all crisis countries. Gaps are estimated using a one-sided rolling Hodrick-Prescott filter with lambda set to 1600. [2] In percentage points as deviations from trend. [3] Weighted average of real residential and commercial property prices with weights corresponding to estimates of their share in overall property wealth; the gap is in per cent relative to trend. [4] Equity prices are measured in real terms; the gap is in per cent relative to trend.

Sources: National data; BIS calculations. Graph 1

From Borio and Dreher

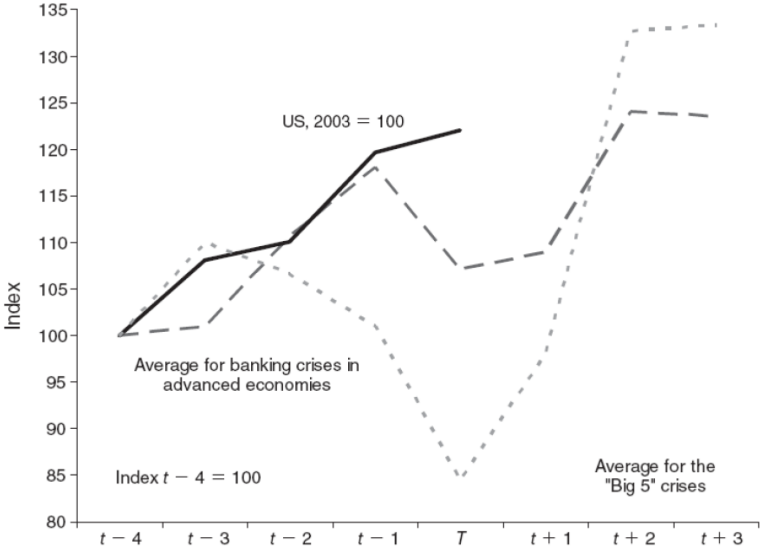


FIGURE 2. REAL EQUITY PRICES AND BANKING CRISES

Source: Reinhart and Rogoff

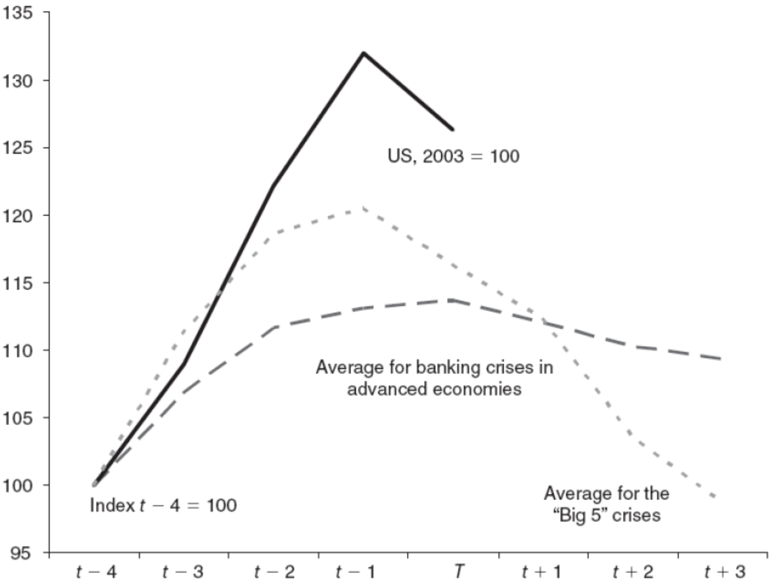


FIGURE 1. REAL HOUSING PRICES AND BANKING CRISES

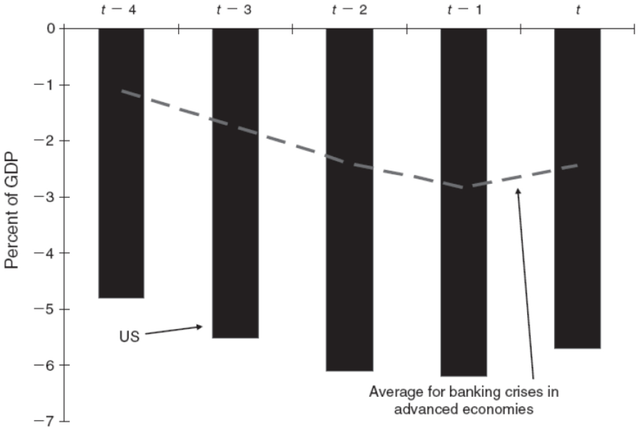


FIGURE 3. CURRENT ACCOUNT BALANCE/GDP ON THE EVE OF BANKING CRISES

Source: Reinhart and Rogoff

Some known risk factors

- Rapid increases in asset prices,
  - commercial property, land, housing, shares, ...
  - Christiania 1899, Ireland 2008, US 2008
- Rapid credit growth
  - Christiania 1899, Ireland 2008,.....
- High real investments, especially construction activity - Christiania 1899, Ireland 2008, ...
- Falling price level, rapid disinflation
  - Norway 1920-28, Norway 1991...

More risk factors

- Deregulation, financial innovation, increased competition
  - the Nordic crisis ca 1990 (Norway, Sweden, Finland), US 2008
- Expansion to new markets, new banks
  - Iceland 2008, Ireland 2008
- High capital inflows, real appreciations
  - twin crises, Asia / Emerging markets 1997-99
- Reliance on wholesale funding
  - Christiania 1899, Ireland 2008, Iceland 2008

Problem: False positives

Risk control

Risk factors occur frequently, banking crises more rarely.

- Good banking practices
- Bank capital requirements
- Accounting rules
- Supervision
- Deposit insurance
- Central Bank liquidity supply when system stressed
- Orderly and quick procedures for closing banks
- General macroeconomic policies

The aftermath of severe banking crises

- Longer and more severe recessions
  - output down 9 per cent
  - unemployment up 7 per cent
- Fall in real house prices
  - 35 per cent over 6 years
- Fall in real equity prices
  - 55 per cent over 3.5 years
- Increased government debt
  - 86 per cent

Reinhart and Rogoff (2009, article AER)
Cause or effect?

Bubbles - definition

- Asset price that deviates from fundamental values
- Share price that exceed the present value of future expected dividends
- House price that exceeds the expected present value of future rents
- Bubbles may burst even if no new information has arrived
- Assets may show bubble-like movements without actually being out-of-touch with fundamentals

Rational bubbles

- Sole reason to invest in the bubble is the belief that it will continue and get bigger
- Rational bubbles must have an expected return that exceeds the interest rate, but is below the growth rate of the economy
- If the rate of return is above growth rate, bubble is certain to burst
- Rational bubbles can only exist if interest rate is below growth rate

Keynes on asset prices

A conventional valuation which is established as the outcome of the mass psychology of a large number of ignorant individuals is liable to change violently as the result of a sudden fluctuation of opinion due to factors which do not really make much difference ...the market will be subject to waves of optimistic and pessimistic sentiment, which are unreasoning and yet in a sense legitimate where no solid basis exists for a reasonable calculation.

It might have been supposed that competition between expert professionals,..., would correct the vagaries of the ignorant individual left to himselves. ...however..most of these persons are,in fact, largely concerned not with making superior long-term forecasts of the probable yield of an investment over its whole life, but in foreseeing changes in the conventional basis of valuation a short time ahead of the general public."

Keynes: *The General Theory of Employment, Interest and Money*, p. 154

Irrational exuberance

- Momentum investors automatically invest in bubbles
- Momentum investors earn money over long periods
- Replicating actions that have been successful for others is often a good strategy outside of financial markets
- This time is different