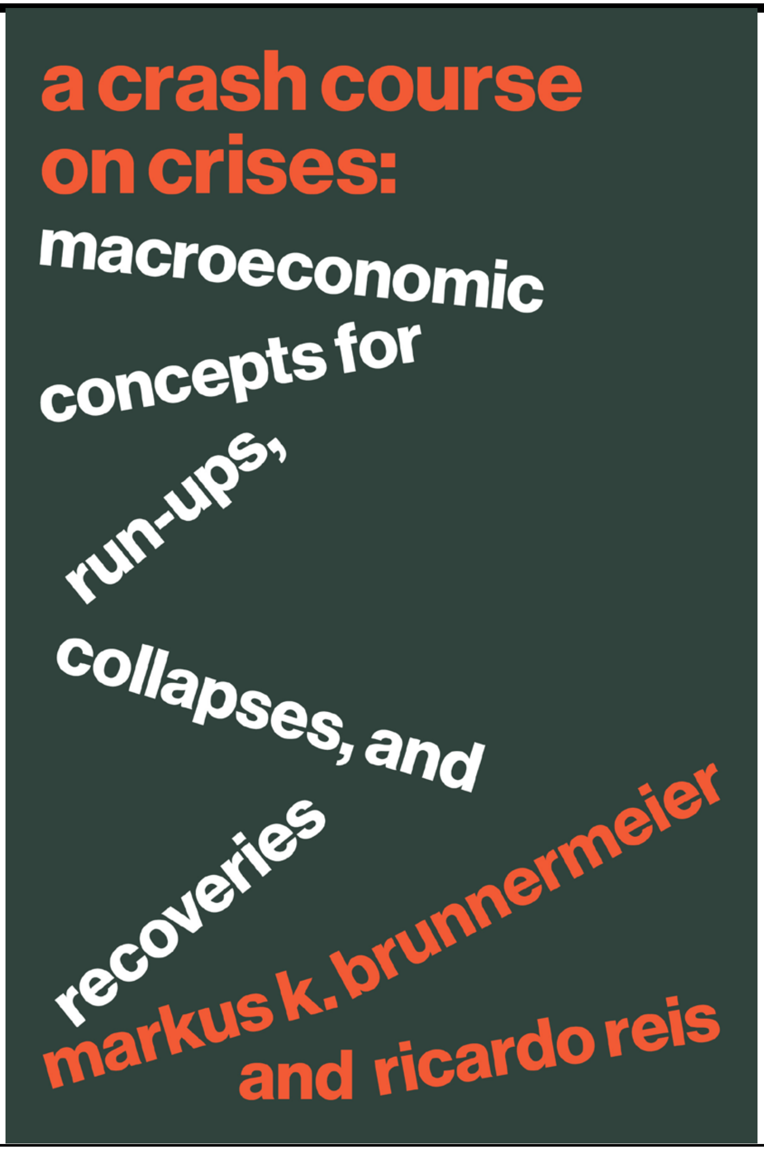
CHAPTER 7

THE NEXUS BETWEEN THE PRIVATE AND PUBLIC SECTORS

The Diabolic/Doom Loop

European Banks and Their Sovereigns in 2007-10

Argentina’s 2001-02 Crisis



WHY DO BANKS HOLD GOVERNMENT DEBT?

Banks hold a significant amount of national debt (US is an exception). Many reasons:

01

Regulation forces banks to hold a fraction of their assets in safe securities.

Government debt is treated as riskless. When the probability of default is high, the interest rate of public debt is higher and therefore becomes an attractive investment.

02

Government debts are accepted as favourable collateral by central banks.

By holding government bonds as assets, banks will have access to central bank liquidity, especially during fiscal crises – borrowing from the central bank using risky government bonds as collateral.

03

Public debt markets in many countries are organised in way that requires banks to hold them temporarily.

Banks buy bonds first after public issuance and then resell them over time. Banks are the primary dealers of government bonds and often take time to find buyers.

04

The government must find buyers for its risky debt and thus uses "**moral suasion**" to pressure banks into buying their bonds beyond their risk-return.

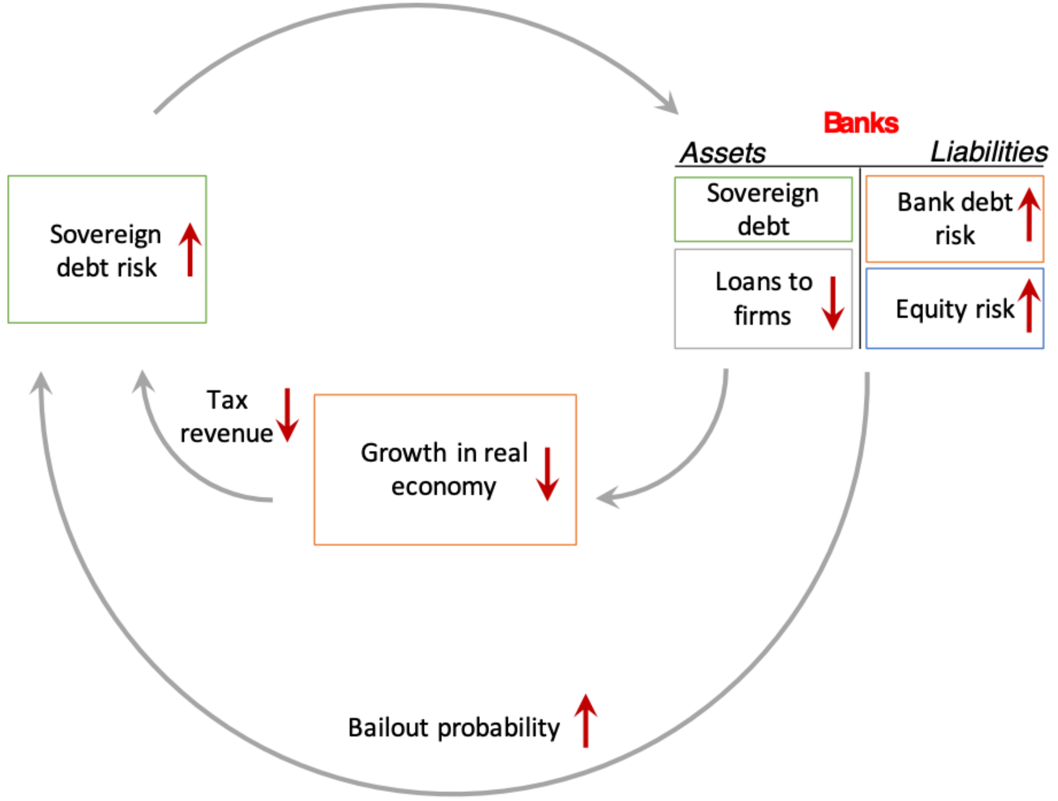
This may be desirable: for instance, by making banks hold many government bonds, the government can commit not to default because it fears financial crisis.

GOVERNMENTS PROTECT BANKS

- Banks often count on both **explicit and implicit guarantees** from the government:
  - **Explicit**: Government insure some banks to reduce incentives for a bank run
  - **Implicit**: If a bank is large enough, its failure spills over to many sectors that rely on banks to handle payments and obtain short-term credit as part of their normal operations. Government would not allow that, preferring to bail out such banks than to deal with the consequence of bank failure.
- Government often choose to bail out banks
  - Even without official guarantees beforehand
  - To avoid large economic cost of bank failing

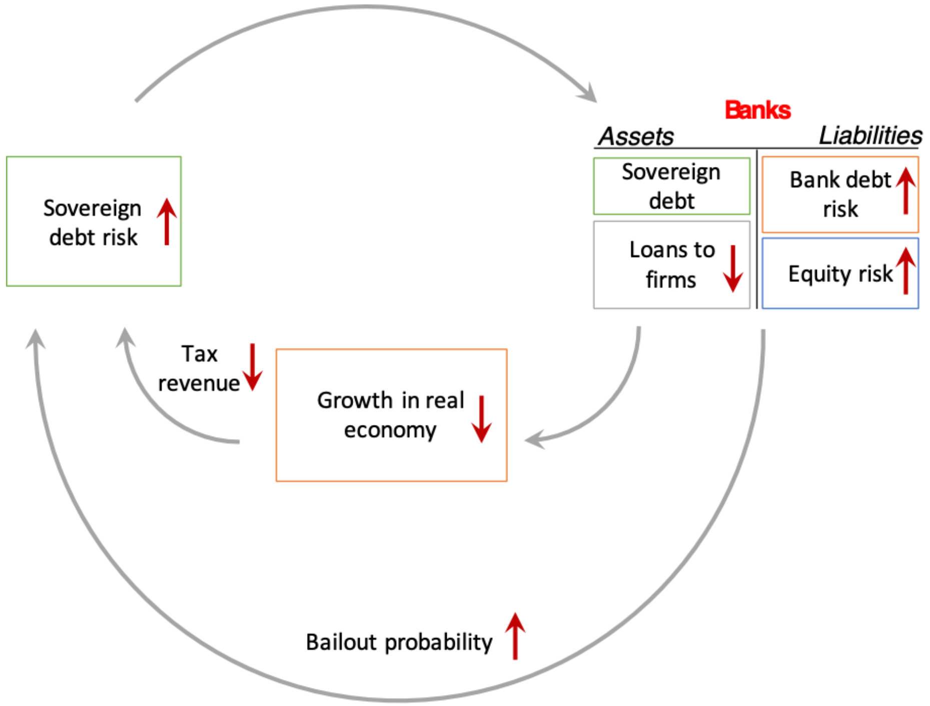
THE DIABOLIC LOOP

Concentration of national bonds held by national banks and government guarantees to banks create a diabolic (or doom) loop



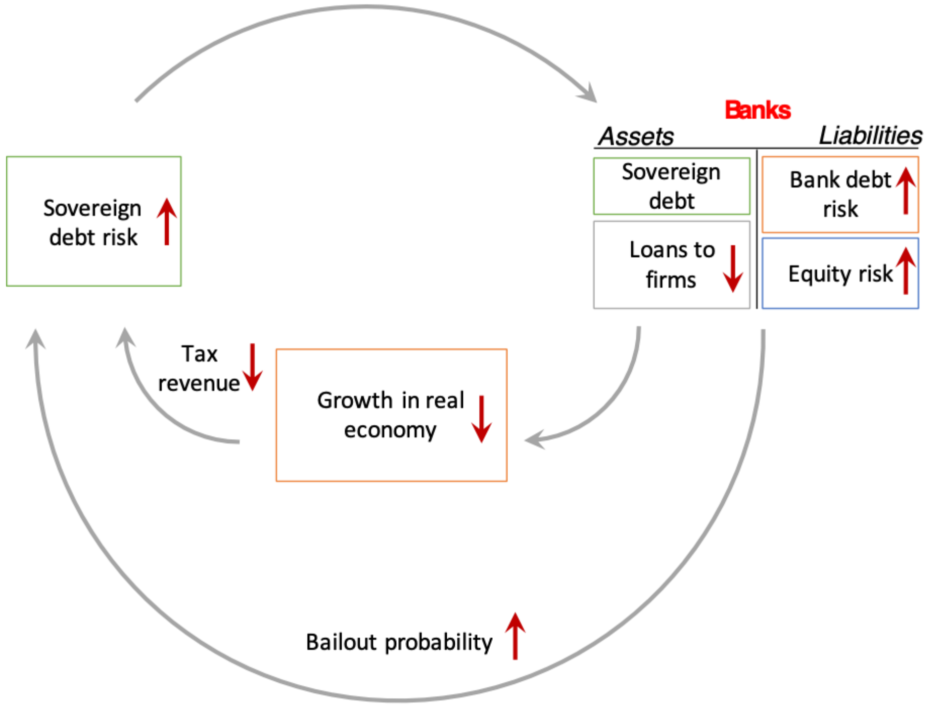
TWO CHANNELS OF LOOP: (1) DEFAULT/BAILOUT

- Say investors raise their perceived risk of default on government bonds
- This means the expected value of the bonds decreases
- Banks that hold large amount of government bonds suffer as the market price of bonds falls
- By the loss spiral, banks are more likely to fail
- The probability that the government will bail out banks increases
- This increases possible government expenditures, worsens the fiscal balance sheet
- Risk of default on government bonds indeed rises, initial beliefs are verified by the loop.



TWO CHANNELS OF LOOP: (2) CREDIT

- Say investors raise their perceived risk of default on government bonds
- This means the expected value of the bonds decreases
- Banks that hold large amount of government bonds suffer as the market price of bonds falls
- By the margin spiral, bank cuts credit to firms and households
- Economic activity falls
- Tax revenues fall, worsens the fiscal balance sheet
- Risk of default on government bonds indeed rises, initial beliefs are verified by the loop.



MORE DIABOLIC LOOPS: ACROSS BALANCE SHEETS

Behaviour of home builders and households when banks cut credit and increase interest rates on loans

Home builders fire sell their housing stock for low price when market liquidity is low

  - Home builders abandon half-finished buildings, destroy wealth as early investments are irreversible, cannot fully realize returns.
  - Construction activity falls

- Households need to fire sell the houses as well
  - Households do not buy new houses, cannot get credit or too expensive.
- The real estate sector enters a crisis
  - Value of securitized mortgage products falls
  - Further hurts the bank
- Feeds back to further losses in financial system

MORE DIABOLIC LOOPS: ACROSS MARKETS

Behaviour of other economic agents

- Decline in real estate sector lowers wages and demand for inputs from other sectors
- Other banks loans more likely to default, the price of other financial assets more likely to decline
- Systemic crises spread to the real economy and back through a general-equilibrium propagation of the initial shock
- The loops across balance sheets contribute to the amplification of shocks across different markets that are connected
- If less economic activity, lowers government tax revenue
- Risk of default on government bonds indeed rises, initial beliefs are verified by the loop

EUROPEAN BANKS AND THEIR SOVEREIGNS IN 2007-10

- There are only national sovereign bonds, there is no euro-wide safe bond
- Diabolic loop at national level
- Yet, some banks are European in size.
- An especially dangerous diabolic loop

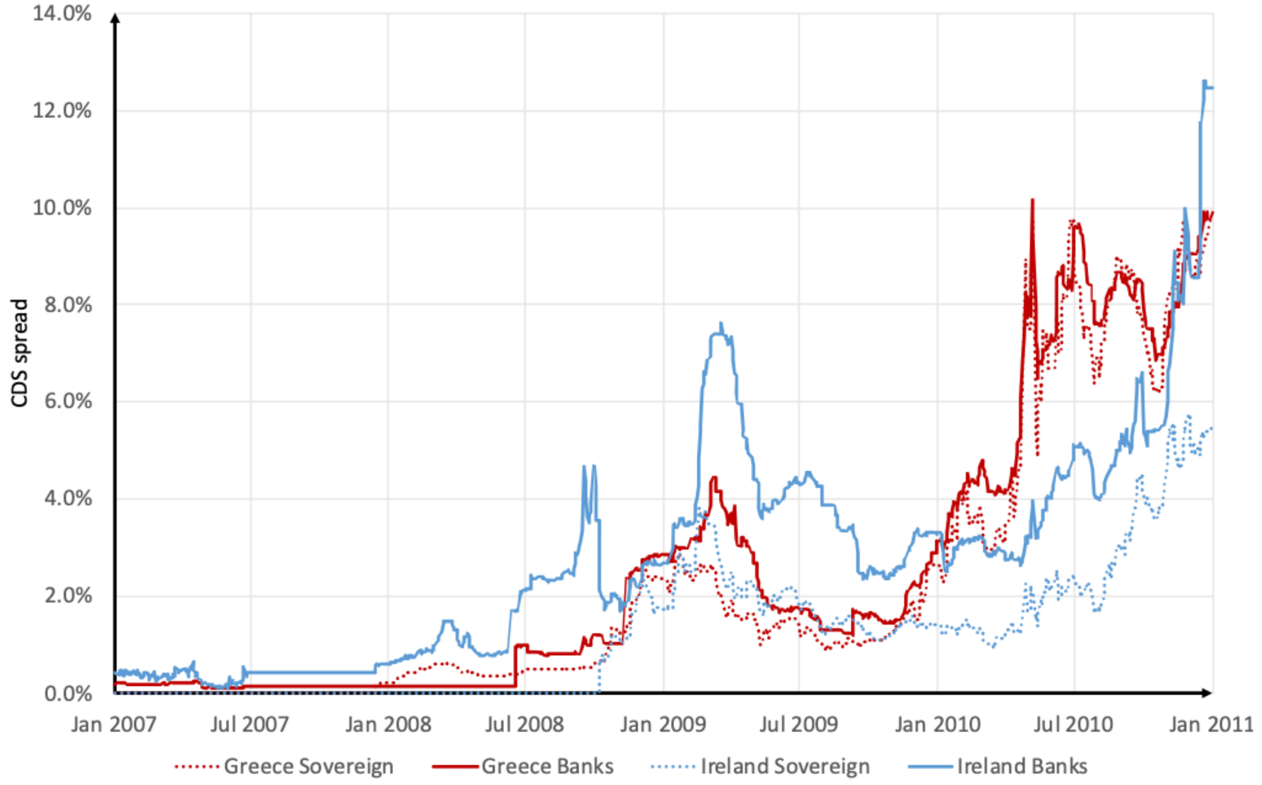
FEATURES OF EUROPEAN BANKS

1. Banks are more likely to hold national sovereign bonds, all four motives especially strong
2. Sovereign bonds are treated as **fully safe** by regulators even if country is near insolvency
3. ECB accepted sovereign bonds of every country in exchange for reserves
4. Public debt markets are not very liquid and rely heavily on banks as primary dealers
5. Some countries rely on the commitment provided by banks holding public debt, given the history of frequent defaults
6. Per country, very few very large banks, with assets crossing borders, so sovereigns would always bail them out

These features that make them very susceptible to diabolic loops:

SOVEREIGN AND BANKS CDS SPREADS

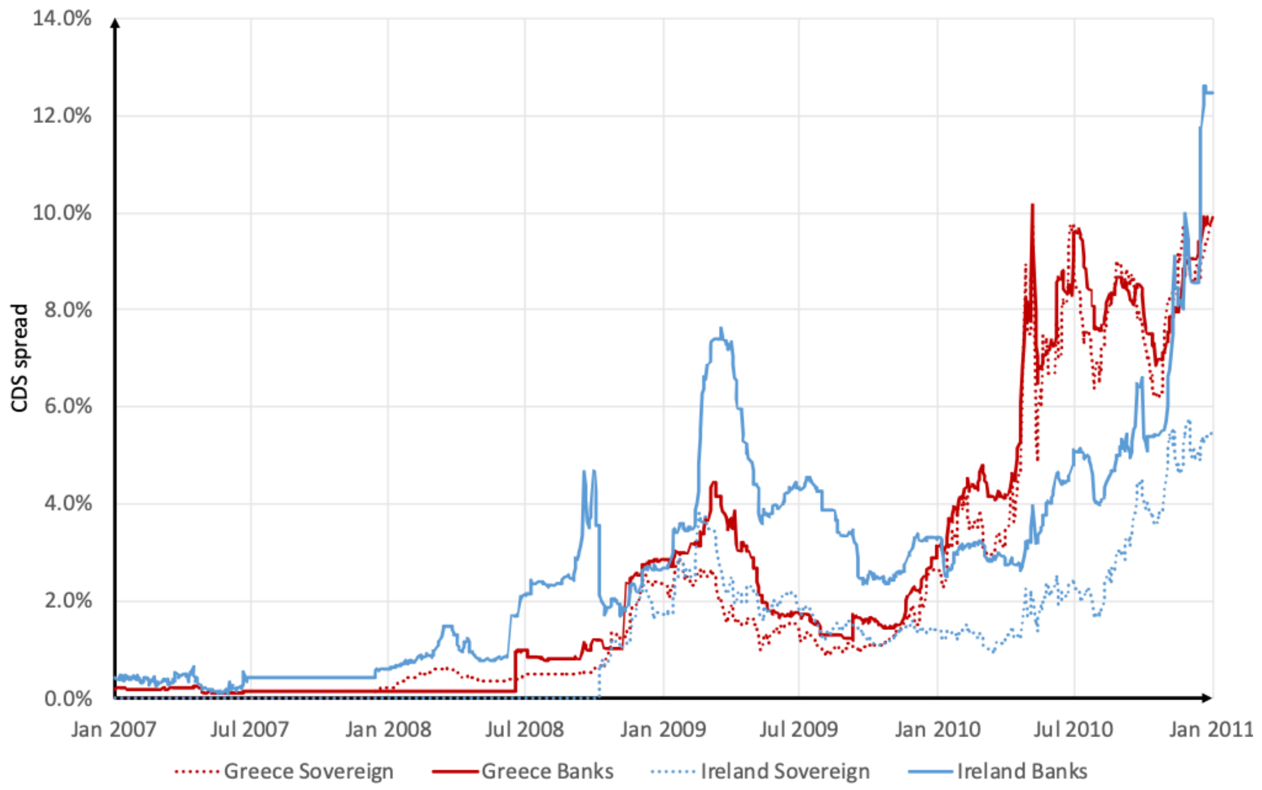
- The figures shows default risk for Irish and Greek sovereigns and banks.
- Measured using price of insurance against this default (“CDS spreads”)
- Diabolic loop: Strong correlation between sovereign and banks’ default probabilities in Greece in 2007-10



SOVEREIGN AND BANKS CDS SPREADS

- Large Irish banks suffered losses in 2007-2008 due to losses in the US subprime market which were amplified by funding spirals. In September 2008, Ireland issued a guarantee to banks, worsening the diabolic loop

- Greece had trouble borrowing from abroad, banks started holding a large amount of government bonds

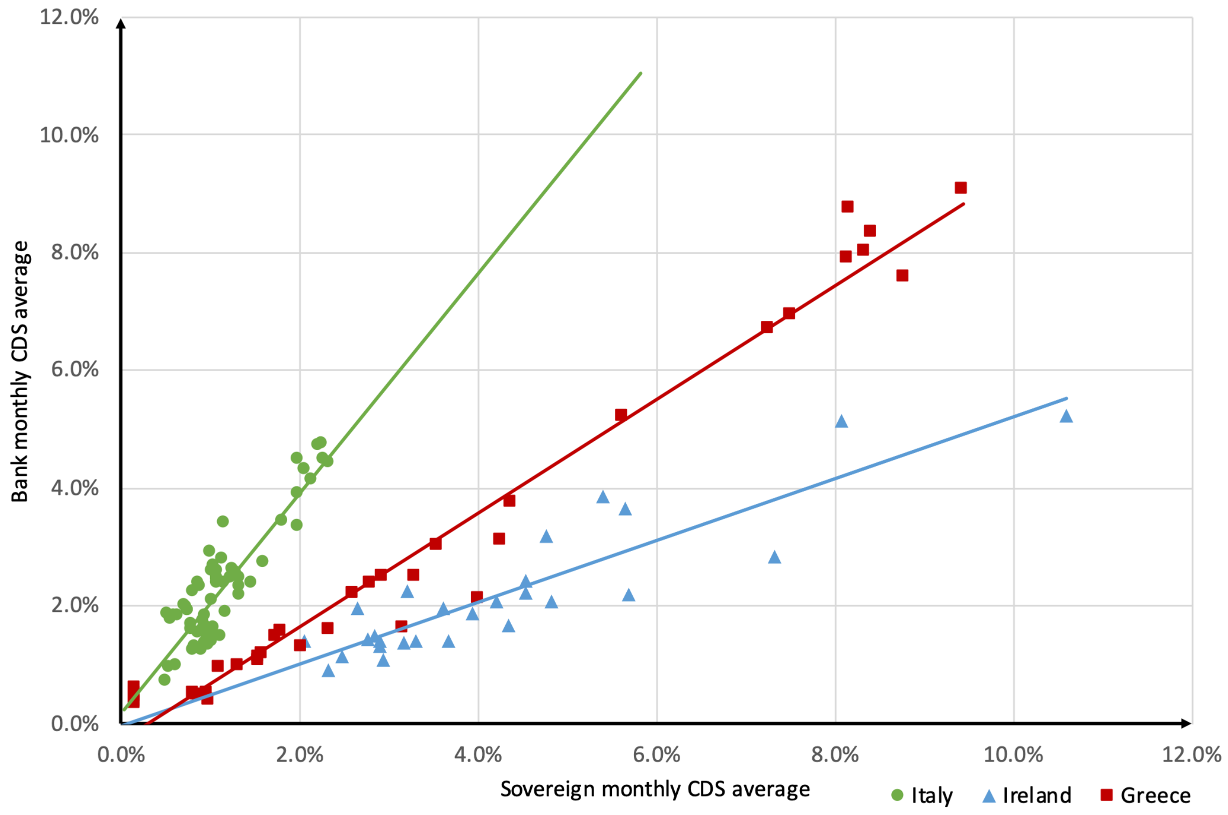


CORRELATION BETWEEN BANK AND SOVEREIGN RISK

- This figure plots the monthly averages of the default risk of banks against that of the sovereigns.

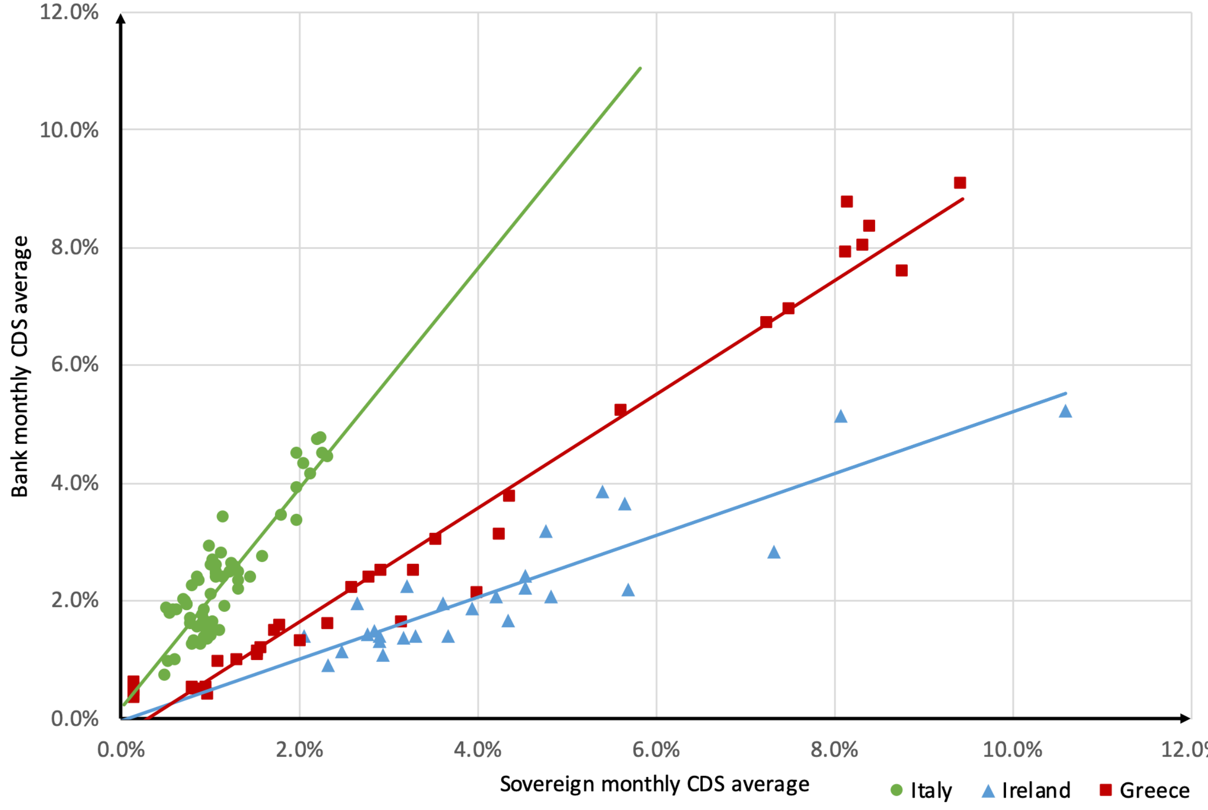
- Also including Italy in the more recent 2014-2017 period, a time of low default risk.

- The correlation is strong



CORRELATION BETWEEN BANK AND SOVEREIGN RISK

- 2013 Spring, head of the Eurogroup of finance ministers' states: the banks that failed should default on their senior bonds rather than being bailed out by governments.
- Within few hours, bank stocks across Europe dropped but the sovereign government bond yields stabilized
- Political pressure led to the recall of this statement



ARGENTINA’S 2001-02 CRISIS

SEQUENCE OF EVENTS

Throughout 1990s, Argentina experienced high growth and low inflation, the exchange rate is tightly pegged to the US dollar.

There was off-budget spending and growing social security expenses. The 1998 crisis started in Brazil that spread to its neighbours, combined with a fall in soybean prices, created a recession in 1990-2000.

In March of 2001, the minister of finance resigned after being unable to implement measures to contain the fiscal deficit, and Congress refused to cut government salaries and pension costs.

Further attempts were ineffective as well; between October 2000 and July 2001, ratings agencies downgraded Argentina's sovereign bonds five times.

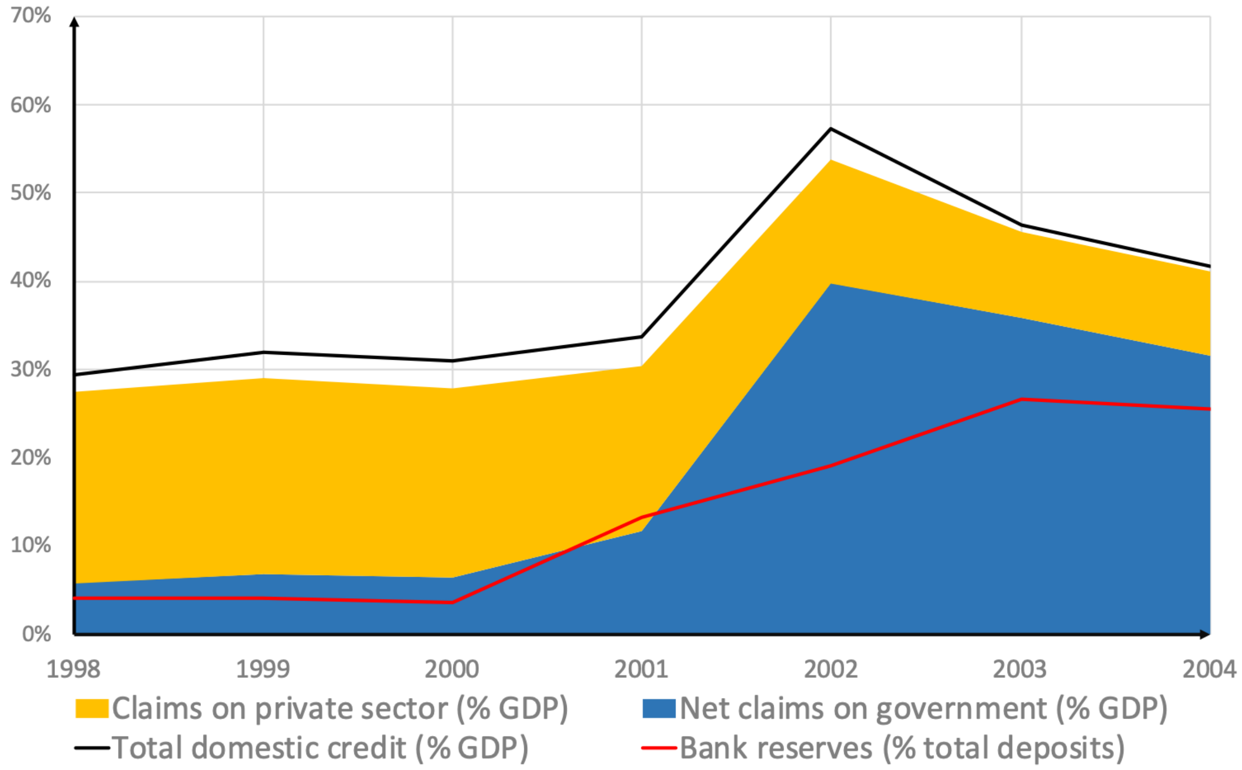
On 23 December 2001, the government unexpectedly defaulted on its debt. Banks suffered large losses. The one-for-one currency peg between the peso and the U.S. dollar was given up, triggering several runs on the banks.

Could not borrow from abroad because the government defaulted on its debt, so the government borrowed heavily from banks, crowding out private borrowing. In 2002, credit to private sector falls and output fell by 11%.

BANK CREDIT AND DEPOSITS AT CENTRAL BANK

- Both the share of credit going to the government (blue shaded area), as well as the deposits of the banks at the central bank (red line) increased significantly during 2001
- In December 2001, the government defaulted. Bank deposits that were denominated in dollars were converted into the less valuable domestic currency
- Several runs on the banks, and a suspension of withdrawals for periods of time

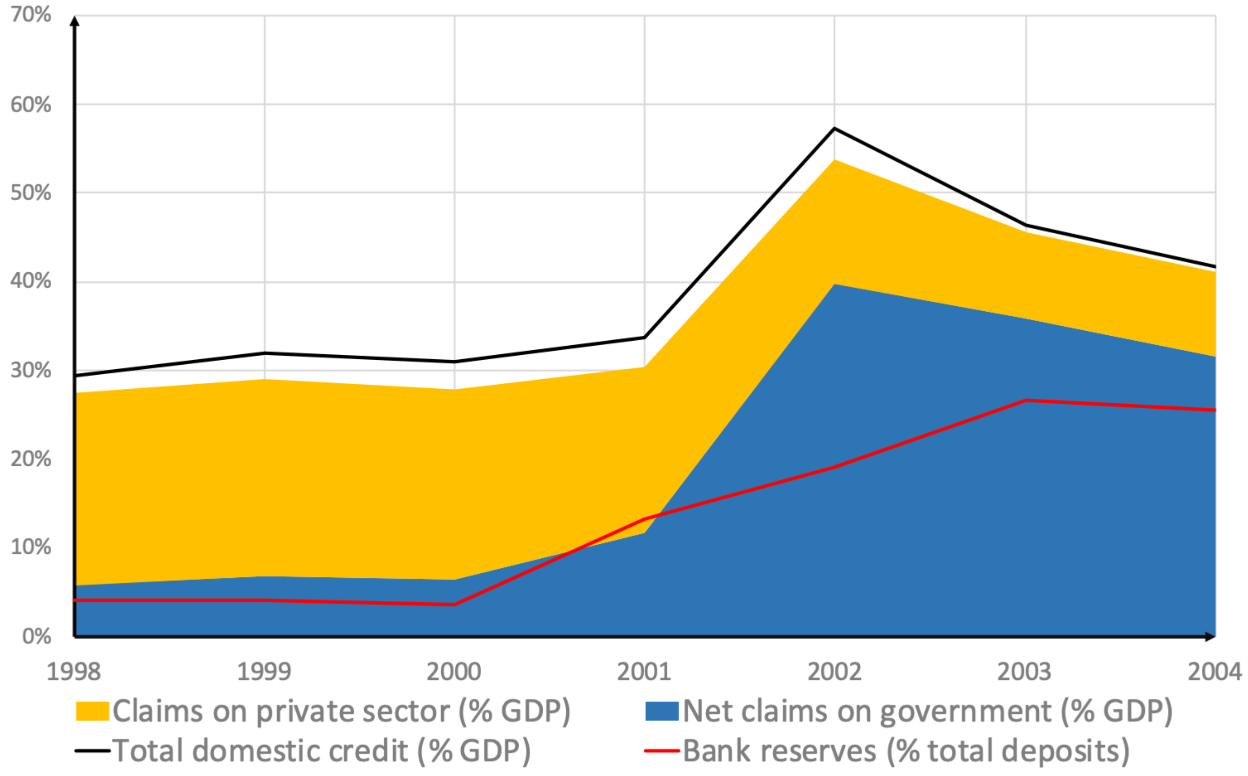
Bank credit to private sector and government, and deposits at the central bank in Argentina



BANK CREDIT AND DEPOSITS AT CENTRAL BANK

- Government gave up the one-to-one currency peg between the peso and the US dollar
- Credit to the private sector shrank significantly
- Government borrowed heavily from banks, crowding out credit for private firms
- The banking crisis and public finances crisis fed off each other resulting in a deep recession

Bank credit to private sector and government, and deposits at the central bank in Argentina



MACRO-PRUDENTIAL POLICY

Financial repression

- Forcing banks to hold government liabilities is a common form of financial repression when government bonds are hard to sell and interest rates are high
- The more direct way is to raise the requirement that banks hold **zero-interest paying deposits** at the central banks: required reserves

The more recent macro-prudential regulations:

- Require banks to hold safe and liquid assets as a share of their liabilities
- Government bonds are counted as the only safe and liquid asset, even when they are far from having these properties
- Force banks to roll over government liabilities for long periods of time

SUMMARY

- Due to the four reasons mentioned, banks are large holders of government debt
- Combined with government guarantees to banks, this creates a diabolic loop
- In a diabolic loop, a higher default risk leads to lower lending and thus worsening government finances and bank equity causing prices to fall further
- This was particularly evident in the European crisis where sovereign risk and bank risk were strongly correlated
- The government commonly forces banks to hold government bonds for the purpose of financial repression, that allows central bank to borrow from banks using bonds as collateral