

Systemic Risk in the European Banking System

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What went wrong with banking regulation?

- The focus of regulators was on microprudential regulation that involves ensuring no individual bank takes large risks
- This failed to prevent a financial crisis because it ignored systemic risk
- What are the sources of systemic risk?

Sources of systemic risk

1. Panics – banking crises due to multiple equilibria
2. Banking crises due to asset price falls
3. Contagion
4. Financial architecture
5. Foreign exchange mismatches in the banking system

1. Banking panics

- Two equilibria:
 - If everybody thinks the banking system is sound then only the people who need money will withdraw
 - If everybody thinks others will withdraw then it is optimal to withdraw and the panic equilibrium is self-fulfilling
- This was economists' traditional view of financial crises, e.g. Friedman and Schwarz (1963)

- Formal model: Diamond and Dybvig (1983)
 - Solution: Deposit insurance eliminates the bad equilibrium and is costless
- Deposit insurance for retail deposits no longer effective in preventing panics
 - Growing importance of wholesale funding
- Guarantee all short term debt? – If there are other types of systemic risk may be very costly, e.g. Ireland

2. Banking crises due to asset price falls

- If the prices of assets held by banks and other financial institutions fall then there can also be a banking crisis
- Possible reasons for asset price falls
 - a. Business cycle
 - b. Bursting of real estate bubbles
 - c. Mispricing due to limits to arbitrage
 - d. Mispricing due to “flash crashes”
 - e. Sovereign default
 - f. Politics
 - g. Rise in interest rates

2a. Business cycle

- In the US there has always been a strong distrust of centralized power. In a report on the Second Bank of the United States John Quincy Adams wrote

“Power for good, is power for evil, even in the hands of omnipotence”
- Although the bill for rechartering the Second Bank was passed by Congress it was vetoed by President Andrew Jackson and the veto was not overturned.
- Between 1836 and 1913 the US had no central bank and during this time it had many crises

- Gorton (1988) found that panics in the U.S. in the late 19th Century were predictable events: whenever the leading economic indicator represented by the liabilities of failed businesses reached a certain threshold, a panic ensued.
- See also Calomiris and Gorton (1991) and Calomiris and Mason (2003)

2b. Bursting of real estate bubbles

- Herring and Wachter (1999), Reinhart and Rogoff (2009), and Crowe, Dell’Ariccia, Igan, and Rabanal (2011) have provided evidence that the most important source of systemic risk is the collapse of real estate prices
- Herring and Wachter (1999) emphasize both commercial and residential real estate booms

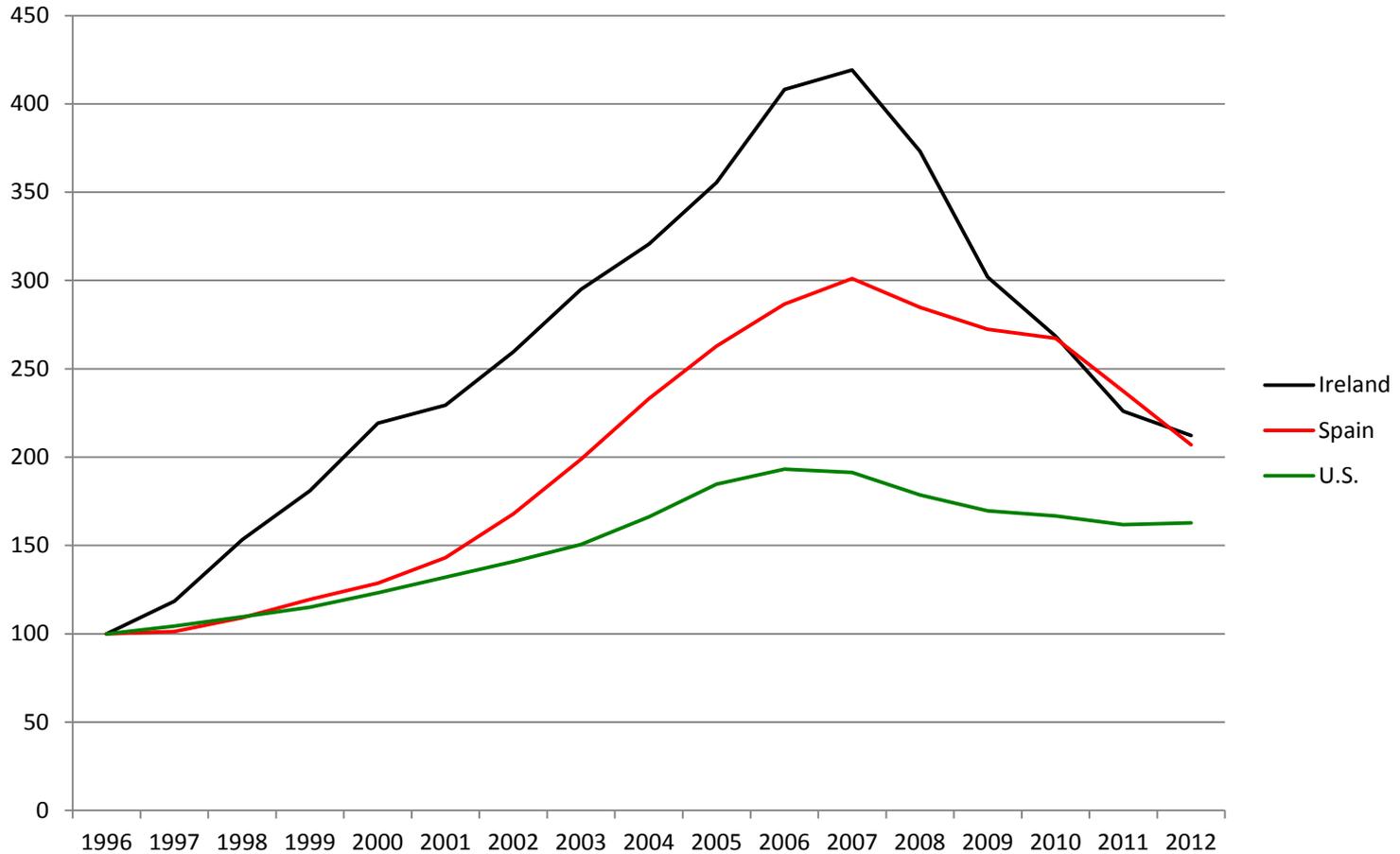
Real Housing Price Cycles and Banking Crises

Country	Crisis date	Peak	Trough	Duration of downturn	Magnitude of decline (in percent)
Advanced economies: The Big 5					
Finland	1991	1989:Q2	1995:Q4	6 years	-50.4
Japan	1992	1991:Q1	Ongoing	Ongoing	-40.2
Norway	1987	1987:Q2	1993:Q1	5 years	-41.5
Spain	1977	1978	1982	4 years	-33.3
Sweden	1991	1990:Q2	1994:Q4	4 years	-31.7
Asian Crisis: The Big 6					
Hong Kong	1997	1997:Q2	2003:Q2	6 years	-58.9
Indonesia	1997	1994:Q1	1999:Q1	5 years	-49.9
Malaysia	1997	1996	1999	3 years	-19.0
Philippines	1997	1997:Q1	2004:Q3	7 years	-53.0
South Korea	1997		2001:Q2	4 years	-20.4
Thailand	1997	1995:Q3	1999:Q4	4 years	-19.9
Other emerging					
Argentina	2001	1999	2003	4 years	-25.5
Colombia	1998	1997:Q1	2003:Q2	6 years	-51.2
Historical episodes					
Norway	1898	1899	1905	6 years	-25.5
US	1929	1925	1932	7 years	-12.6

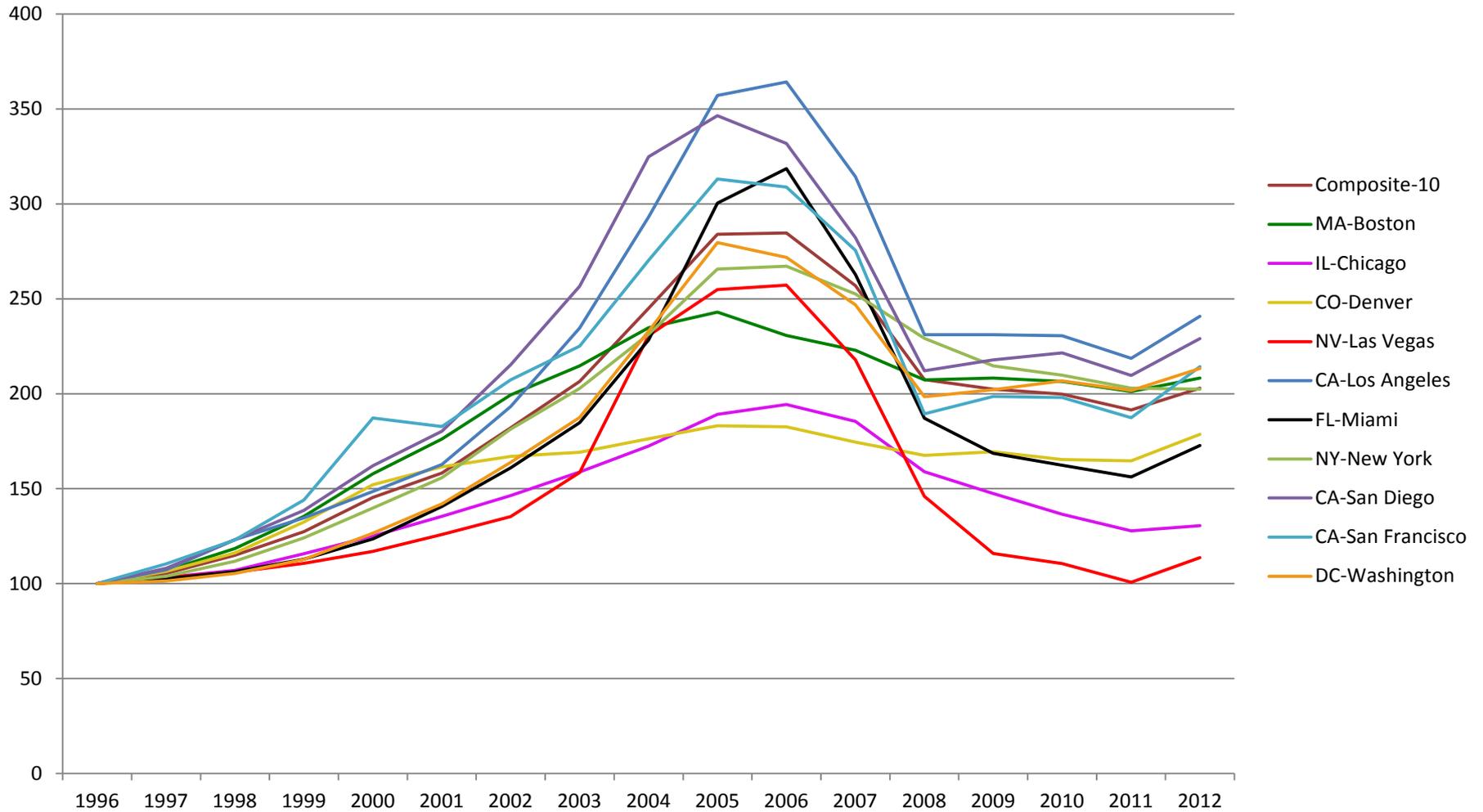
Source: Reinhart and Rogoff (2009)

- In the current crisis Ireland, Spain and some regions of the U.S. had sharp run ups and then collapses in property prices that have had a severe effect on these countries' banking systems and economies

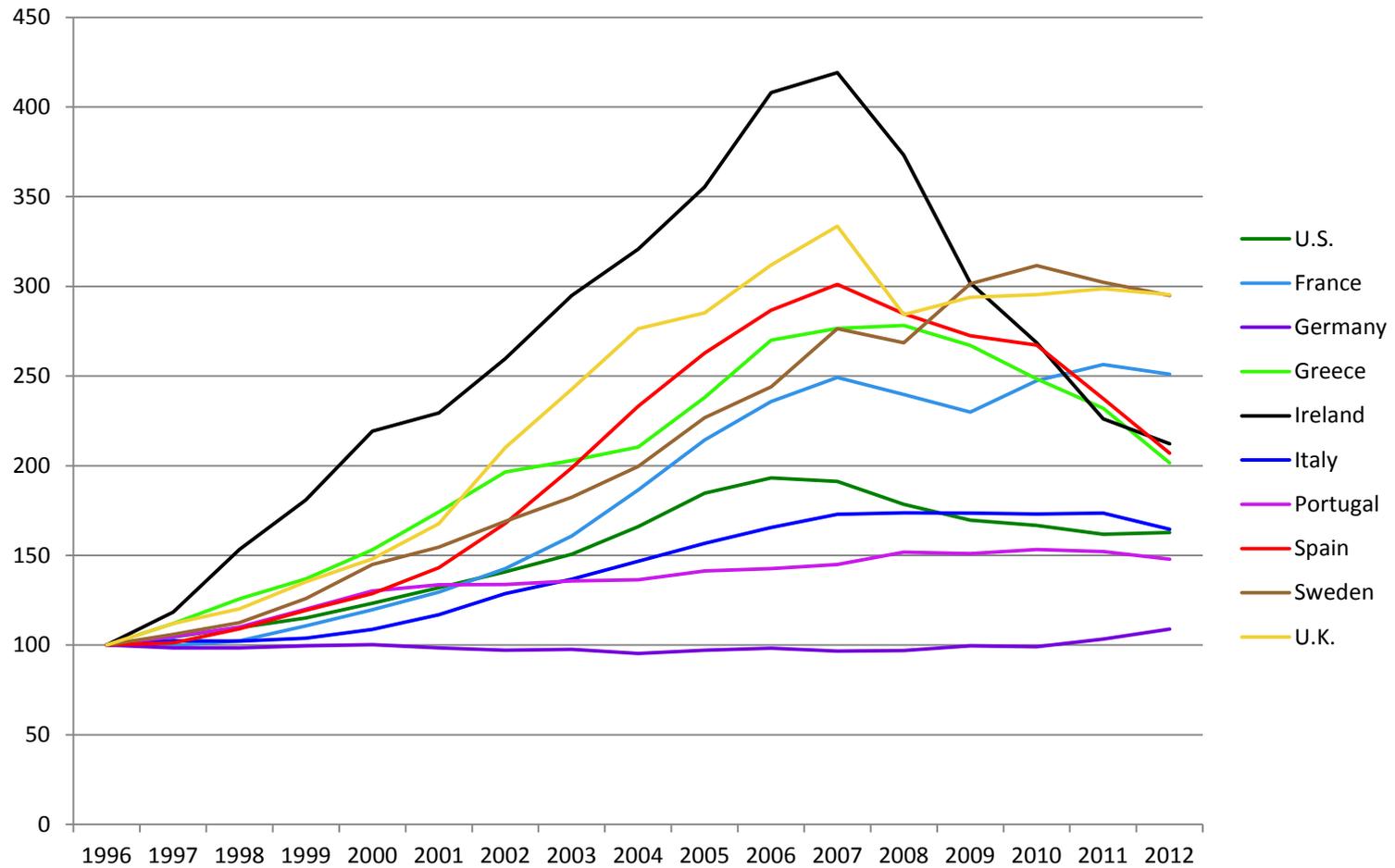
Nominal Housing Prices in Ireland, Spain and the U.S.



Nominal Housing Prices in Different U.S. Cities



Nominal Housing Prices in U.S. and Various European Countries



- What caused these bubbles?
- Returns on housing are positively serially correlated so in contrast to stocks the market is inefficient
- It appears that lowering interest rates at a time when property prices are rising rapidly can lead to a bubble
- Easy availability of credit due to large foreign exchange reserves of Asian central banks that resulted from IMF policies enacted during the 1997 Asian Crisis

2c. Asset mispricing due to limits to arbitrage

- Evidence was that not only did prices of securitized products seem very low but correlations between residential mortgage-backed assets, commercial mortgage-backed assets, and corporate credit securitizations markedly increased
- “Cash-in-the-market” pricing and limits to arbitrage
- The apparent mispricing contributed significantly to banks’ problems because of mark-to-market accounting

Possible solutions to mispricing due to limits to arbitrage

- TARP-type programs can help restore market functioning and correct pricing
 - Difficult to implement and uncertain effects
 - Should the Treasury or the central banks implement them?
- Mark-to-market may need to be suspended when markets are not efficient
 - For example, when there is significant divergence between market prices and model based prices (more than 2%)

2d. Asset mispricing due to “flash crashes”

- Around 50-60% of trading volume in the U.S. and somewhat less in Europe is by high frequency traders
- In the U.S. On May 6, 2010 over 20,000 trades across more than 300 securities were executed at prices more than 60% away from their values just moments before. Many were executed at prices of a \$0.01 or less, or as high as \$100,000, before prices of those securities returned to their “pre-crash” levels.
- Should high frequency trading be regulated?

2e. Sovereign Default

- Problems in Greece in the first part of 2010 and since then show the difficulties associated with sovereign default within the Eurozone
- Subsequent problems in Ireland and Portugal and then in Spain, Italy, and Cyprus have underlined the importance of this issue
- Political economy factors in a wide range of countries are key and quite uncertain

2f. Politics

- Recent events in the US illustrate the importance of politics for systemic risk
- The possible success of the National Front in France, which is strongly anti-euro is one illustration
- Syriza in Greece is another anti-euro party with a good chance of being elected
- Politics in Italy are also fragile

2g. Rise in interest rates

- Interest rates are at historic lows
- It is quite likely that going forward they will revert to long run historical levels
- When this happens the value of debt, including sovereign debt and particularly long term debt, will fall
- This poses a very important systemic risk in the future as recent events have illustrated

3. Contagion

- A very important systemic risk
- At least three different types:
 - Domino effects through the payments system or interbank markets
 - Common asset exposure
 - Uncertainty about how events will play out because of a lack of precedent
- Solution: High bank capital requirements?

4. Financial architecture

- Problems in the “plumbing” that allows financial flows between central banks, dealer banks, money market funds, major institutional investors, repo clearing banks, over-the-counter (OTC) derivatives central clearing parties, and exchanges are systemic
- The connectors include lending facilities offered by central banks to each other and to dealer banks, tri-party repo and clearing agreements, OTC derivatives master swap agreements, prime-brokerage agreements, and settlement systems

Possible systemic risks from financial architecture:

- Lender of last resort facilities
- Triparty repo clearing services
- Money market funds
- Lack of central clearing for derivatives
- Prime brokerage as a source of liquidity

5. Foreign exchange mismatches

- A major factor in the 1997 Asian Crisis was the lack of access to foreign exchange by banks and firms in Thailand, Korea, Indonesia and other countries
- Prior to the current crisis many banks within Europe had made foreign currency loans funded by foreign currency deposits – when the crisis struck many deposits were not rolled over
- Largest liquidity shortage was \$400 billion dollars in the Eurozone, next was \$70 billion worth of euros in the U.S. and then \$30 billion of Sfrs in Eurozone

- Not a significant problem in the current crisis because central banks introduced foreign currency swaps
- There were four overlapping networks:
 - The Fed network to supply U.S. dollars
 - The ECB network to supply Euros
 - The Swiss Franc network
 - The Latin American and Asian networks

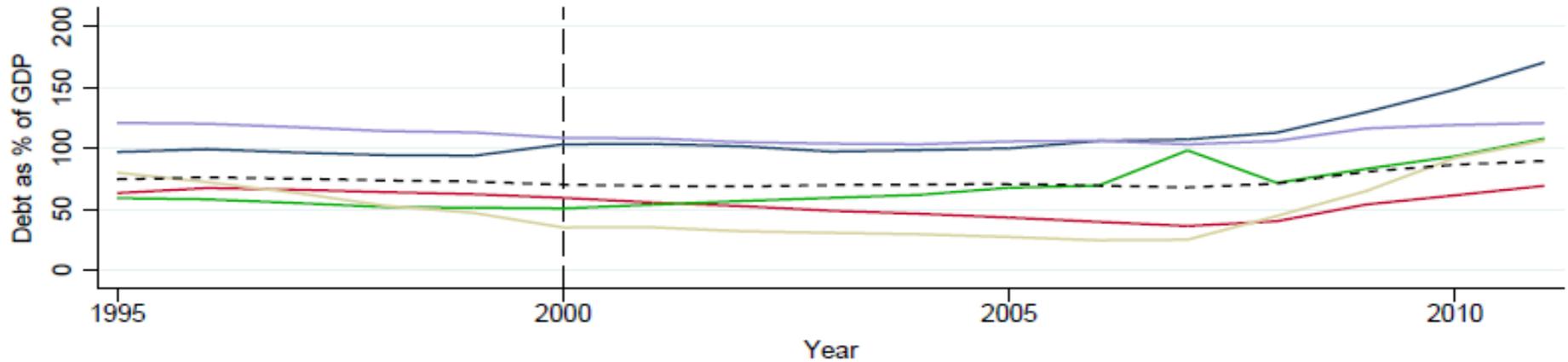
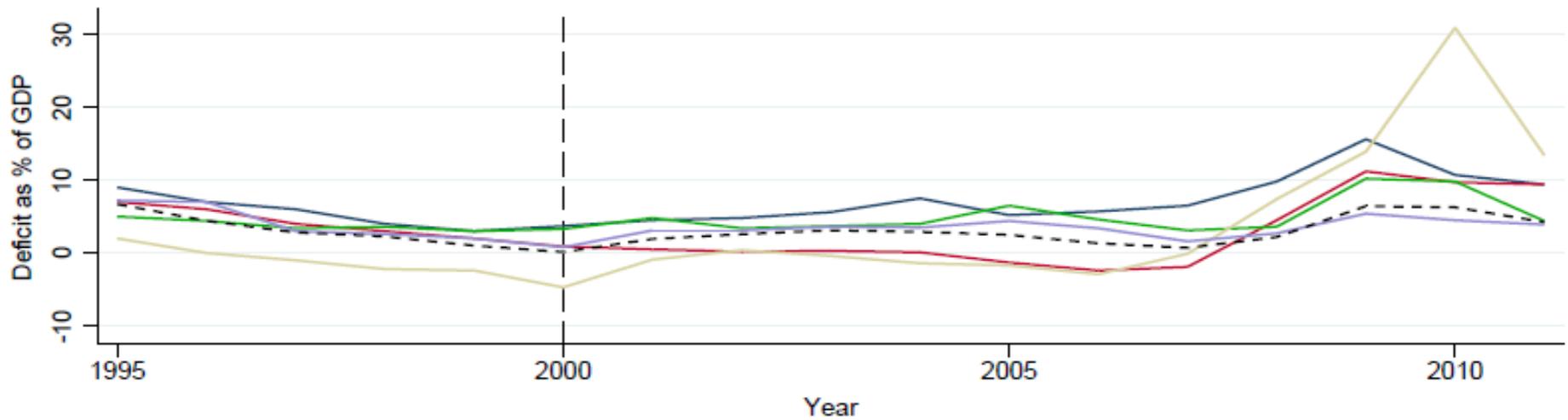
Current situation in Europe

1. Where we are in terms of
 - a. Sovereign health – sovereign deficits and debts
 - b. Banks' health and cross border activities
 - c. Firms' health and cost of funding

2. Policy responses

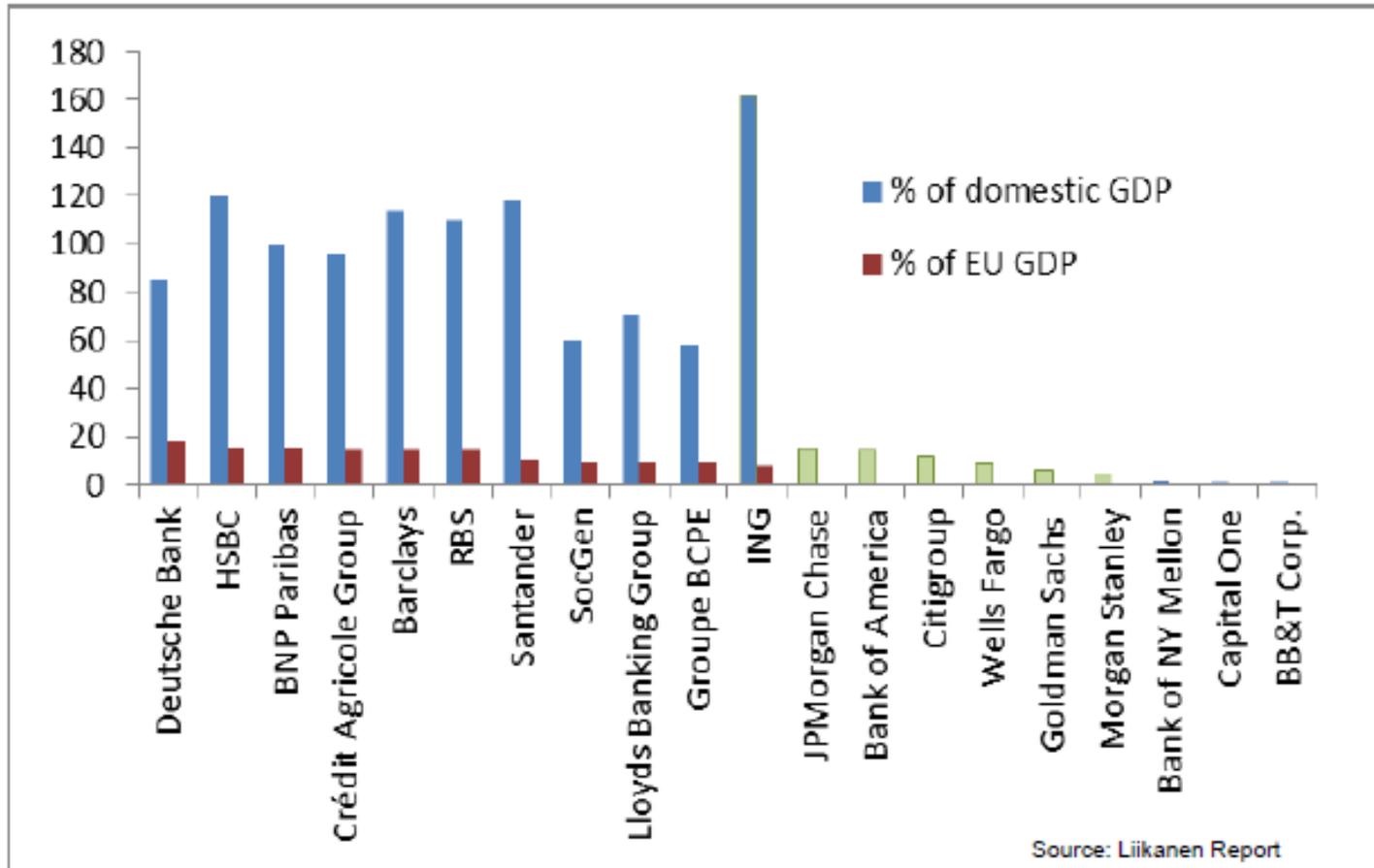
3. Remaining weaknesses in Europe

1.a Sovereign deficits and debts (% GDP)



1.b Banks' asset size

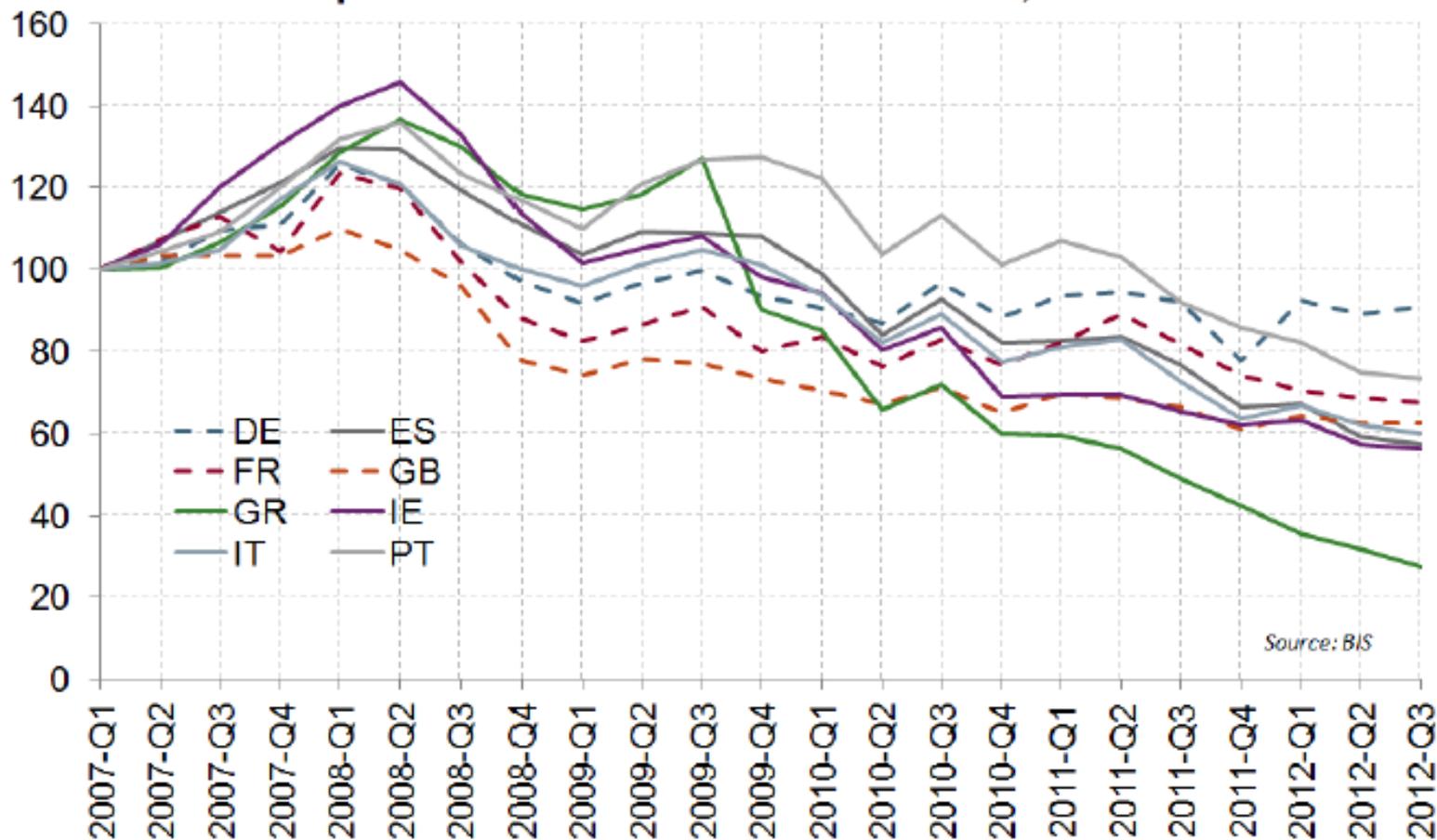
Total assets of the largest EU and US banking groups in % of GDP)



Banks' dimension is disproportionate relative to home country's fiscal capacity

1.b Banks' retrenchment

Consolidated Total foreign claims (ultimate risk basis) of reporting european banks vis-à-vis selected countries, 2010 Q4=100



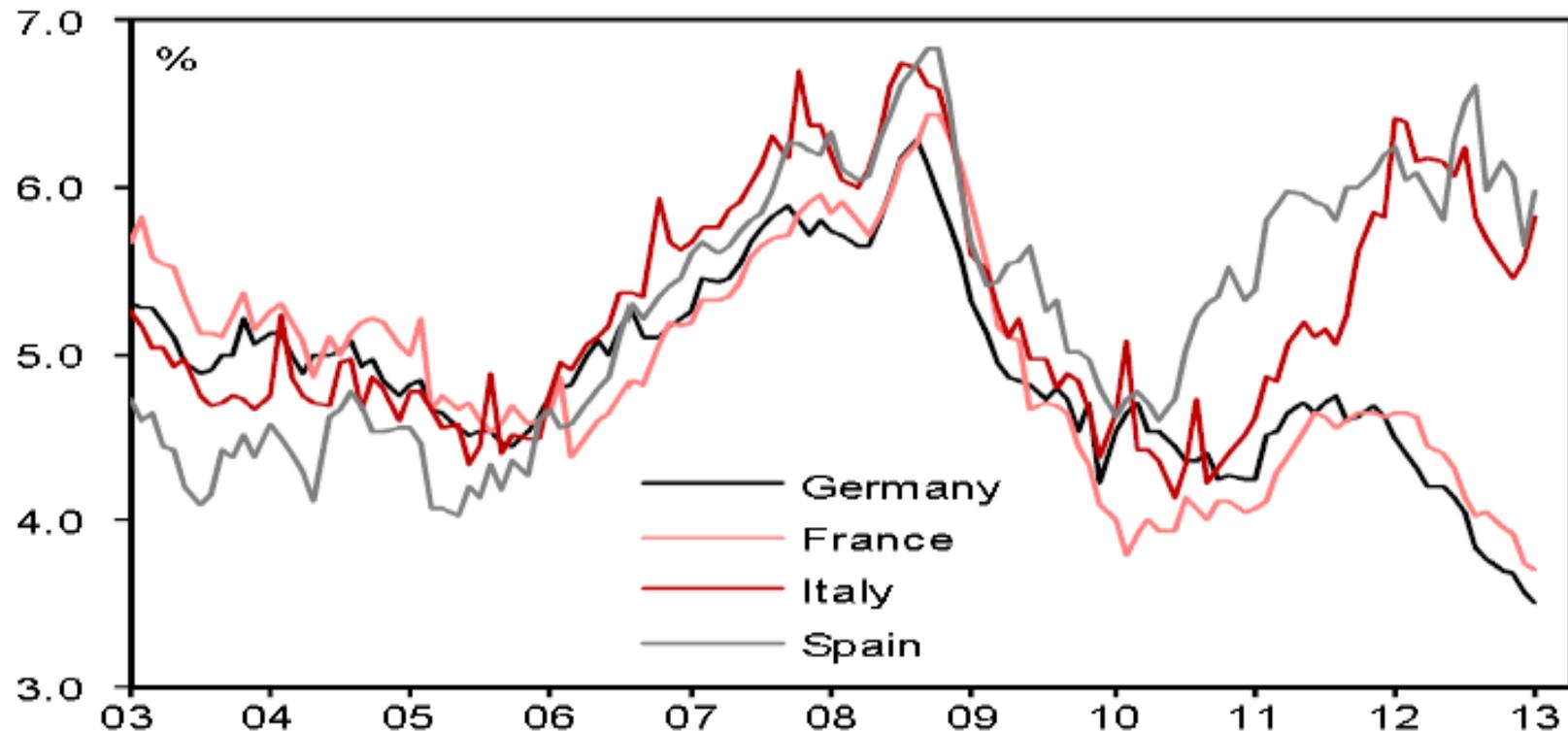
Source: BIS

Banks align their business with the safety net

1.c Firms' cost of funding

Bank lending rates to companies remain divergent

% pa, interest rates on business loans up to EUR1mn with maturity between 1 and 5 years



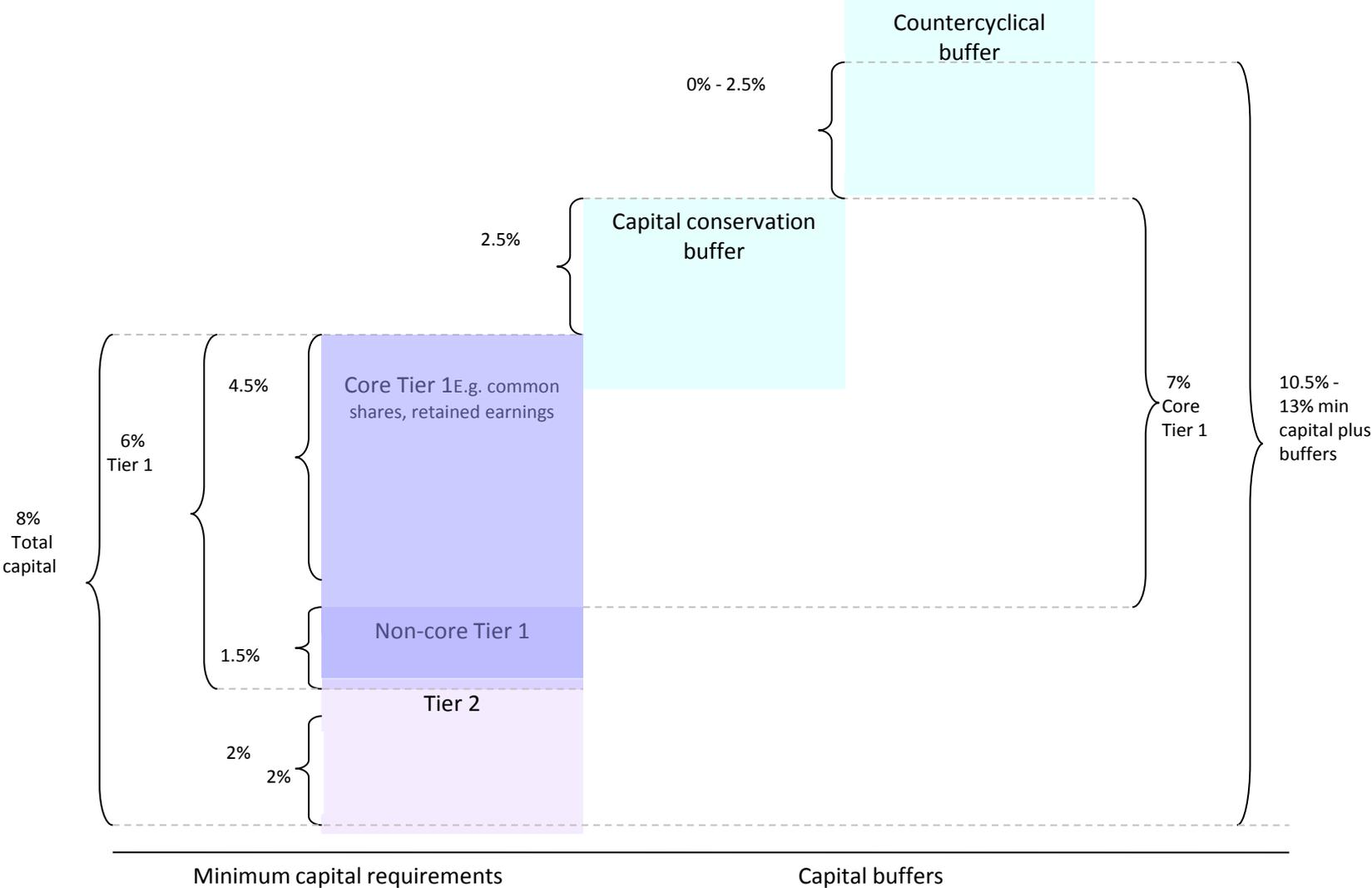
Source: GS Global ECS Research.

2. Policy responses to deal with systemic risk in Europe

Basel III

- To be implemented in Europe through the Capital Requirement Directive IV (CRD IV)
- Capital
 - Risk coverage
 - Containing leverage
 - Risk management and supervision
 - Market discipline
 - Systemically important financial institutions (SIFIs)

Basel III Minimum Capital Requirements and Capital Buffers



- Liquidity
 - Liquidity coverage ratio
 - Net stable funding ratio
 - Principles for sound liquidity risk management
 - Supervisory monitoring
- CRD IV foresees some flexibility in relation to some macro-prudential powers - Member States have the possibility to impose stricter macro-prudential requirements such as increasing risk weights for targeting asset bubbles in property bubbles for domestic institutions that poses increased risk to financial stability

2. Banking union in the long-term

- Three elements
 1. Single Supervisory Mechanism (SSM) – decided
 2. Single Resolution Mechanism (SRM) – in discussion
 3. European Deposit Insurance Fund – not discussed
- Clearly, all the three elements are needed (at least, 1 and 2 to start with). Otherwise,
 - Still toxic relationship between weak banks and weak sovereigns
 - Distortions of decisions taken at the European level but with effects on national budgets
 - Potentially important redistributive effects and further psychological dissolution of Europe

2. Banking union in the short-term

- Asset quality review (AQR) and stress tests of the 140 banks under SSM control
 - Precondition for the SSM and the direct ESM lending to banks
 - But no fiscal backstops at the European level currently
 - This could be very dangerous and/or make the exercise ineffective
 - How to repair troubled banks' balance sheets?
 - Misperception between creditor and debtor countries
 - Future versus past (“legacy”)

2. Other European moves to deal with systemic risk

- Activity restrictions
 - Vickers Report in the UK
 - Liikanen Report in the EU
- Size restrictions
 - SIFI regulations
- Bonus restrictions

2. European non-bank regulatory reforms

- Short sale restrictions
- Moves to transfer trading of derivatives from the OTC market to centralized exchanges
- Financial transaction taxes
- Insurance sector – Solvency II Directive
- Investment funds
- Securitization
- Credit rating agency reforms

3. Remaining weaknesses in Europe

- Problems in the Eurozone and sovereign default
- Politics
- Rise in interest rates
- Contagion
- Vulnerability to asset price falls particularly real estate
- Asset mispricing due to limits to arbitrage
- Flash crashes

References and Further Reading

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LIFE IN THE EUROZONE WITH OR WITHOUT



SOVEREIGN DEFAULT?

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POLITICAL, FISCAL and BANKING UNION



IN THE EUROZONE?

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