

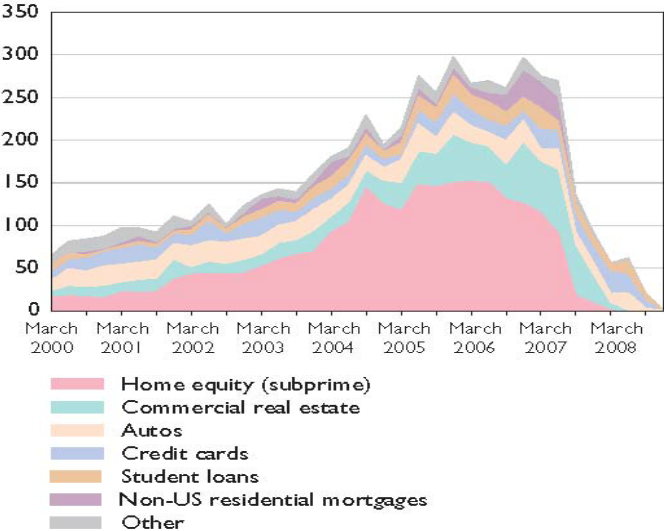
Political Responses to Systemic Risks

Frank Heid, Deutsche Bundesbank

Aspects of the recent financial crisis: Common exposures

New issuance of asset-backed securities in previous three months

(USD billions)



Sources: JP Morgan Chase and Adrian and Shin (2009).

Moral Hazard

■ Moral hazard was a main cause for the deterioration in credit quality

■ In the early 2000's the share of subprime mortgages was 9 % of new mortgages. In 2006 the share was above 40 %. Subprime mortgages accounted for 14 % of outstanding securitized mortgages, up from 7 % in 2001.

■ In 2006 the share of the stock of securitized mortgages in which the loan accounted for more than 90 % of the property value was 14 % (5 % in 2001).

■ In 2006 18 % of securitized mortgages had limited documentation (7 % in 2001)

(Hellwig 2008)

Contagion

■ **“How could problems with subprime mortgages, being such a small sector of global financial markets, provoke such a dislocation?” (BIS 2008)**

■ **Literature on contagion distinguishes between different channels**

■ Contractual relations

Prominent example: Failure of Lehman Brothers

■ Asset prices

Mark-to-market or value accounting: Banks value assets at current market prices. Fire sales led to undervaluation of certain assets.

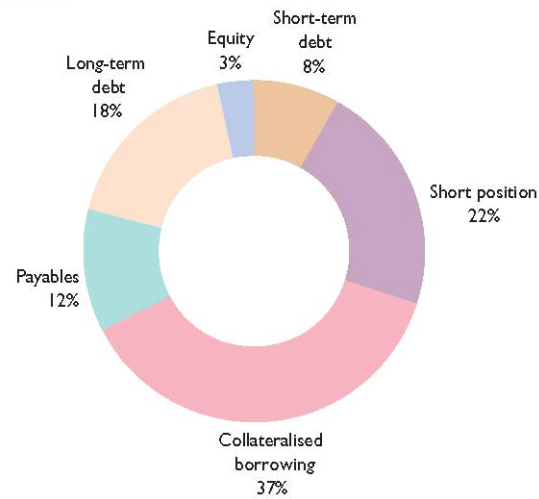
■ Information contagion

Retrenchment in interbank markets.

Maturity Transformation (Liquidity Risk)

Balance sheet of Lehman Brothers (Adrian, Shin, 2008)

Liabilities



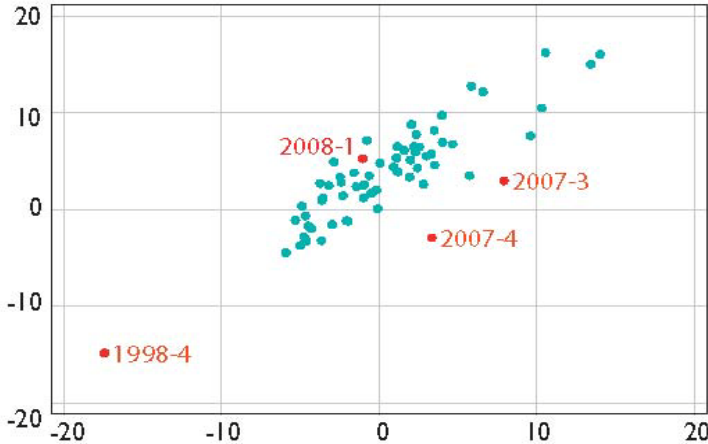
Leverage

- In the build up of the crisis banks increased their risk and their exposure to aggregate risk.**
- Credit risk transfer played a crucial role in this regard**

Leverage

Leverage growth and asset growth of US investment banks

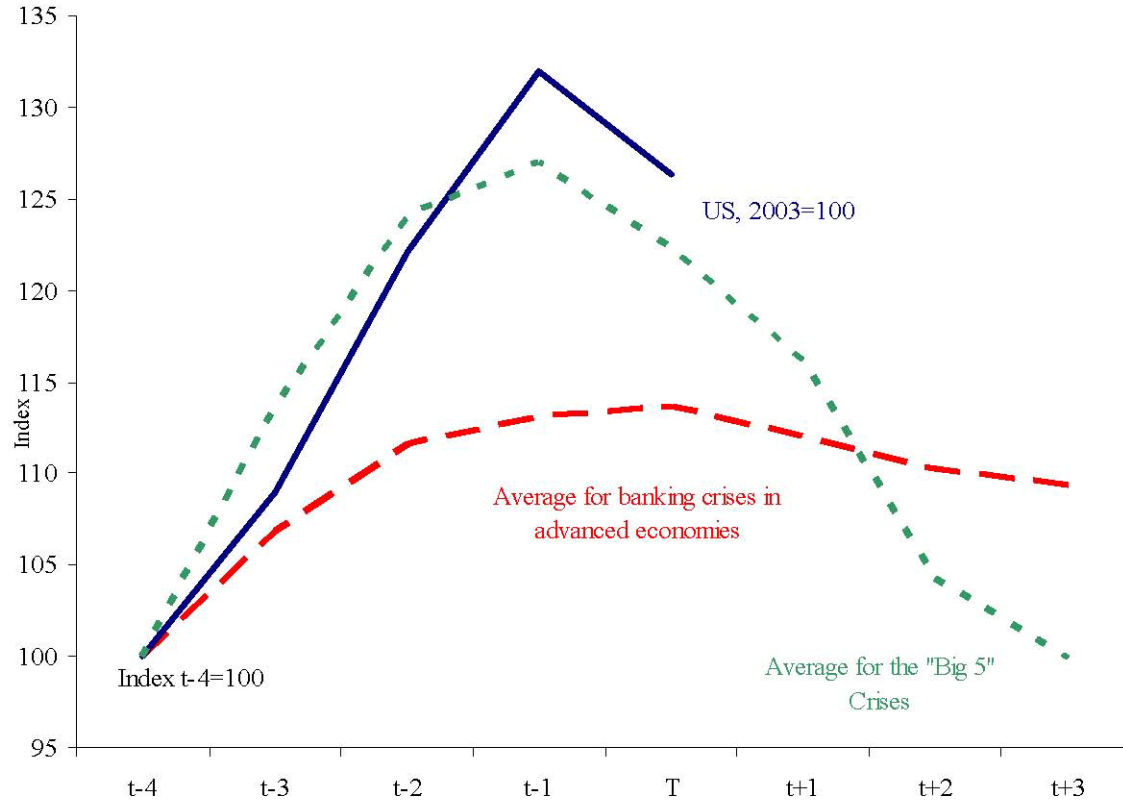
(Y axis: Total asset growth, % quarterly; X axis: Leverage growth, % quarterly)



Sources: SEC; Adrian and Shin (2007).

Deja vu?

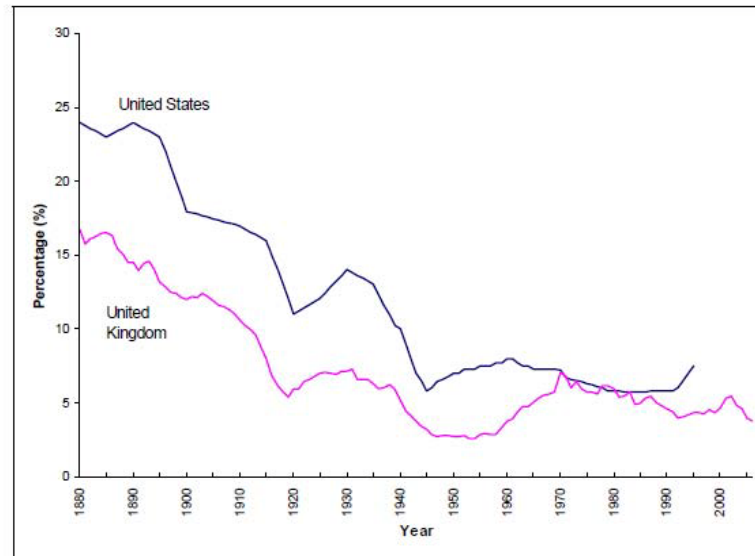
Figure 1: Real Housing Prices and Banking Crises



Reinhart, Rogoff, 2008

A long decline in capital ...

Capital ratios for UK and US banks



Source: P Alessandri and A Haldane, presentation at the Federal Reserve Bank of Chicago/World Bank event "International financial crisis: have the rules of finance changed?", 24 September 2009, Chart 2.

Goodhart 2010

... lead to the introduction of Basel I

- | Catalyst was the Mexican, Argentine, Brazilian crisis of 1982.**
- | Citibank's CEO at the time: „Sovereign countries do not default.“**
- | US city centre banks were insolvent on mark to market basis.**
- | Congress insisted on stronger capital base.**
- | BCBS to agree on international standard to bank capital.**

Macroprudential policy

I IMF, FSB and BIS definition of systemic risk: „a risk of disruption to financial services that is caused by an impairment of all parts of the financial system and has the potential to have serious negative consequences for the real economy.“ (*Guidance to assess the systemic importance of financial institutions, markets and instruments: initial considerations, October 2009*)

I The two dimensions of systemic risk

Time dimension: build-up of financial imbalances (eg increasing exposure to subprime mortgage market)

Cross sectional dimension: common exposures, risk concentrations, linkages and interdependencies

Macroprudential Instruments: Overview

Table 1

Macroprudential instruments by vulnerability and financial system component

		Financial system component				
		Bank or deposit-taker		Non-bank investor	Securities market	Financial infrastructure
		Balance sheet*	Lending contract			
Vulnerability	Leverage	<ul style="list-style-type: none"> capital ratio risk weights provisioning profit distribution restrictions credit growth cap 	<ul style="list-style-type: none"> LTV cap debt service / income cap maturity cap 		<ul style="list-style-type: none"> margin/haircut limit 	
	Liquidity or market risk	<ul style="list-style-type: none"> liquidity / reserve requirements FX lending restriction currency mismatch limit open FX position limit 	<ul style="list-style-type: none"> valuation rules (eg. MMMFs) 	<ul style="list-style-type: none"> local currency or FX reserve requirements 	<ul style="list-style-type: none"> central bank balance sheet operations 	<ul style="list-style-type: none"> exchange trading
	Interconnectedness	<ul style="list-style-type: none"> concentration limits systemic capital surcharge subsidiarisation 				<ul style="list-style-type: none"> central counterparties (CCP)

* Capital and other balance sheet requirements also apply to insurers and pension funds, but we restrict our attention here to the types of institutions most relevant for credit intermediation.

CGFS – Macroprudential Instruments and Frameworks: a stocktaking of issues and experiences

CGFS (2010)

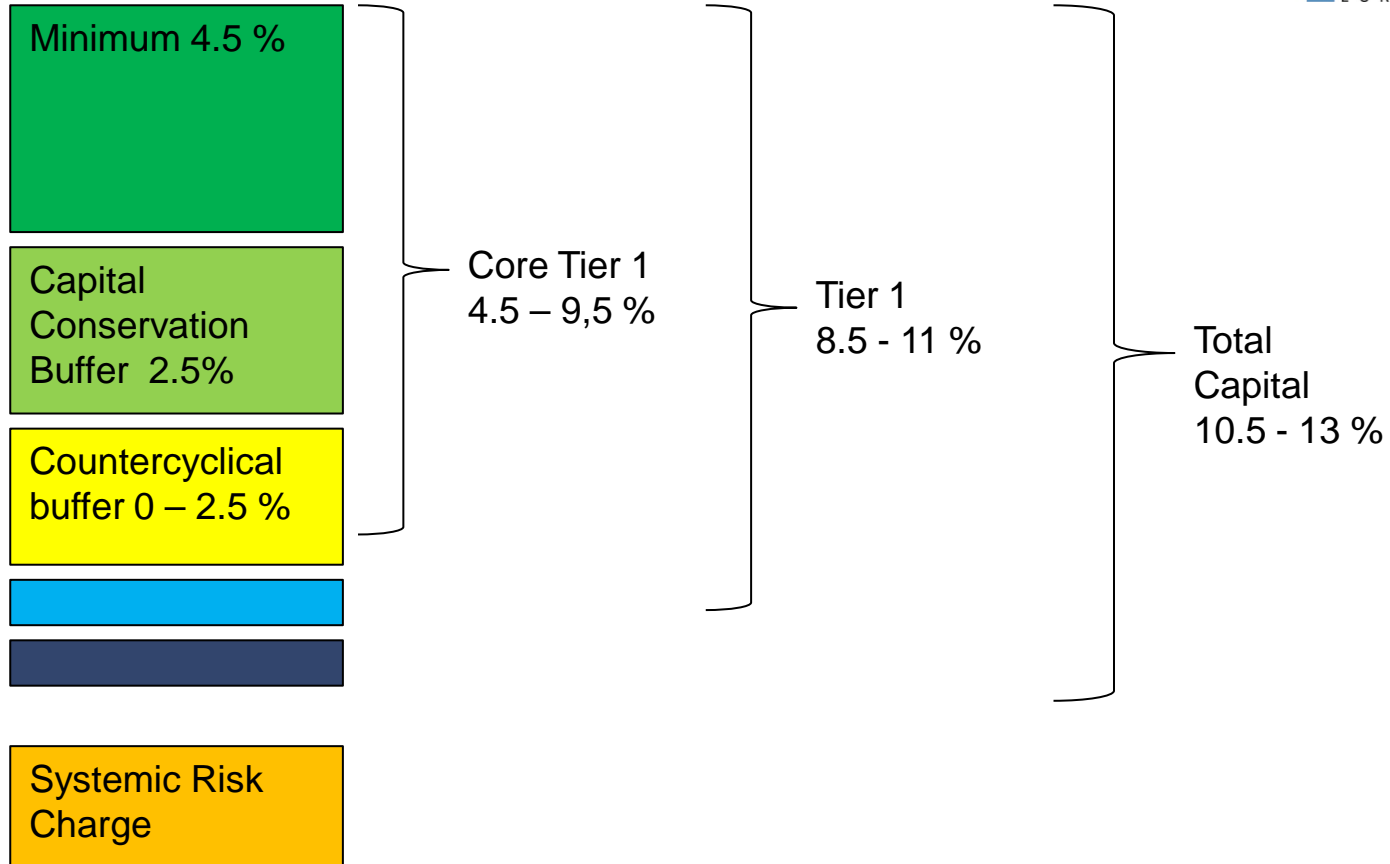
Macroprudential tools: issues

- **Macroprudential tools often adapt existing microprudential tools, eg**
 - Capital and liquidity requirements
 - Limits of leverage
 - Constraints on currency mismatches
 - Strengthening of financial infrastructure
- **Understanding of financial markets is incomplete**
- **Signal extraction**
- **Rules vs. Discretion**
- **Regulatory arbitrage and cross-border coordination**
- **Relationship with monetary policy**

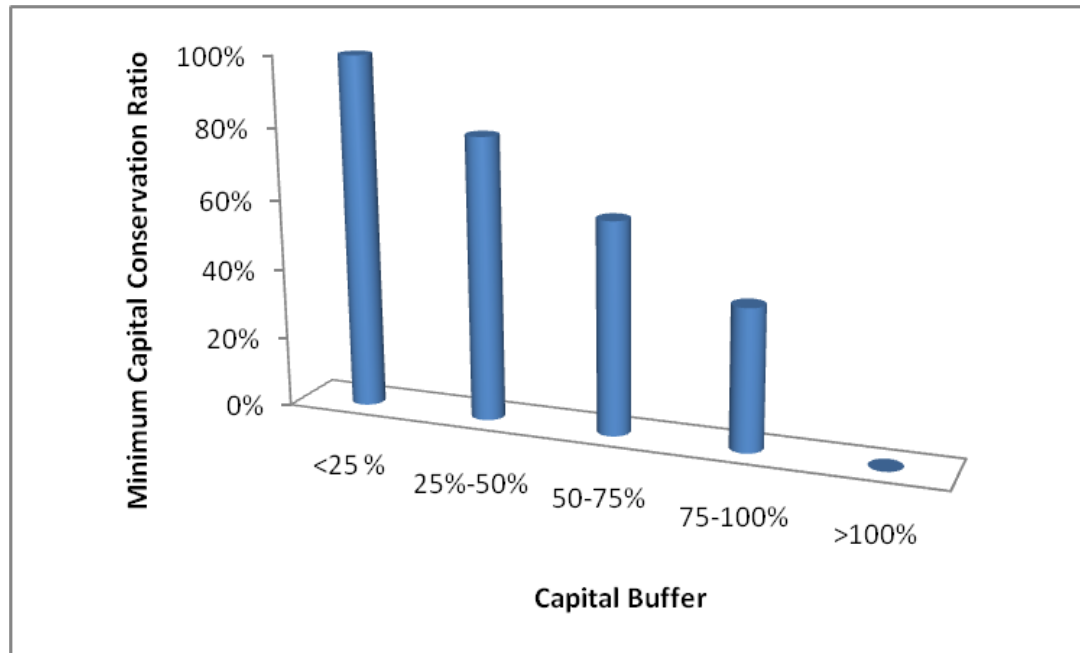
International initiatives (FSB, IMF, BIS)

- **Basel III: countercyclical buffer, capital conservation buffer, minimum leverage ratio, liquidity standards**
- **CGF recommendations on margins and haircuts**
- **IASB and FASB exposure drafts on expected provisioning.**
- **Higher capital requirements, liquidity requirements (Basel III)**
- **SIFI framework**
- **OTC derivative framework**

Capital regulation (Basel 3)



Capital Conservation Buffer



- ▮ Serves as additional buffer
- ▮ Avoids the pro-cyclicality of binding minimum capital requirements

The cyclicality of capital requirements

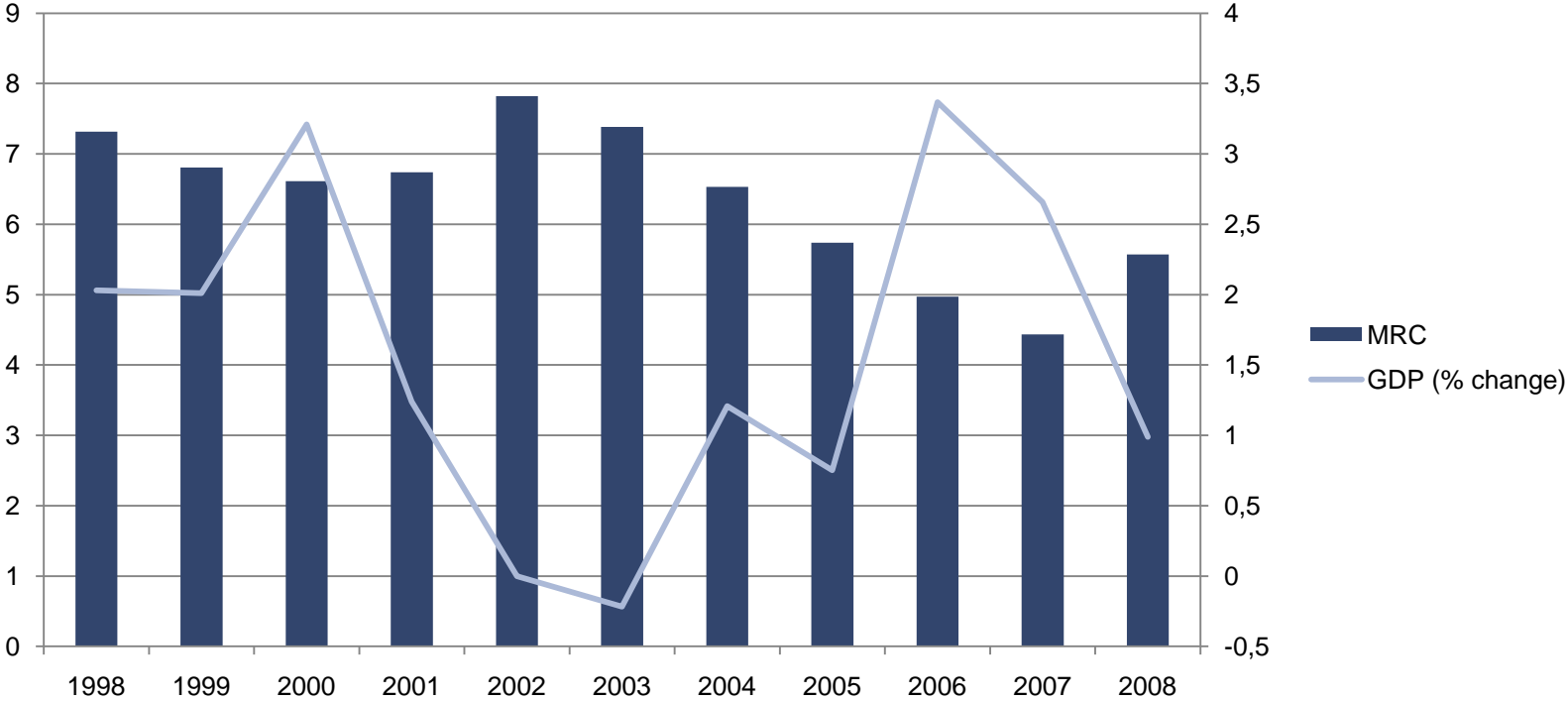
- **The pro-cyclical effects of capital requirements has been adressed in many academic papers.**
- **Problem of binding requirements: Under 8 % MRC, a rise in capital by 1 € leads to an increase in loans by more than 12 € Conversely, a drop in capital in the amount of 1 € leads to reduction in lending by 12 €**
- **Capital conservation buffer mitigates this effect.**

Basel 2 and the problem of cyclicality

- ▮ **Systemic risks often arise in periods of strong credit growth.**
- ▮ **At the same time, idiosyncratic risks often appear to be low.**
- ▮ **Basel II is based on borrowers' creditworthiness (probability of default, PD)**
- ▮ **PDs tend to decrease during credit expansion.**

- ▮ **Solution: Add capital buffer based on macro factor (e.g. credit growth)**

Simulating Basel 2



Countercyclical Capital Buffer

- BCBS envisages capital buffer between 0-2.5 %
- Implementation in CRD IV. Valid from 1 Jan 2016
- National requirements: Countercyclical buffer based on credit-GDP gap
- Bank specific requirement: Buffer reflects geographic composition of bank's portfolio
- Reciprocity of requirements
- Responsibility with national supervisors
- Coordinating function of ESRB

Liquidity regulation: Liquidity coverage ratio

- Intended to promote resilience to liquidity disruptions over a thirty day horizon.
- Ensures that global banks have sufficient liquid assets to offset net cash outflows in a stress scenario

$$\frac{\text{Stock of high-quality liquid assets}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\%$$

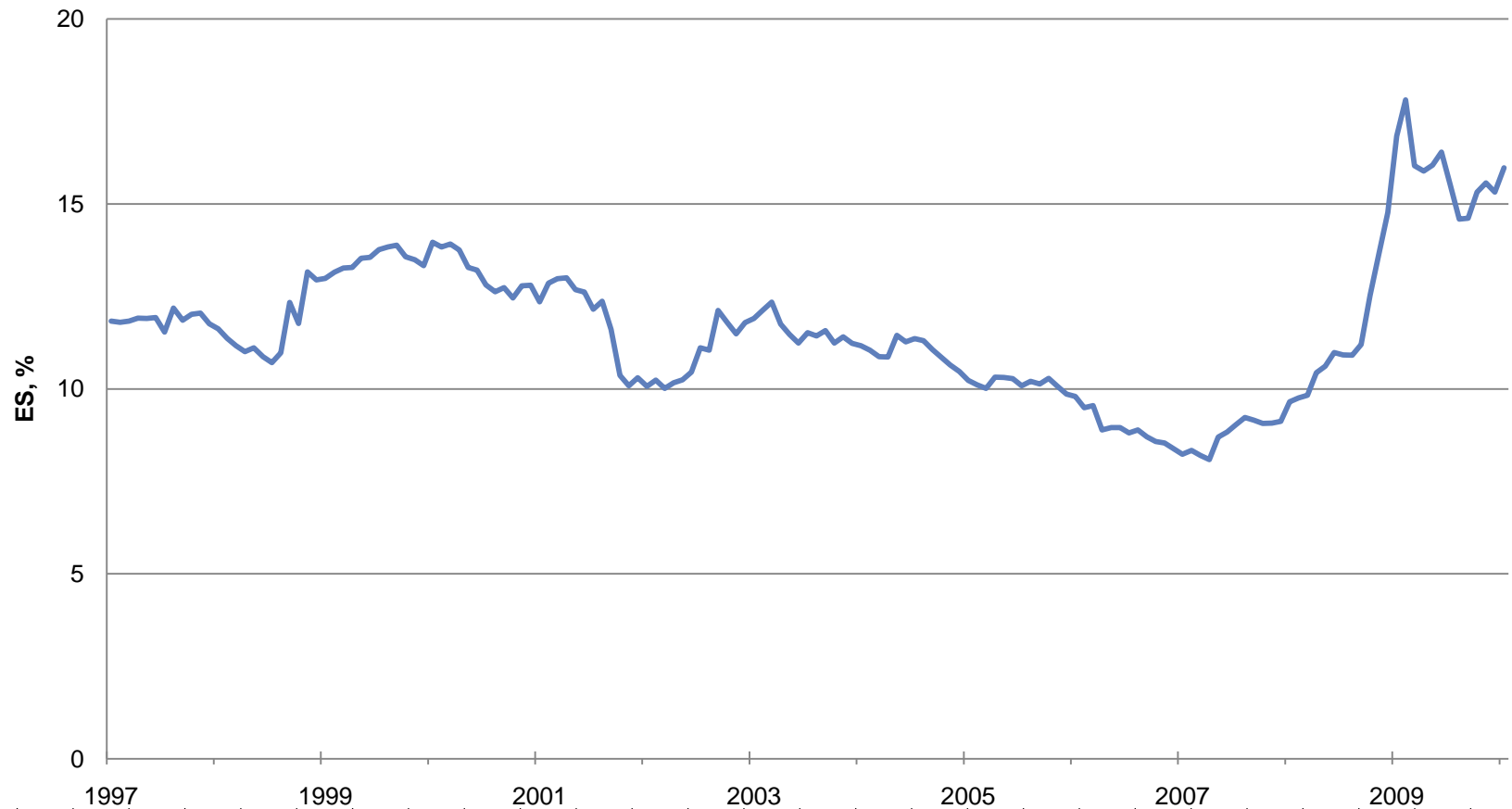
Liquidity regulation: Net stable funding ratio

- Requires a minimum of stable sources of funding to the liquidity profile of assets over a one-year horizon.

$$\frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} \geq 100\%$$

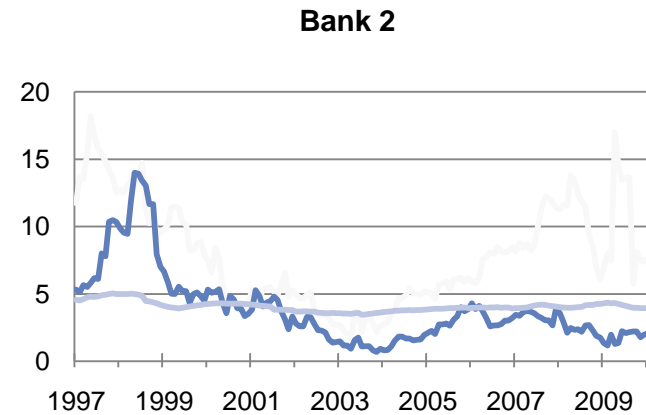
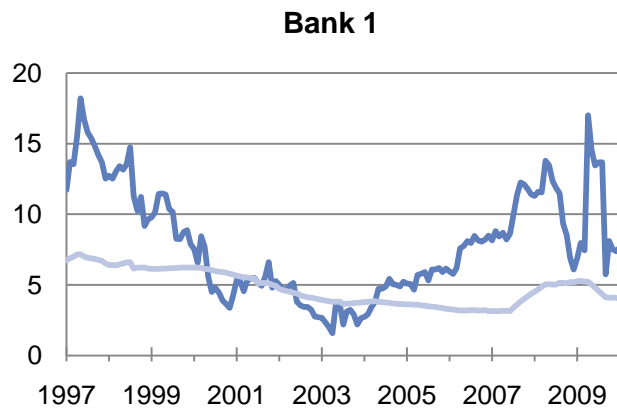
Systemically important institutions: Introduction (I)

Evolution of systemic risk based on ES indicator



Systemically important institutions: Introduction (II)

Systemic risk contribution of individual institutions



Policy framework for GSIFIS

Defining features of SIFIS

- Size
- Complexity
- Systemic interconnectedness

Components of Policy Framework

- Resolution framework
- Higher loss absorbing capacity
- More intense supervisory oversight
- Robust financial infrastructure

Loss absorbency

- **BCBS study to be completed by mid 2011 on magnitude of capital surcharge**
- **FSB in consultation with BCBS will give recommendation by Dec 2011**

Resolution framework

- **Resolution of financial institutions without taxpayers exposure while protecting vital economic functions**
- **Designated resolution authority**
- **Mechanisms to allow recapitalization**