



# MACROPRUDENTIAL POLICY: A PRACTITIONER'S PERSPECTIVE

ECON 4335 ECONOMICS OF BANKING  
IDA WOLDEN BACHE  
17 NOVEMBER 2014

# Agenda

1. What is macroprudential policy?
2. Dimensions and indicators of systemic risk
3. Macroprudential policy instruments
4. Macroprudential policy in Norway
5. Norges Bank's advice on the countercyclical capital buffer



# WHAT IS MACROPRUDENTIAL POLICY?



# Definition

## Macroprudential policy:

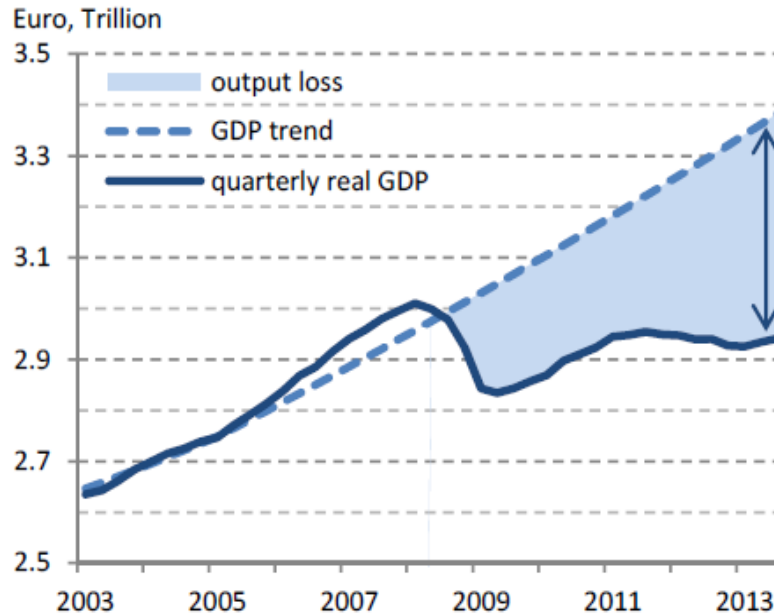
- *A policy that uses primarily prudential tools to limit systemic or system-wide financial risk, thereby limiting the risk of disruption in the financial system with the potential to have negative consequences the real economy.*
- *Aims ultimately to reduce the probability and severity of financial crises*



# Financial crises are costly...

... and microprudential supervision not sufficient to prevent them

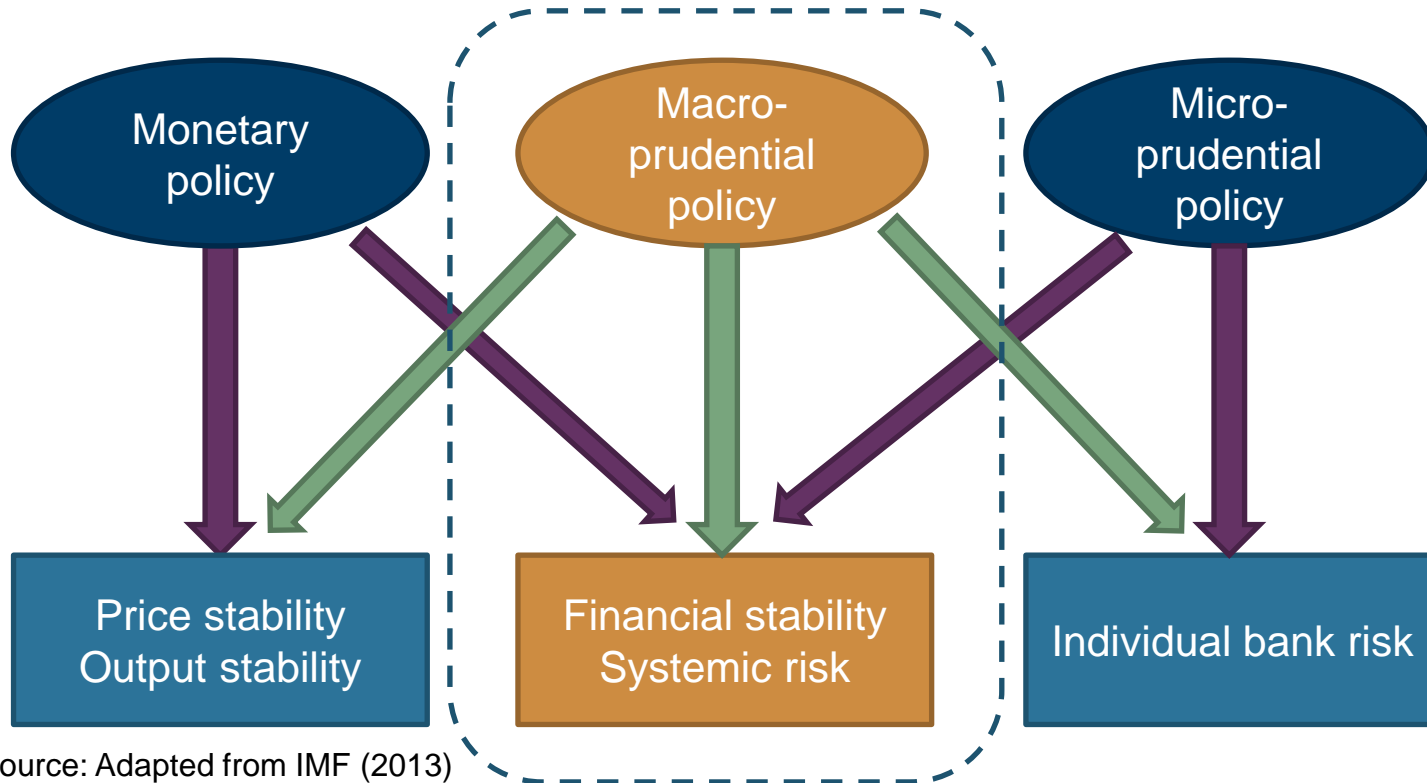
## GDP losses in the EU as a result of the global financial crisis



Source: ESRB



# Policy interactions



Source: Adapted from IMF (2013)



# Macro- vs microprudential policy

## The two perspectives contrasted

	<b>Macro-prudential</b>	<b>Micro-prudential</b>
<b>Policy objective</b>	Limit financial system-wide distress	Limit distress of individual financial institutions
<b>Ultimate goal</b>	Avoid output (GDP) costs due to financial instability	Protect consumers of financial services (depositors, investors, policyholders)
<b>Characterisation of financial asset risks</b>	Dependent on collective behaviour; endogenous	Independent of individual agents' behaviour; exogenous
<b>Correlations and common exposures across financial institutions</b>	Important	Irrelevant
<b>Calibration of prudential controls</b>	In terms of system-wide risk; top-down	In terms of individual institutions' risk; bottom-up

Source: Borio (2003).



# **DIMENSIONS AND INDICATORS OF SYSTEMIC RISK**





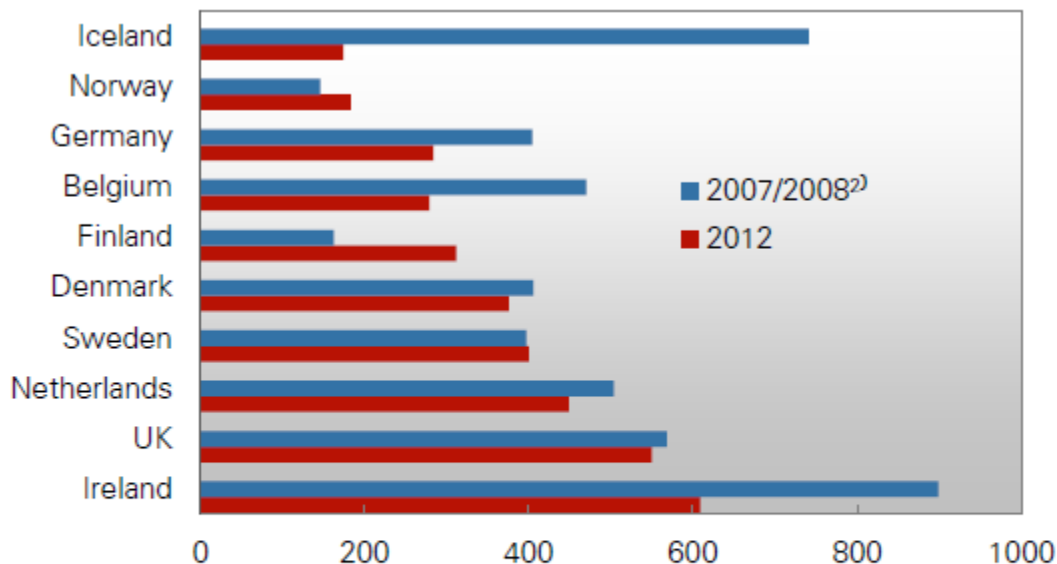
# Structural versus cyclical risk

Macroprudential policies aim to address two dimensions of system-wide risk

1. Cyclical systemic risk: The evolution of system-wide risk *over time* – the “time dimension”
2. Structural systemic risk: The distribution of risk in the financial system *at a given point in time* – the “cross-sectional dimension”



# Structural risks: Bank assets/GDP



1) All national banks and banking groups including subsidiaries and branches abroad in addition to subsidiaries and branches of foreign banks. Norwegian GDP includes the oil sector.

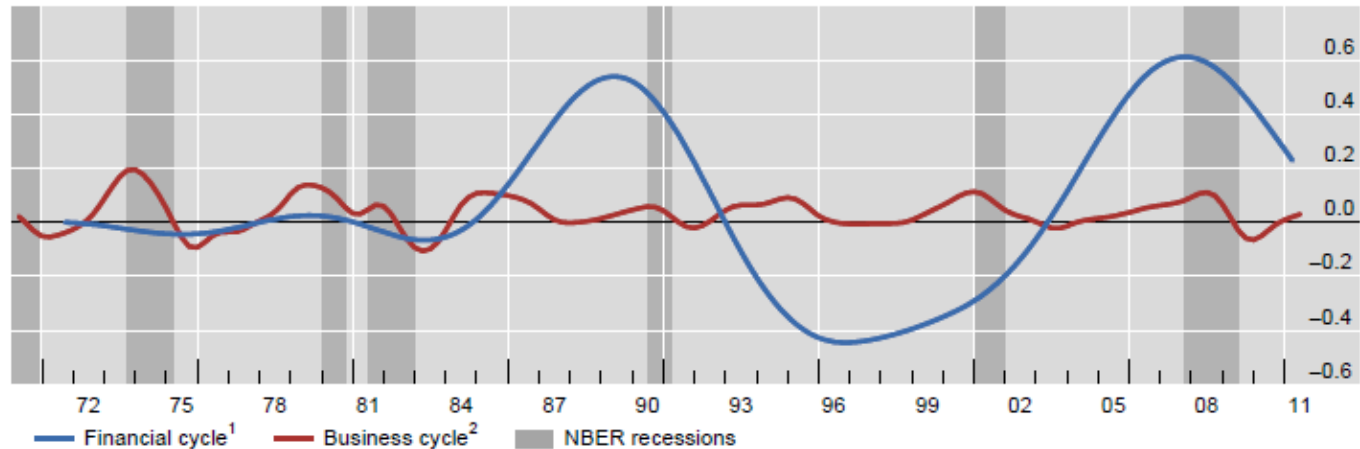
2) Data for Belgium, Finland and Norway are for 2007, while data for the rest are for 2008.

Sources: ECB, Central Bank of Iceland and Norges Bank



# Cyclical risks: The financial cycle

The financial and business cycles in the United States



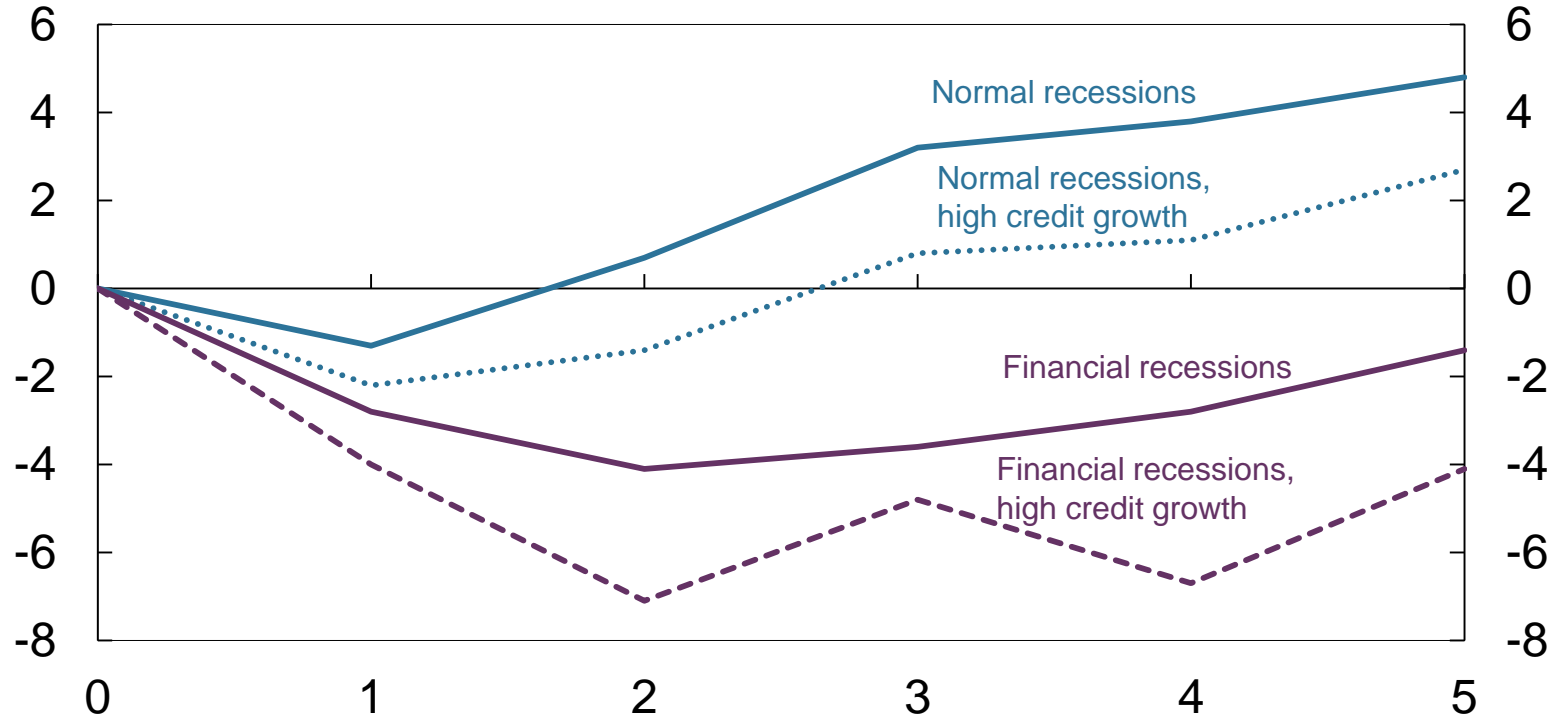
<sup>1</sup> The line traces the financial cycle measured as the average of the medium-term cycle in the component series using frequency-based filters. <sup>2</sup> The line traces the GDP cycle identified by the traditional shorter-term frequency filter used to measure the business cycle.

Source: Drehmann et al (2012).

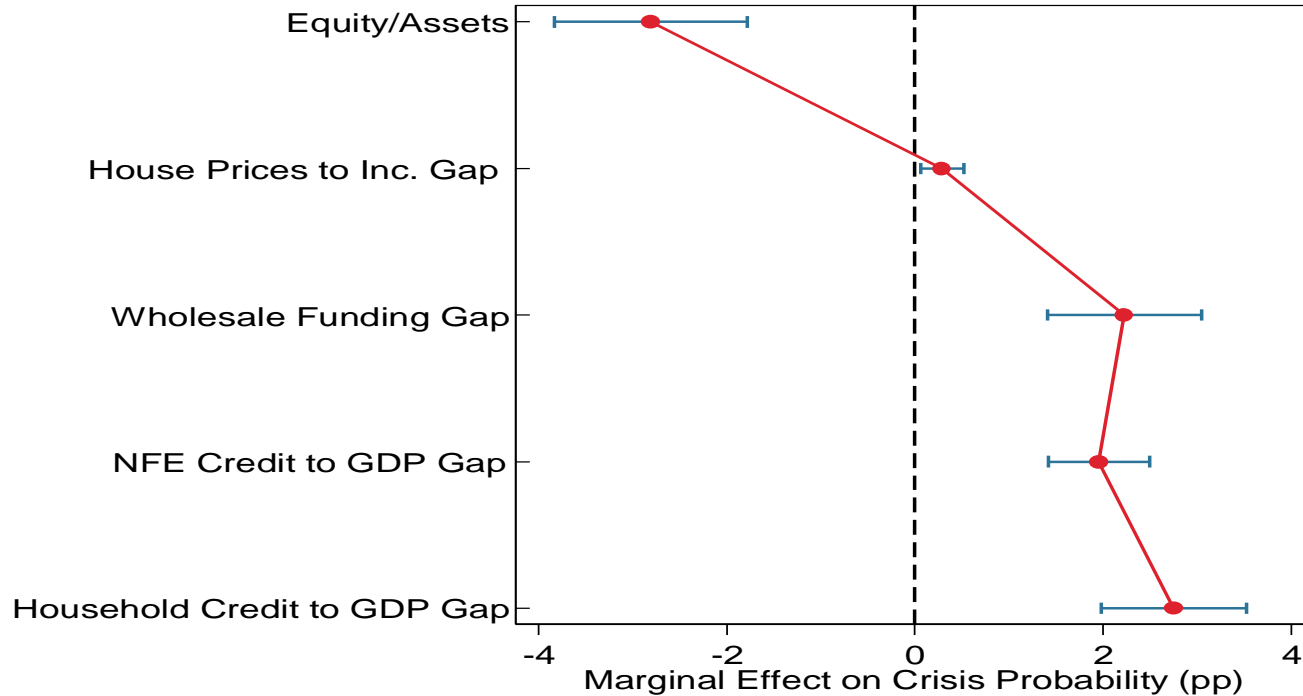


# High credit growth - deeper recession

Real GDP per capita. Percent deviation from the start of the crisis



# Effects on crisis probability of credit and asset prices



# Dimensions of systemic risk

## Dimensions of systemic risk

Excessive credit growth and leverage (in specific sectors)

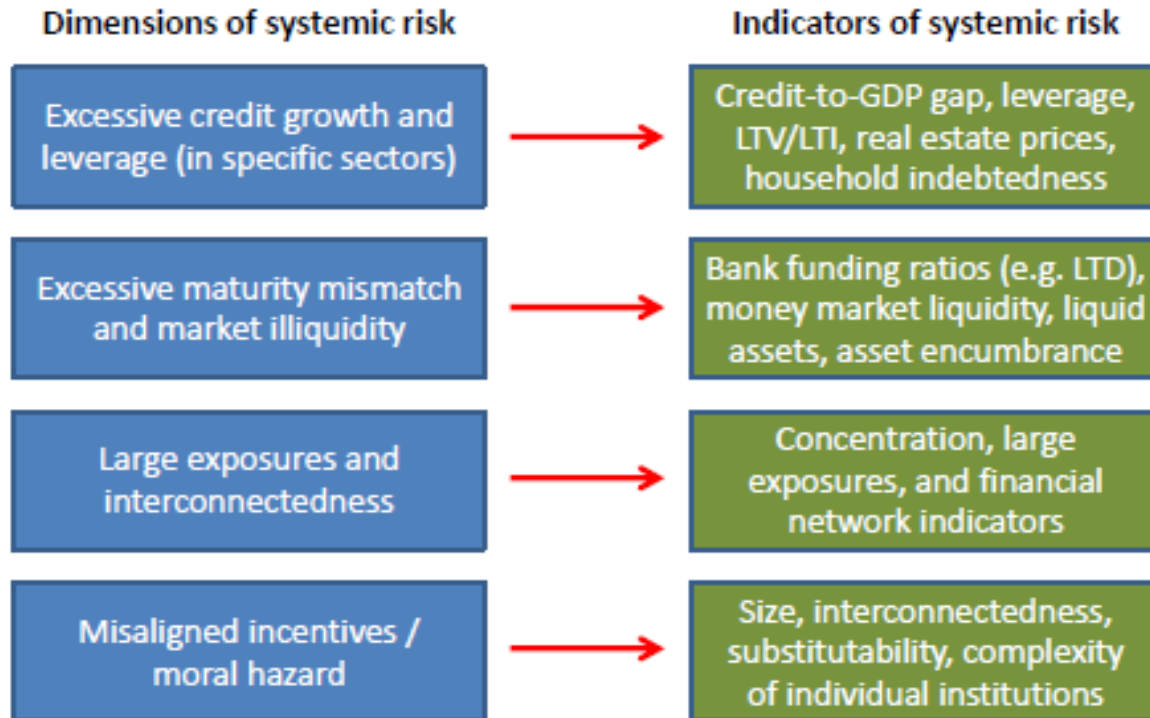
Excessive maturity mismatch and market illiquidity

Large exposures and interconnectedness

Misaligned incentives / moral hazard



# Indicators of systemic risk



# MACROPRUDENTIAL POLICY INSTRUMENTS





# Macroprudential policy instruments

Excessive credit growth and leverage			Excessive maturity mismatch and market illiquidity		Exposure concentration	Misaligned incentives	
Counter cyclical capital buffer	Capital instruments - leverage ratio - by sector (real estate, intra-financial) - systemic risk buffer	Loan-to-value/loan-to-income caps	Stable funding restrictions (e.g. NSFR, LTD)	Liquidity charges	Large exposure restrictions (by counterparty, sector, geographic)	SIFI capital surcharges (G-SII and O-SII buffer)	Systemic risk buffer (SRB)

Source: ESRB



# MACROPRUDENTIAL POLICY IN NORWAY



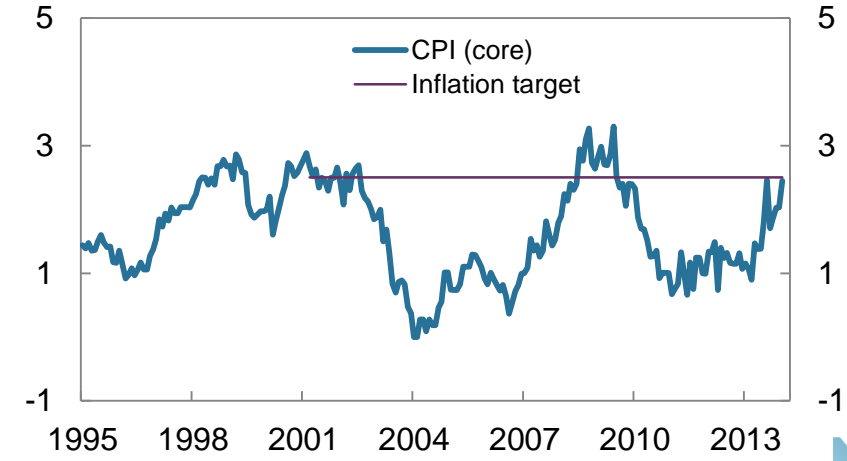
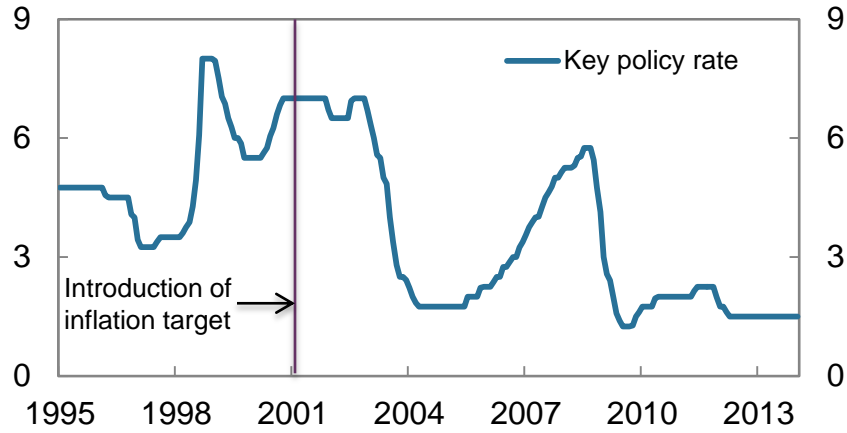
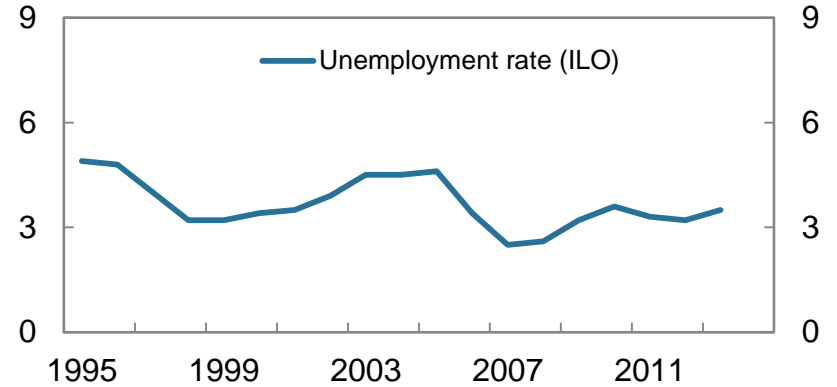
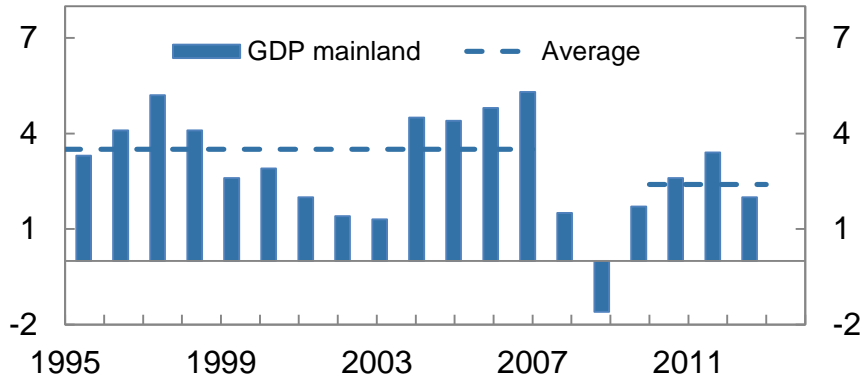
# Financial stability

## Division of responsibilities

- **The Ministry of Finance**
  - Overriding responsibility for ensuring that Norway has a well functioning financial industry. Plays a key role in coordinating the public response to financial crises
- **Finanstilsynet (Financial Supervisory Authority of Norway)**
  - Has particular responsibility for solvency, management and control in financial institutions
  - Has direct supervisory authority over financial sector participants
- **Norges Bank**
  - Shall promote a robust and efficient financial system
  - Norges Bank may provide extraordinary liquidity to the banking system.
  - Issues advice on the level of the countercyclical capital buffer in banks

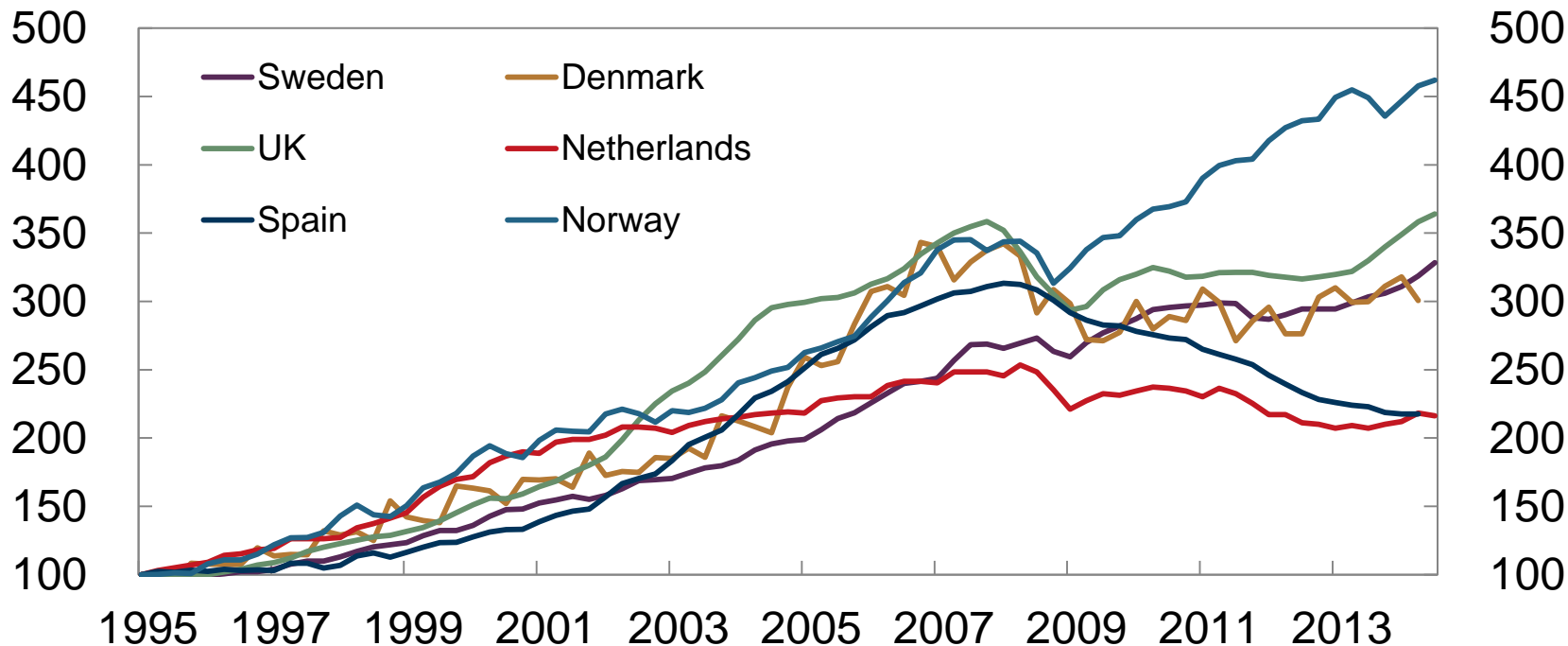


# Macroeconomic backdrop



# Macroeconomic backdrop: House prices

Index. Q1 1995 = 100

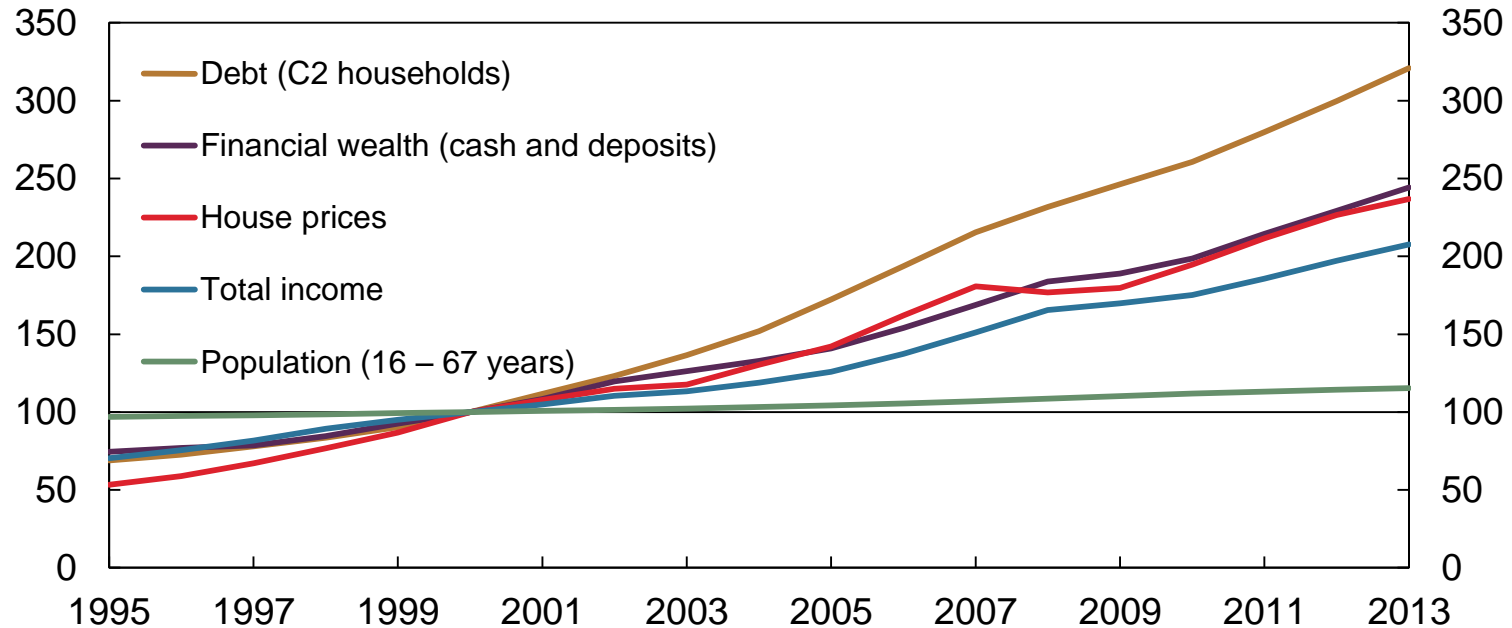


1) Denmark and Spain: up to and including Q2 2014  
Source: Thomson Reuters



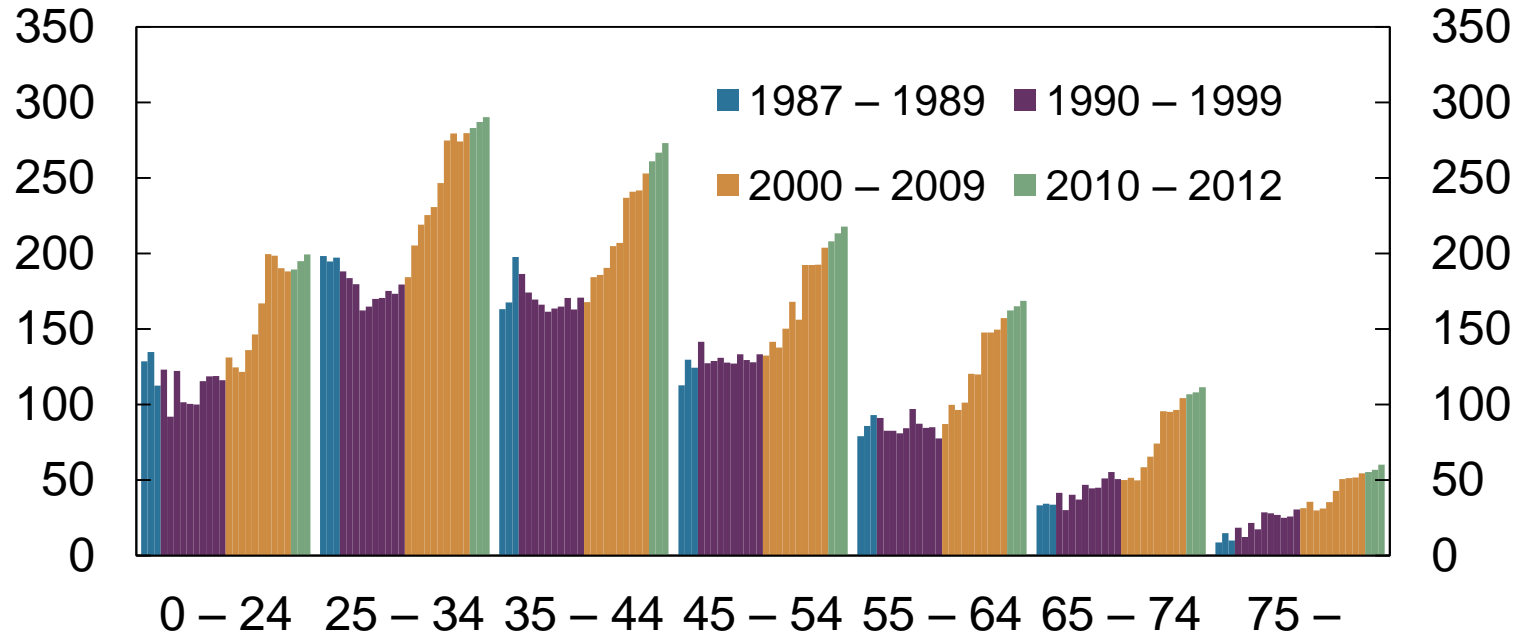
# Macroeconomic backdrop: Sharp increase in household debt

Indexed. 2000=100



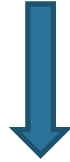
# Macroeconomic backdrop: Increasing debt burdens

Debt as a share of after-tax income. Age groups. Percent.



# New capital regulation framework

Basel committee for banking supervision (Basel III)



EU (Capital Requirements Directive CRD IV/CRR)



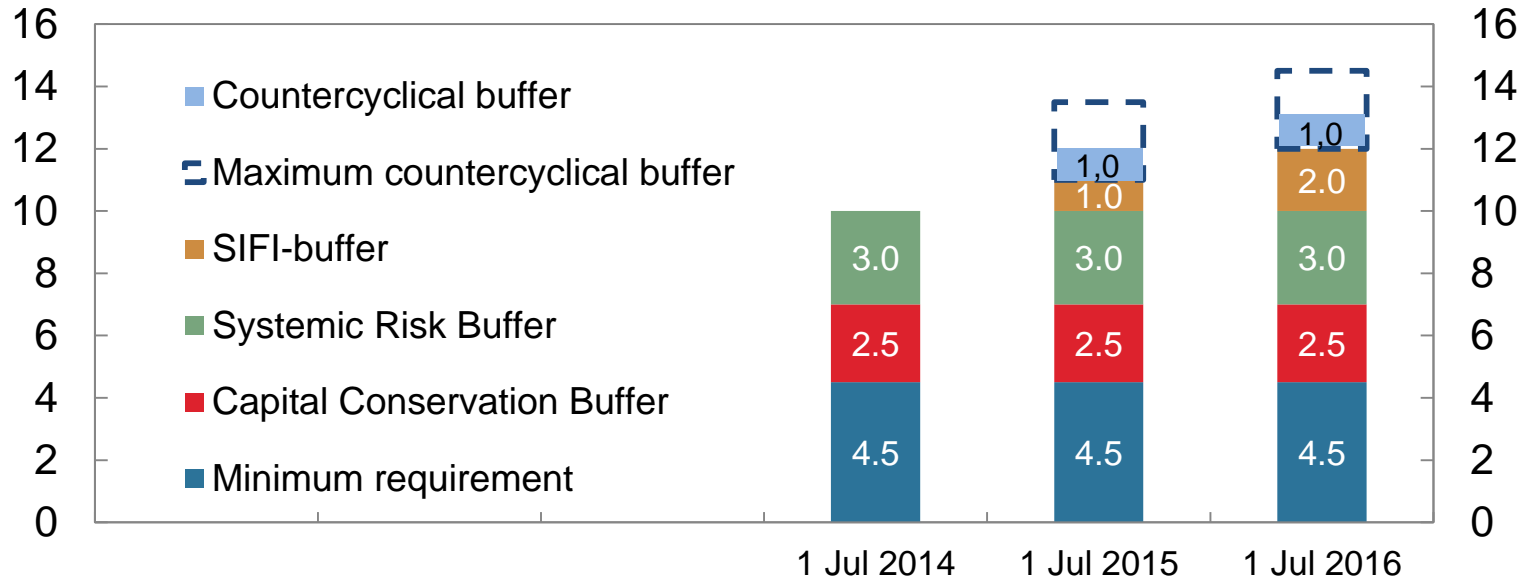
EEA Agreement/Norwegian law





# CET1 requirements Norwegian banks

Percent of risk weighted assets



# Macroprudential policy response

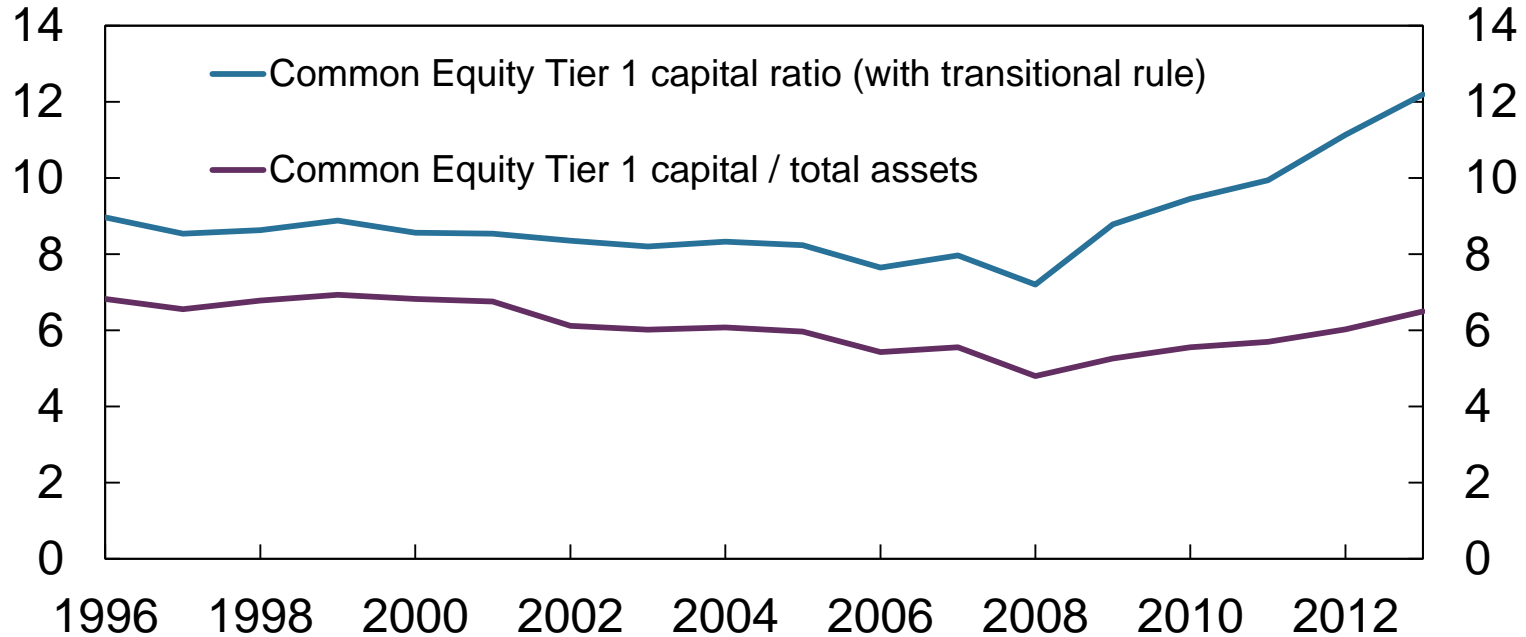
Higher capital requirements for banks and higher risk weights on mortgages

$$\text{capital adequacy ratio} = \frac{\text{equity}}{\sum_i \text{risk weight}_i \times \text{asset}_i}$$



# Norwegian banks' capital adequacy

Percent



# **NORGES BANK'S ADVICE ON THE CCB**



# Countercyclical capital buffer

Regulation from 4 October 2013

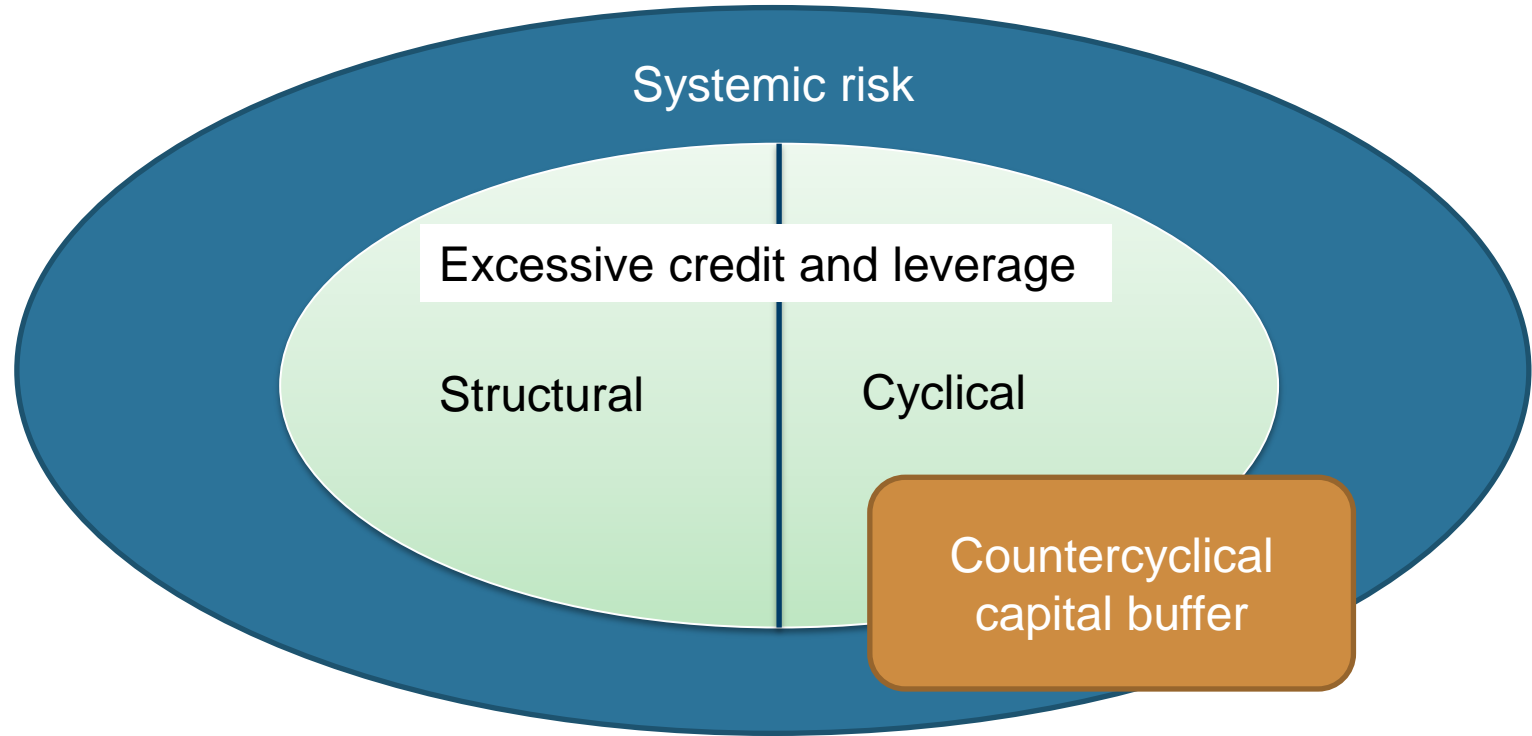
“The purpose of the countercyclical capital buffer is to strengthen the financial soundness of banks and their resilience to loan losses in a future downturn and mitigate the risk that banks will amplify a downturn by reducing their lending.”

“The level [of the buffer] shall ordinarily be between 0 and 2.5 percent”

“The decision basis shall contain an overview of the credit-to-GDP ratio and the extent to which it deviates from the long-term trend, as well as other indicators, and Norges Bank’s assessment of systemic risk that is building up or has built up over time.”

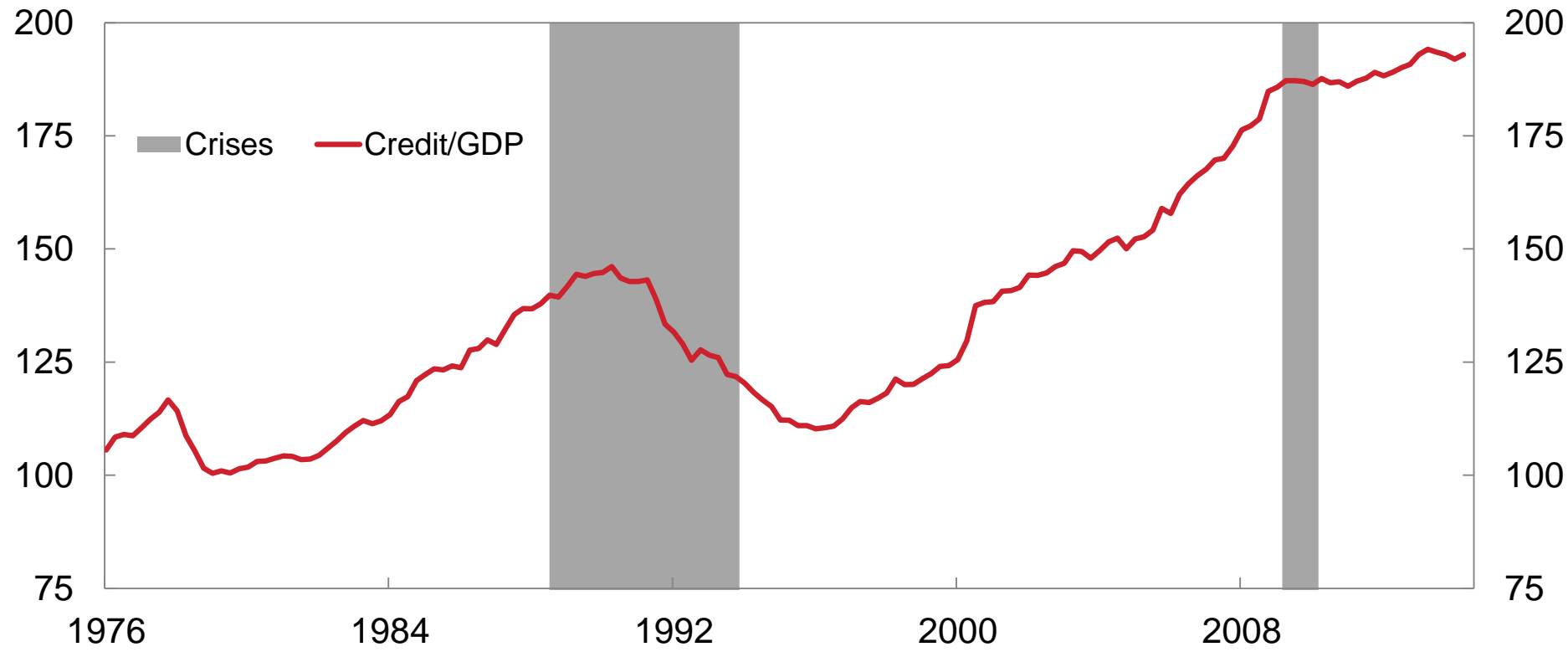


# Risk dimensions and the CCB



# Credit as a share of GDP

Percent. 1976 Q1 – 2014 Q2

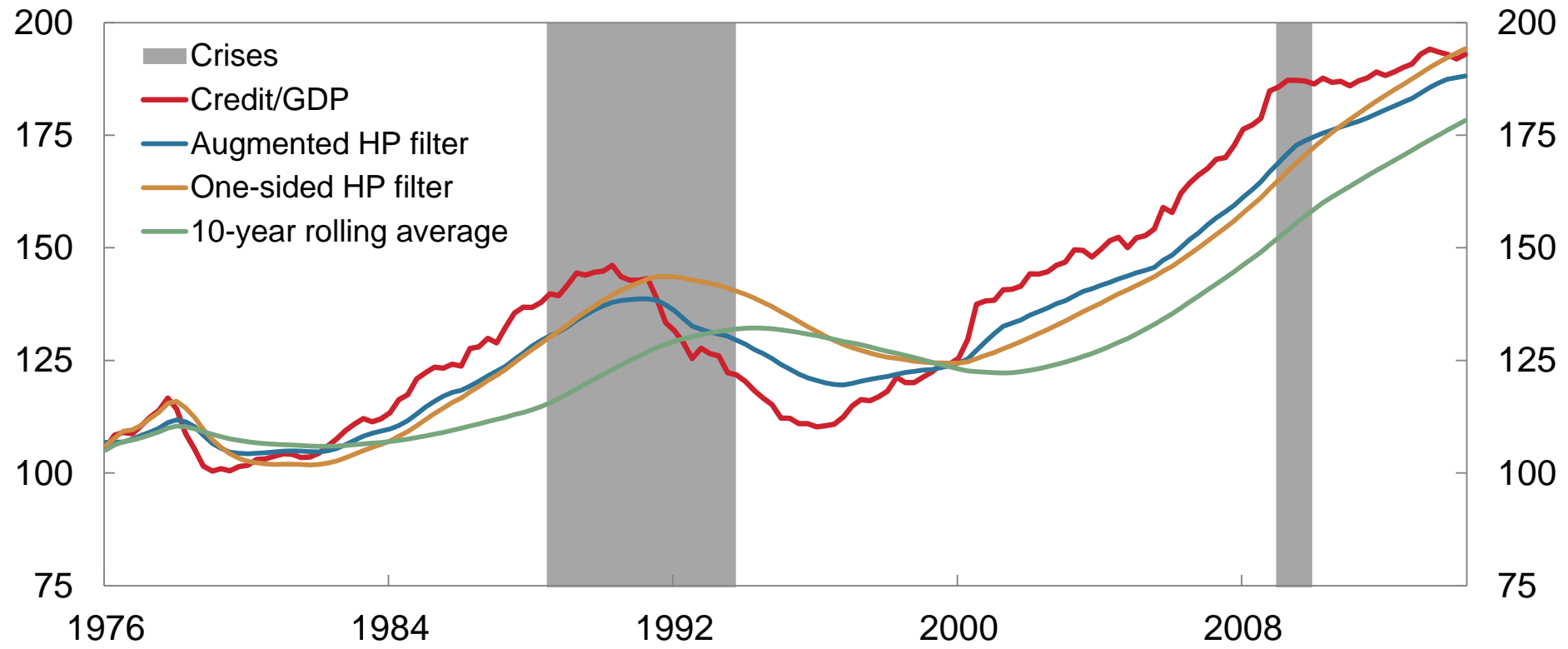


Sources: Statistics Norway and Norges Bank



# Credit as a share of GDP

Percent. 1976 Q1 – 2014 Q2



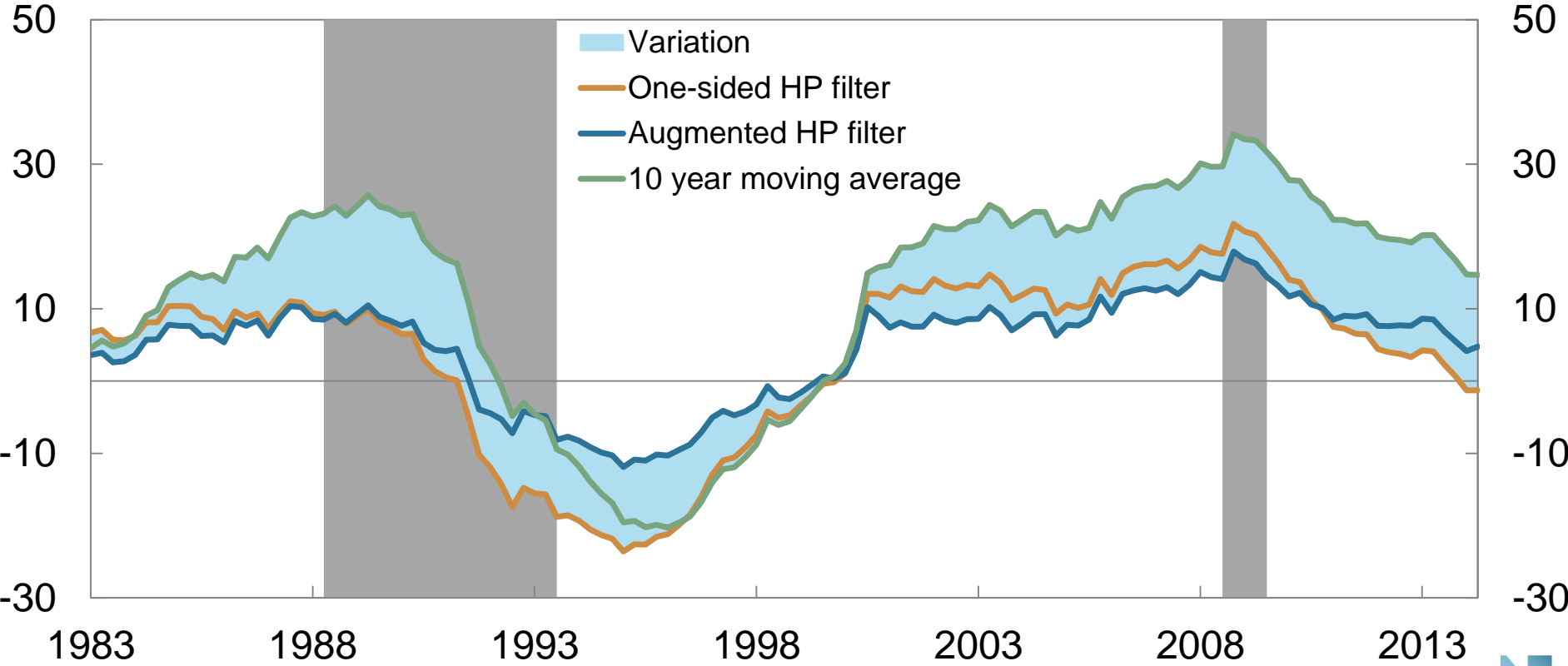
Sources: Statistics Norway and Norges Bank





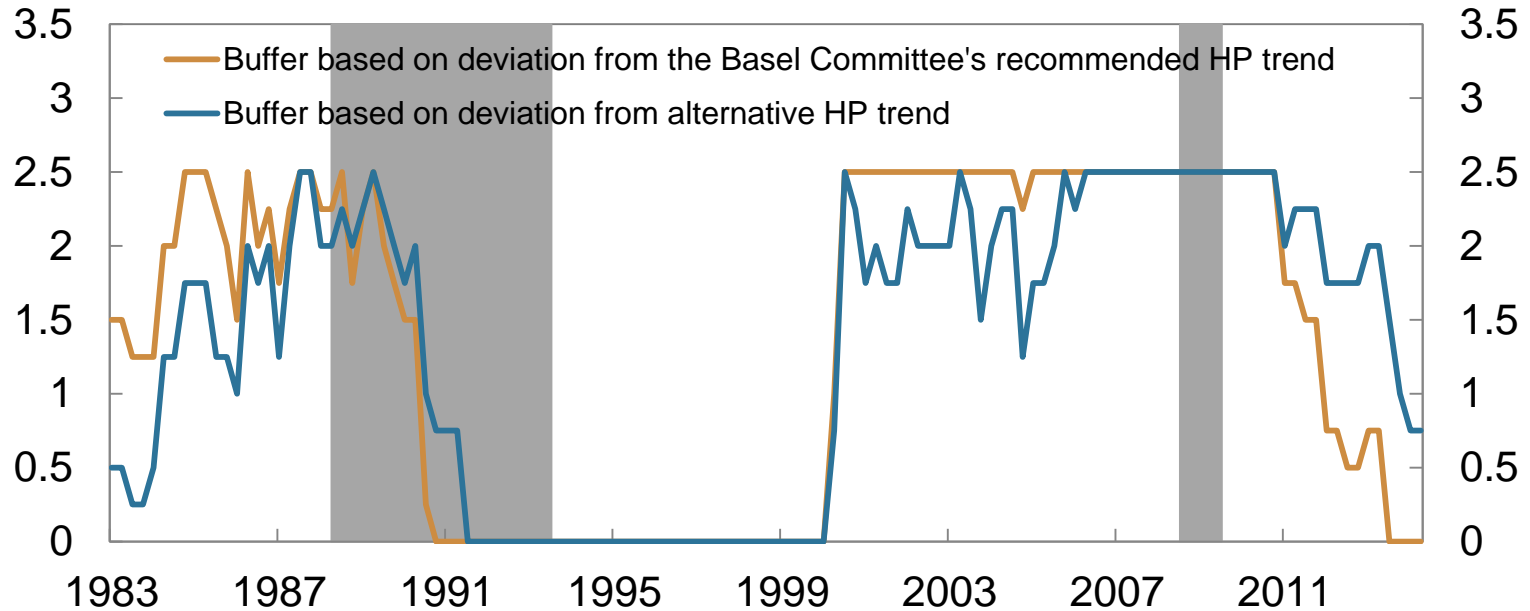
# Credit/GDP – deviation from trend

Percentage points. 1983 Q1 – 2014 Q2



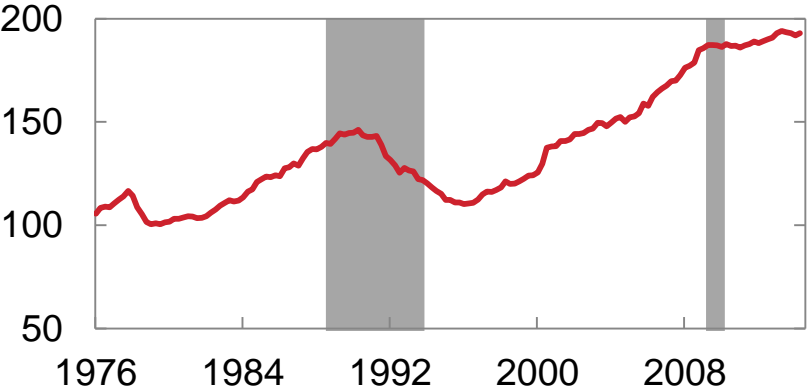
# Reference values for CCB in Norway

Basel “bufferguide”. Per cent of risk weighted assets

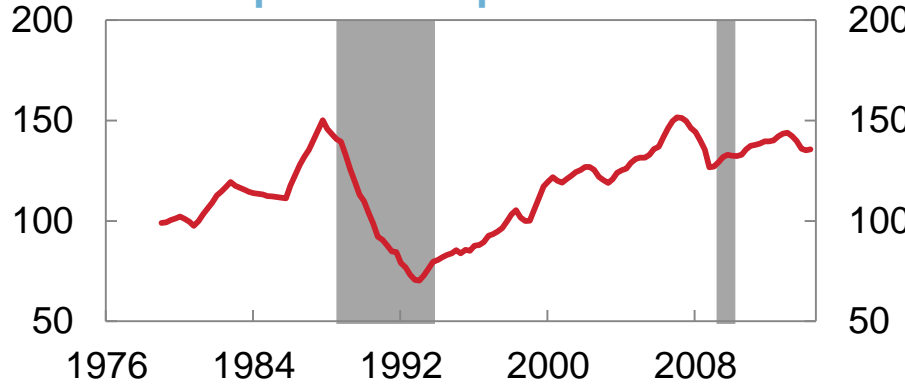


# Key indicators

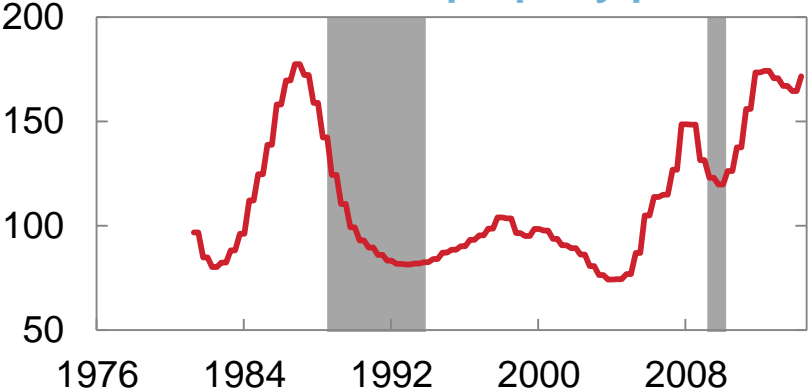
### Credit / GDP



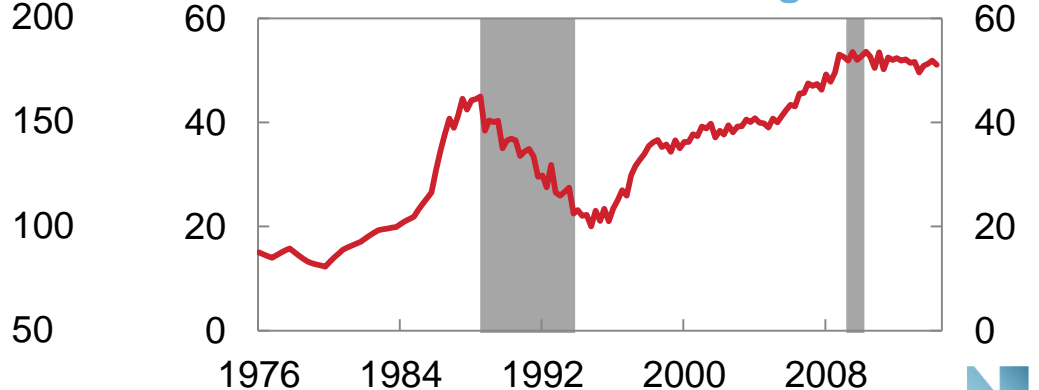
### House prices / disposable income



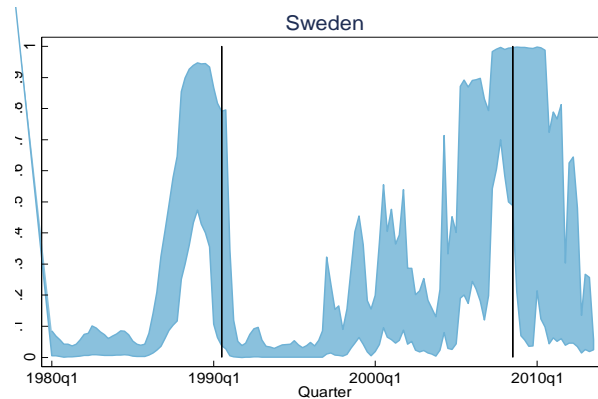
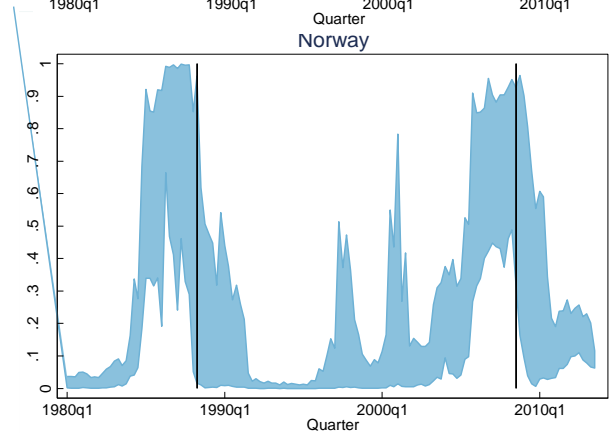
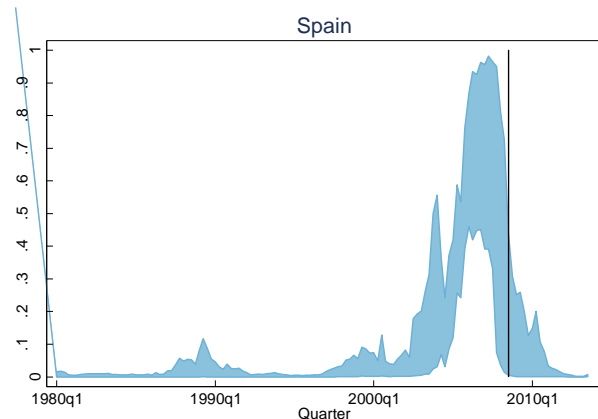
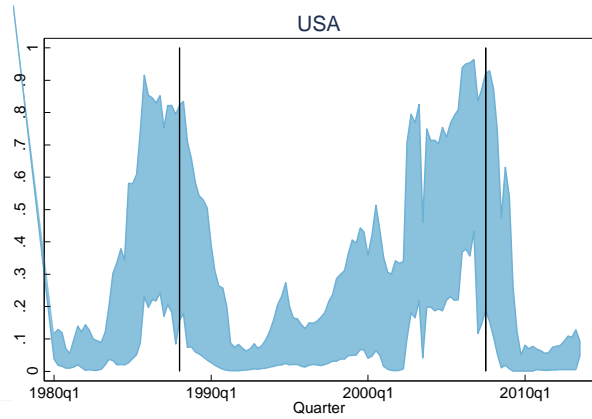
### Real commercial property prices



### Banks' wholesale funding ratio



# Estimated crisis probabilities





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# Literature

- Hanson, Samuel G., Anil K. Kashyap, and Jeremy C. Stein. 2011. "A Macroprudential Approach to Financial Regulation." *Journal of Economic Perspectives*, 25(1): 3-28.
- European Systemic Risk Board (2014): "Flagship Report on Macro-Prudential Policy in the Banking Sector"  
[https://www.esrb.europa.eu/pub/pdf/other/140303\\_flagship\\_report.pdf](https://www.esrb.europa.eu/pub/pdf/other/140303_flagship_report.pdf)
- Borchgrevink, H., Hansen, F. and S. Ellingsrud (2014): "Macroprudential regulation - what, why and how?", Norges Bank Staff Memo 13/2014  
[http://static.norges-bank.no/pages/101524/Staff\\_Memo\\_13\\_2014\\_eng.pdf](http://static.norges-bank.no/pages/101524/Staff_Memo_13_2014_eng.pdf)



# Logit model for estimating crisis probabilities

- Panel of 16 industrialized countries 1970Q1 – 2013Q2
  - Australia, Belgium, Canada, Finland, France, Germany, Italy, Japan, Korea, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA
- 28 identified crises
- Explanatory variables
  - Total credit to private non-financial sector, households and non-financial enterprises
  - Nominal and real GDP
  - House prices and disposable income
  - Equity prices
  - Inflation and interest rates
  - Banking sector variables (leverage and market financing)
  - Trade weighted global credit and house prices

