

# **Cycles and the procyclicality of policies**

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Vienna Economic Talks, February 27, 2009



# Objectives

- Defining cycles



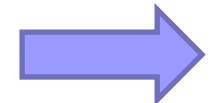
- Cycle characteristics



- Amplifying or smoothing the cycle?



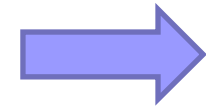
- Cyclicalities in the financial system





# Defining cycles

## ■ Classical or business cycle



Fluctuations in the level

## ■ Deviation cycles



Fluctuations in the deviation from the permanent component

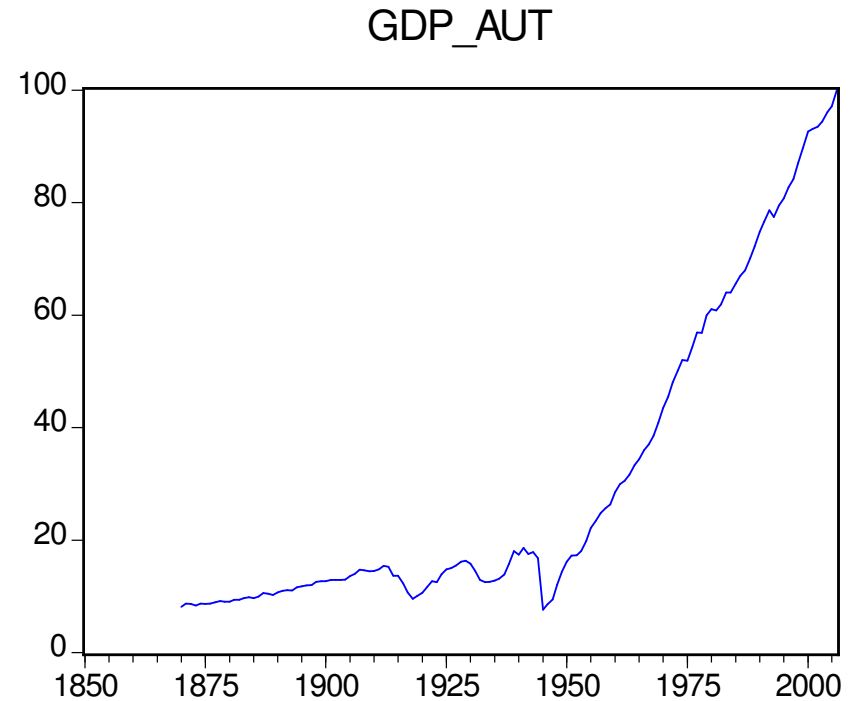
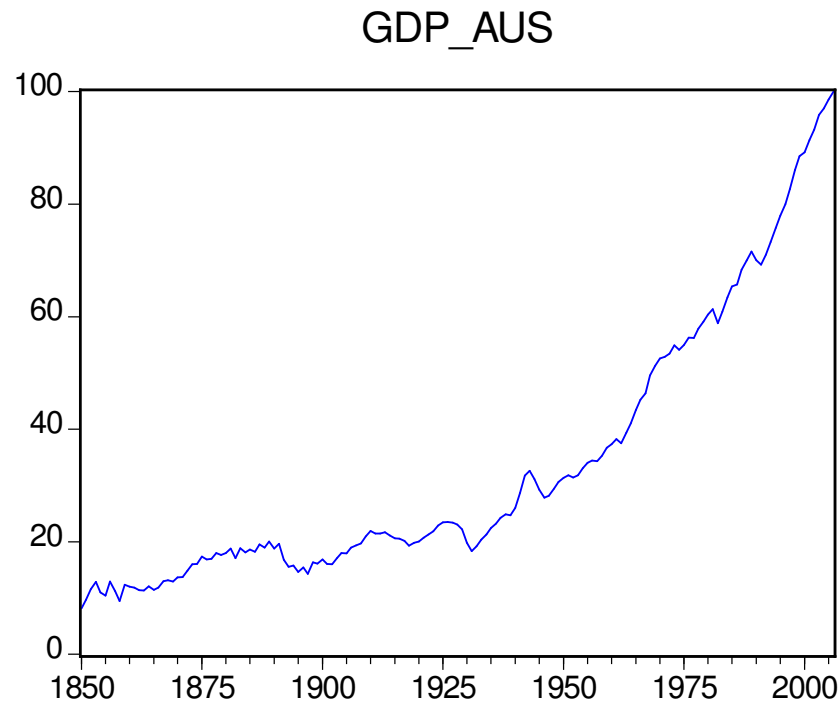
## ■ Cycles of growth rates



Fluctuations in growth rates

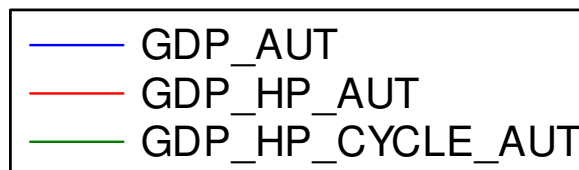
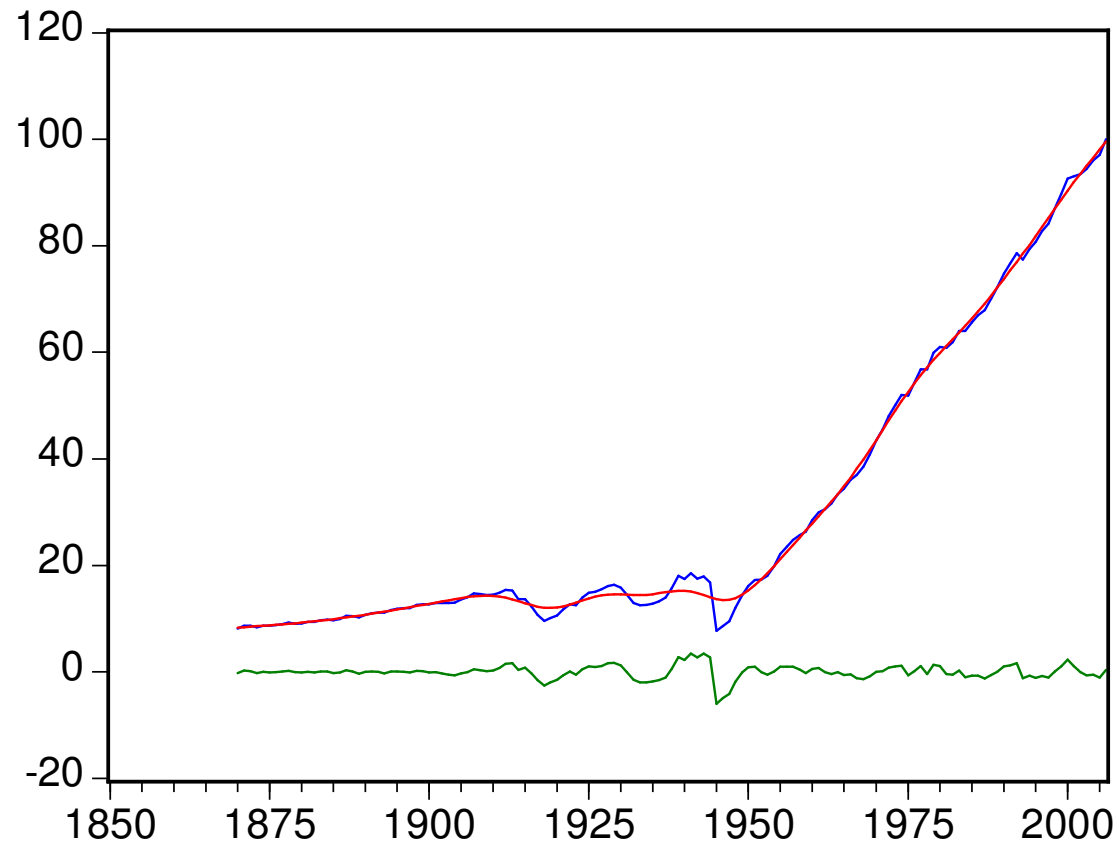
# Classical cycle, real GDP

## Australia and Austria, 1850 - 2006



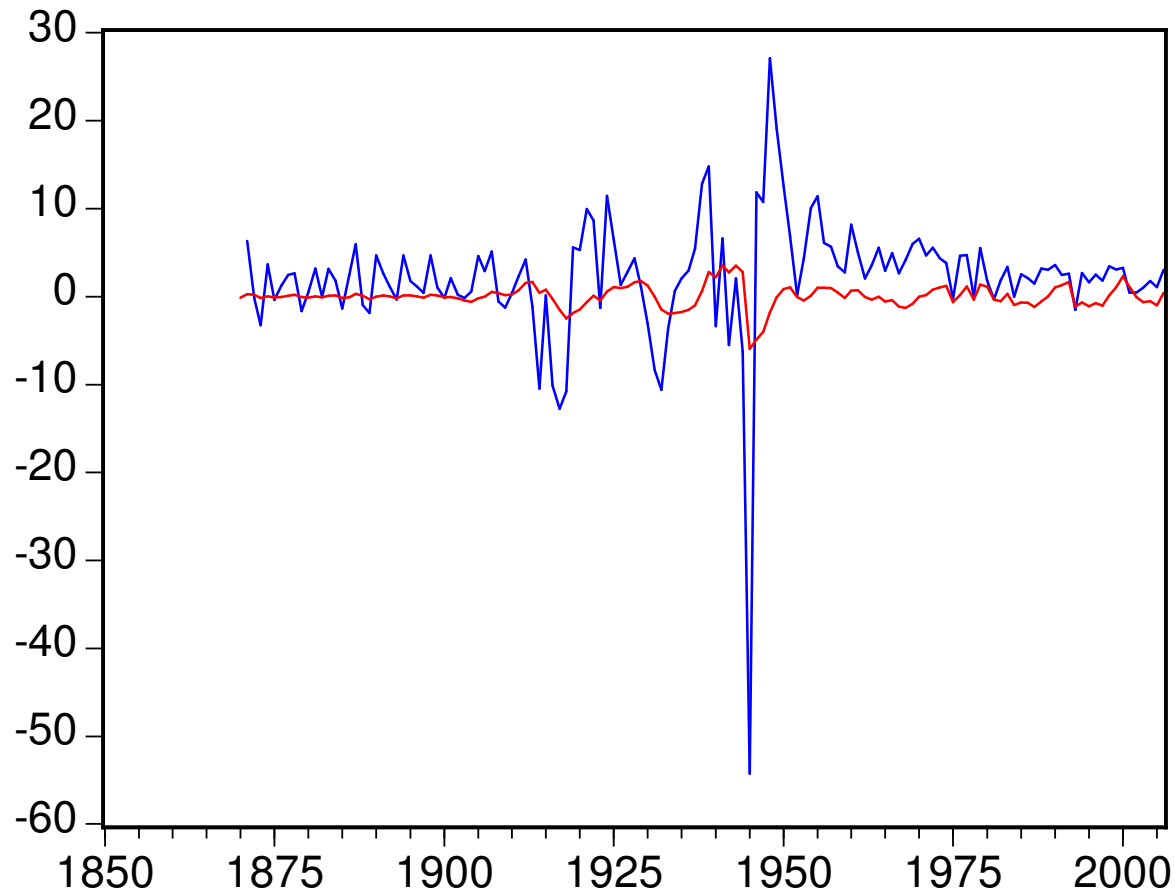
# Deviation cycle, real GDP

## Austria, 1850 - 2006



# Cycle of growth rates, real GDP

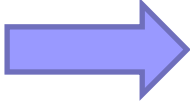
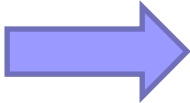
## Austria, 1850 - 2006



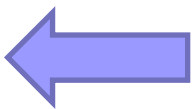
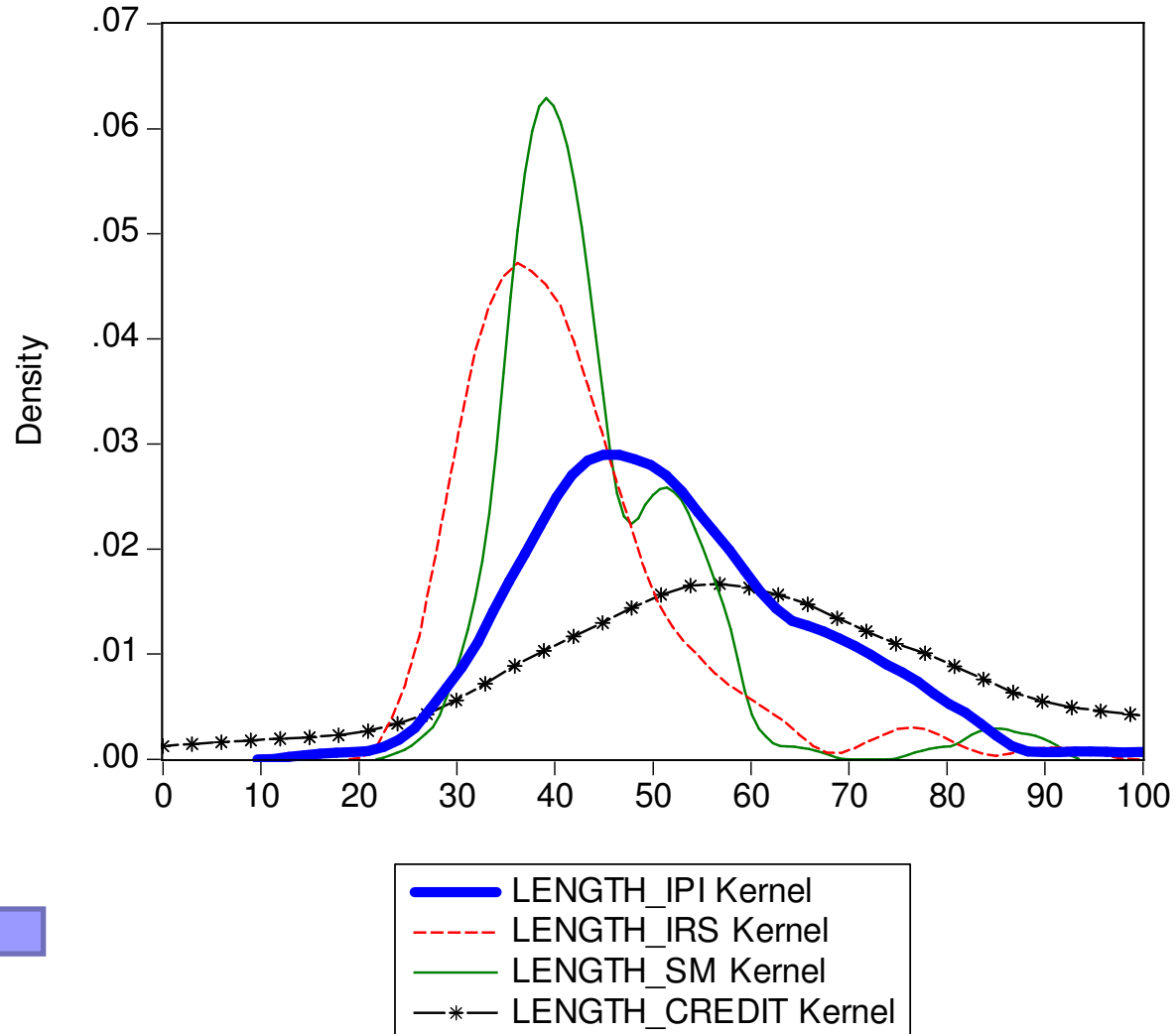
— D\_GDP\_AUT — GDP\_HP\_CYCLE\_AUT



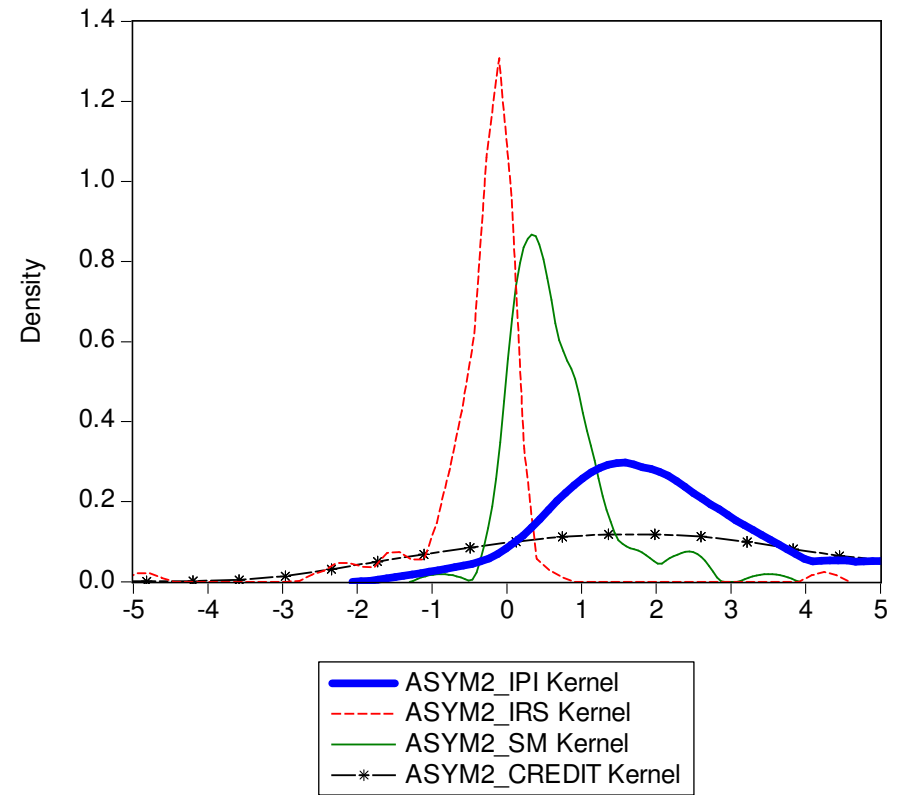
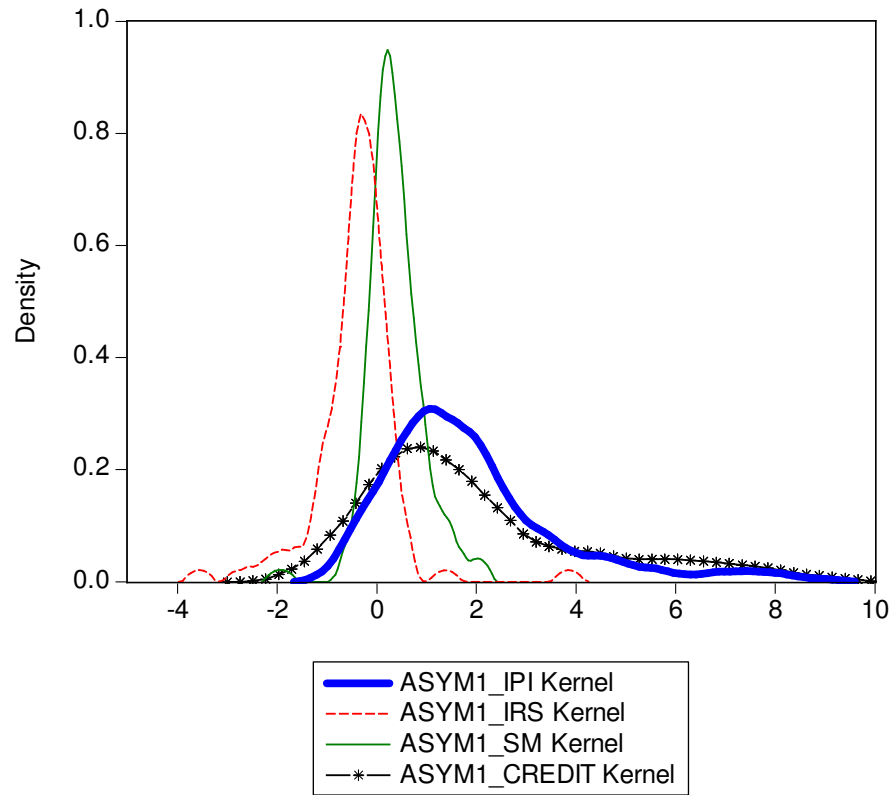
# Features of cycles in OECD countries, 1960-2008

- **Bry and Boschan algorithm** (Bry and Boschan, 1971; Harding, 1997; Everts, 2007)
  - Monthly data for: i.) industrial production, ii.) real credit, iii.) real share prices, iv.) interest rates
- **Length of cycles**
  - Long industrial production and credit cycles 
  - Shorter cycles in share prices and interest rates
- **Asymmetry of cycles (length and amplitude)**
  - IP and credit cycles more asymmetric (skewed to the right)
  - Share prices and interest rates more symmetric 

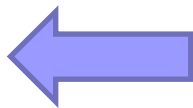
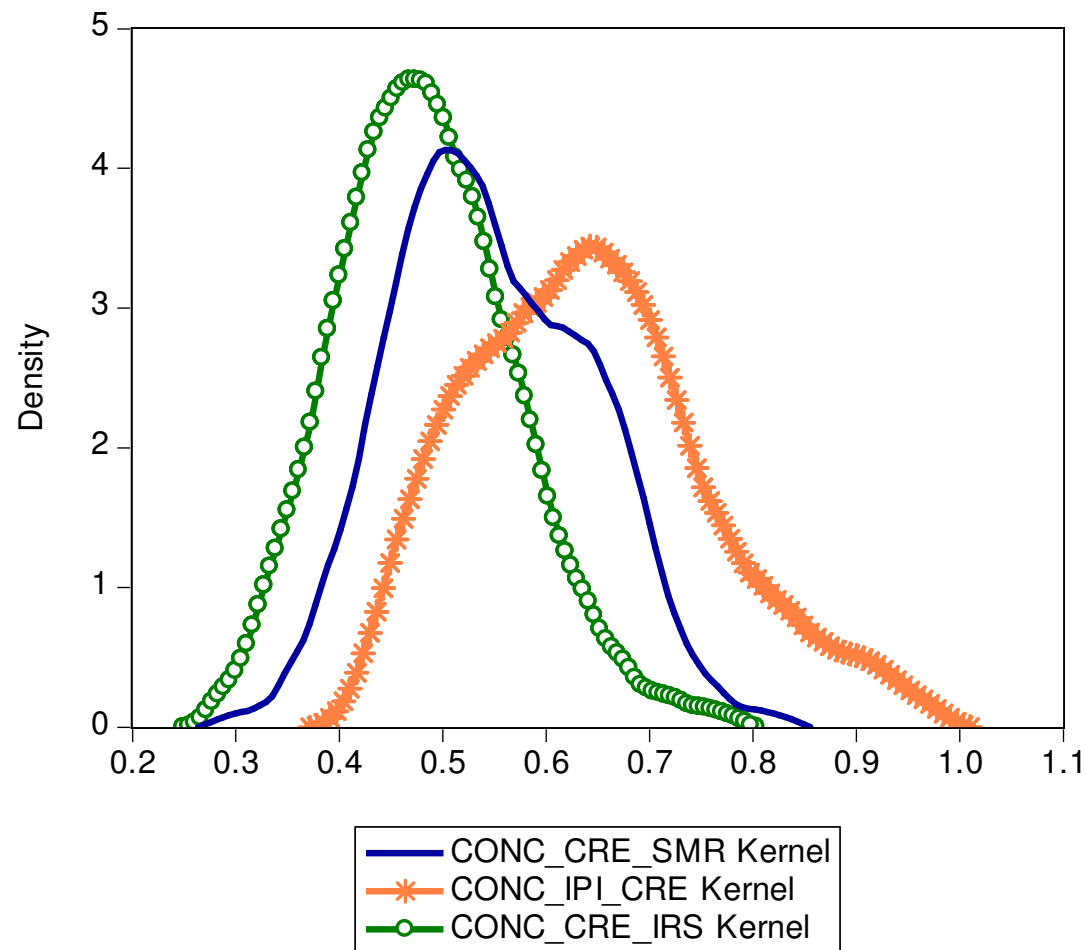
# Length of cycles



# Asymmetry of cycles



# Synchronisation of cycles: concordance index





# **Amplifying or smoothing the cycle?**

- Fiscal policy
- Monetary policy

**Table 1. Coefficients measuring the cyclical stance**

Model1:  $P_{it} = \alpha_i + \beta Y_{it} + \varepsilon_{it}$  estimated with OLS (country fixed effects)

Model2:  $P_{it} = \alpha_i + \beta Y_{it} + \beta P_{it-1} + \varepsilon_{it}$  estimated with OLS (country fixed effects)

Model3:  $P_{it} = \alpha_i + \beta Y_{it} + \beta P_{it-1} + \varepsilon_{it}$  estimated with GMM

Procyclicality (countercyclicality) if  $\beta < 0$  ( $\beta > 0$ )

		Fiscal policy reaction function						Monetary policy reaction function					
		P= primary balance / GDP						P= short-term interest rate					
		Model1		Model2		Model3		Model1		Model2		Model3	
		$\beta$		$\beta$		$\beta$		$\beta$		$\beta$		$\beta$	
1955:1-2008:4	level	0.26	***	0.054	***	0.064	***	-0.354	***	0.174	**	0.487	***
	differences	0.032	***	0.024	***	-0.157	**	-0.214	*	-0.256	**	-20.701	*
	hpc	0.099	***	0.055	***	0.09	***	-0.745	***	-0.101		0.261	
	bp1	0.142	***	0.082	***	0.099	***	-0.69	***	0.58	***	0.626	***
	bp2	0.138	***	0.08	***	0.097	***	-0.689	***	0.592	***	0.641	***
1955:1-1989:4	level	0.246	***	0.049	***	0.059	***	-0.263	**	0.073		-0.043	
	differences	0.032	***	0.029	***	-0.234	*	0.275	**	0.316	***	-1.582	
	hpc	0.085	***	0.059	***	0.084	***	0.215	**	0.28	***	0.375	***
	bp1	0.11	***	0.073	***	0.084	***	0.129		0.268	***	0.171	**
	bp2	0.111	***	0.072	***	0.085	***	0.08		0.272	***	0.161	**
1990:1-2008:4	level	0.346	***	0.092	***	0.118	***	-0.777	***	0.008		0.488	**
	differences	0.031	**	0.017		-0.069		-1.123	***	-1.131	***	79.461	*
	hpc	0.121	***	0.049	***	0.091	***	-1.584	***	-0.468	***	-0.17	
	bp1	0.198	***	0.098	***	0.123	***	-1.747	***	0.795	***	0.861	***
	bp2	0.187	***	0.095	***	0.121	***	-1.697	***	0.824	***	0.946	***



# Results – Panel data

- OECD countries, 1955-2008, quarterly data
- Monetary policy less countercyclical than fiscal policy in the 1990s



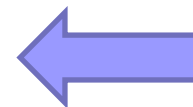
# Results – Time series 1992-2008

## ■ Fiscal policy

- Countercyclical: ESTONIA
- Slightly countercyclical: SVN, SVK
- Neutral or procyclical: CZE, HUN, POL

## ■ Monetary policy

- Countercyclical: HUN
- Slightly countercyclical: POL, SVK
- Neutral: CZE, SVN, EST

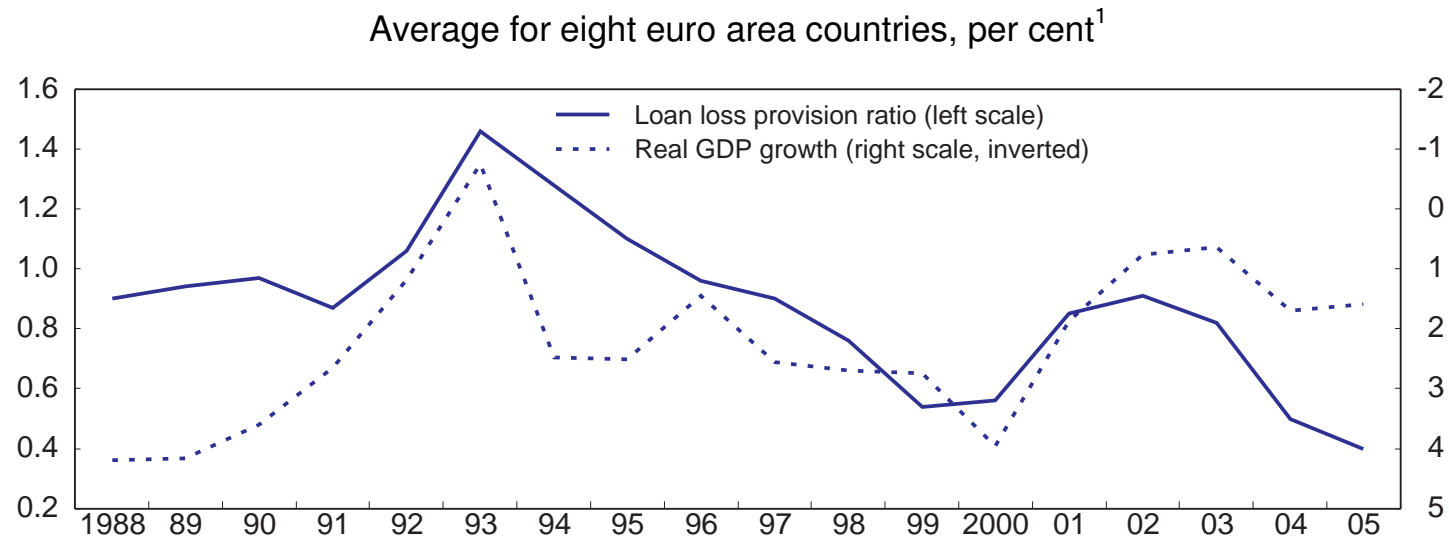




# **Procyclicality of the financial system**

- Lending standards and provisioning
- Capital ratios
- Bank deposits to loan ratio
- Short-term to long-term debt

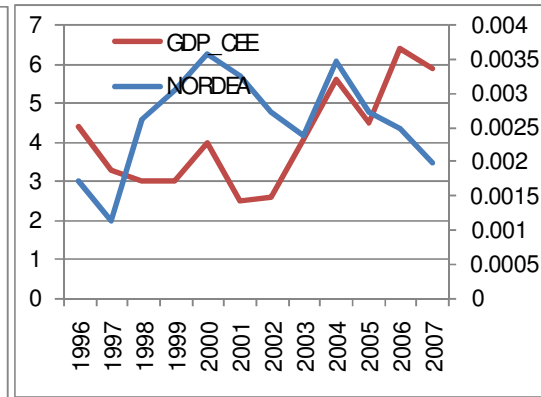
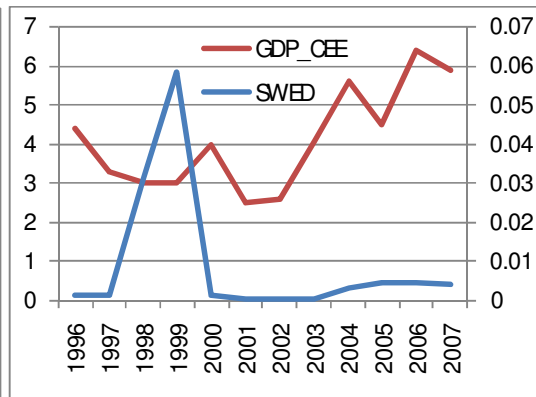
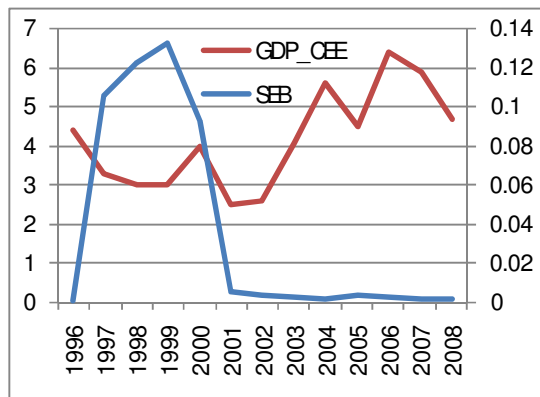
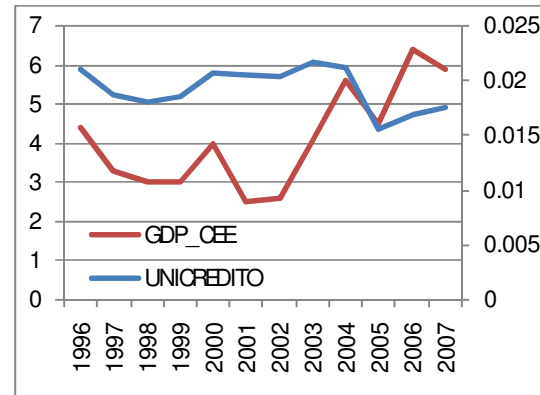
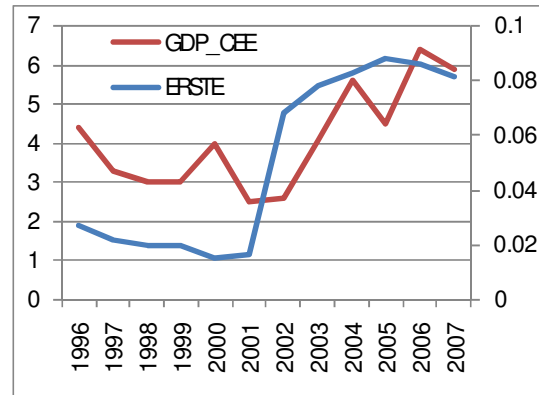
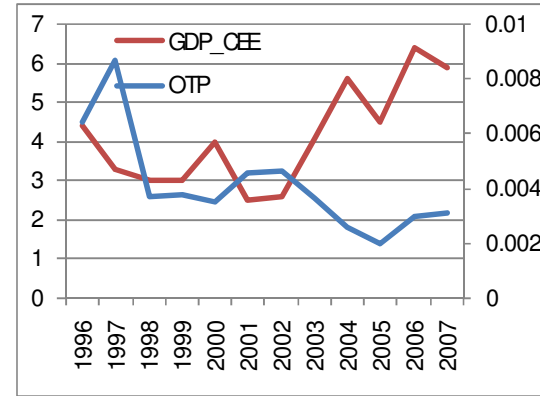
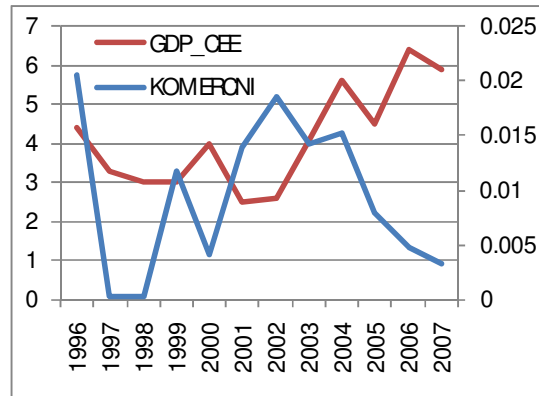
# Loan loss provisioning tends to be procyclical – euro area



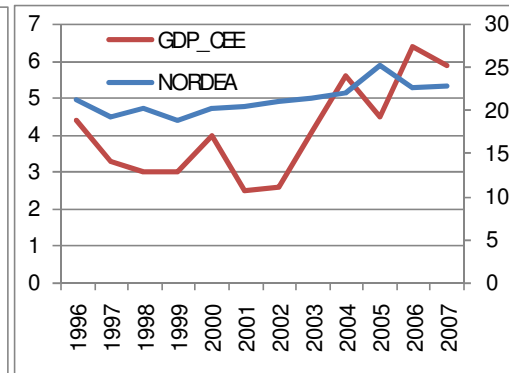
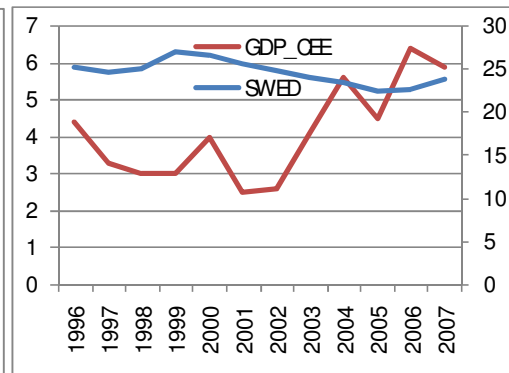
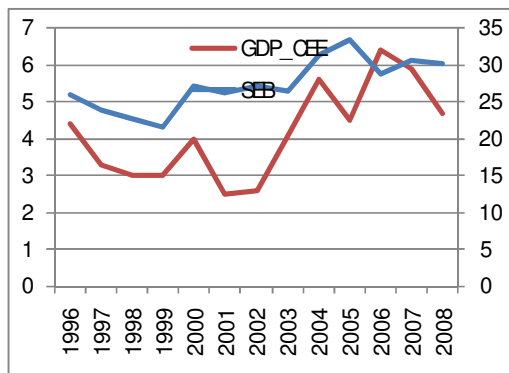
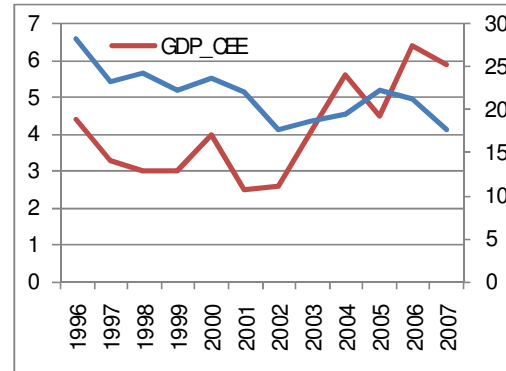
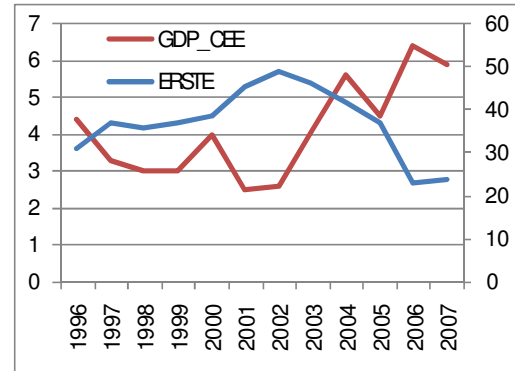
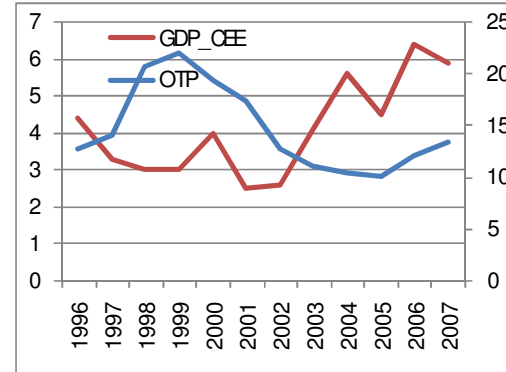
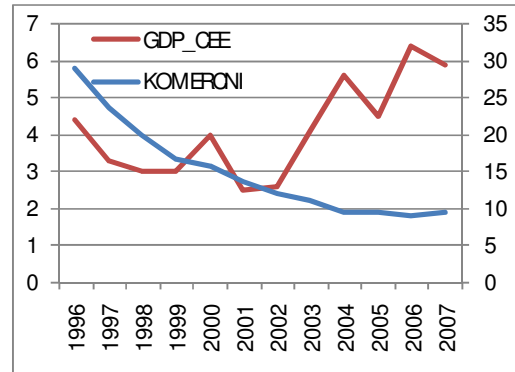
1. Weighted average based on 2000 GDP and purchasing power parities of the following countries: Belgium, Finland, France, Germany (Western Germany prior to 1993), Italy, Netherlands, Portugal (commercial banks) and Spain.

Source: OECD (2005), *Bank Profitability: Financial Statements of Banks* and OECD (2008), *OECD Economic Outlook*, No. 83.

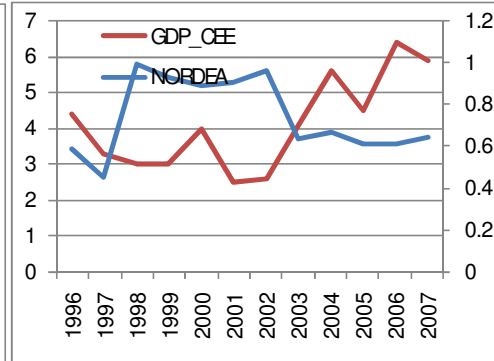
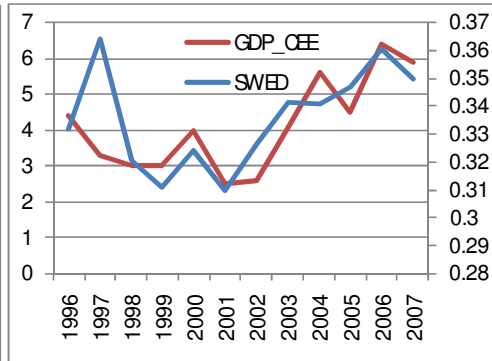
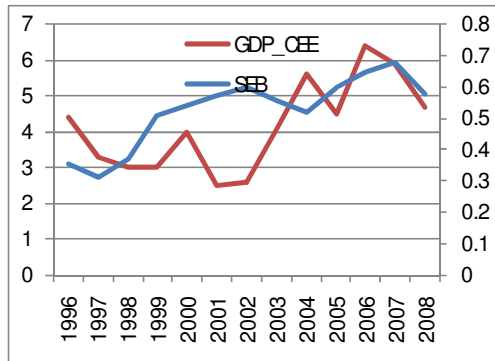
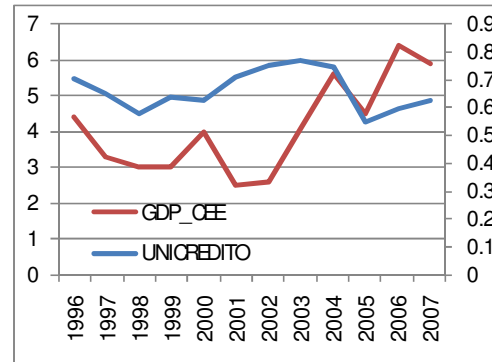
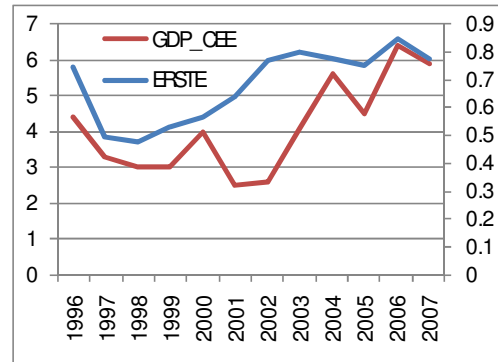
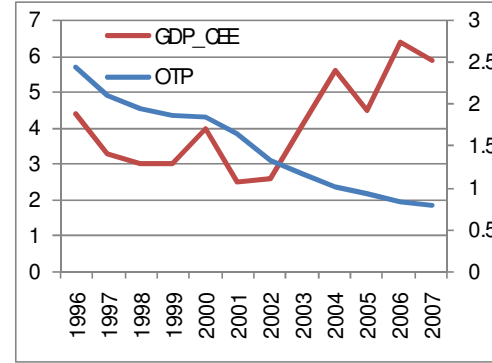
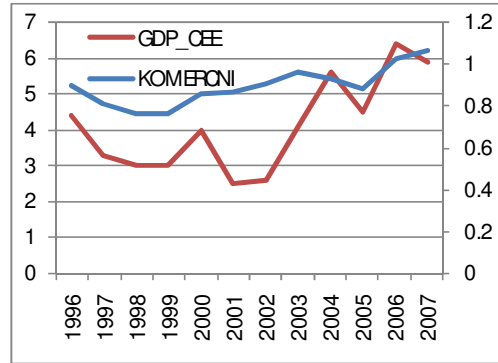
# Banks in CEE



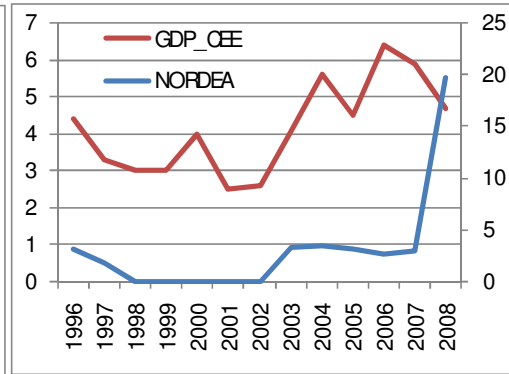
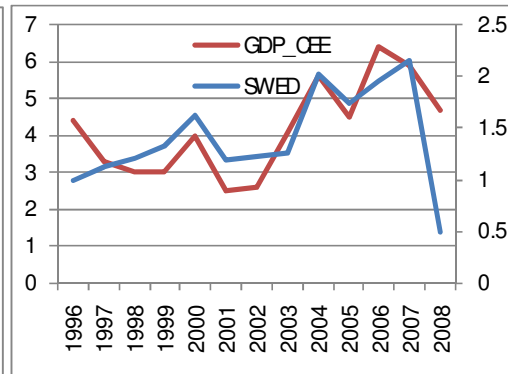
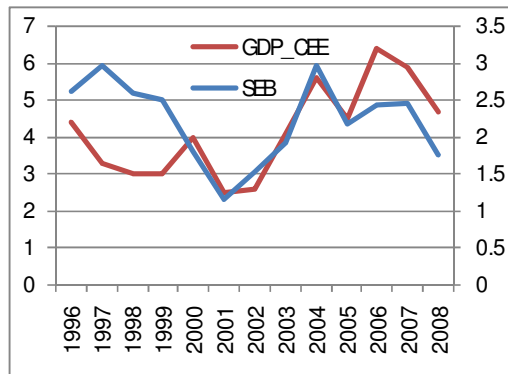
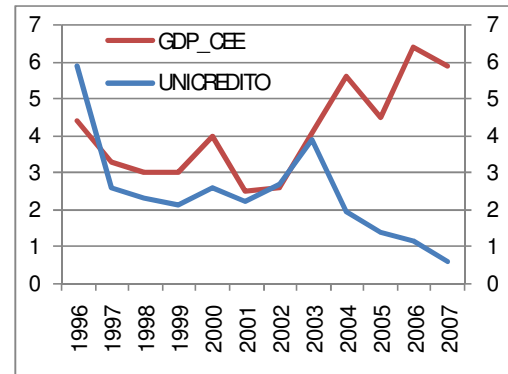
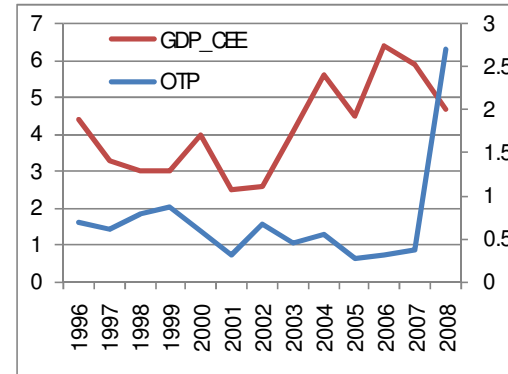
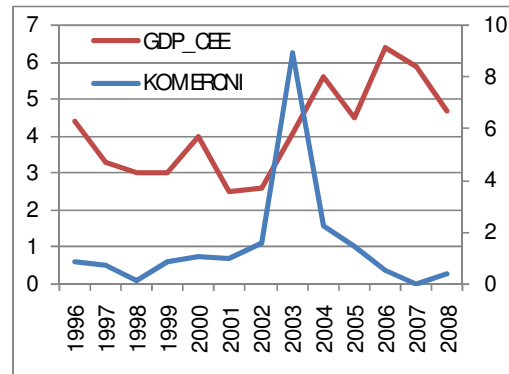
# Assets to common equity ratio



# Deposit to loan ratio



# Short-term to long-term debt ratio





# Further topics

- House price cycles
- Reaction of fiscal and monetary policies to asset price cycles
- Detection of excessive asset price cycles?
- Policies for prevention?