

Labour market institutions, fiscal policy, and the functioning of the Eurozone

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Jean Monnet Lecture

University of Pisa

Main idea of the lecture

- According to practical policy makers, using fiscal policy for stabilization is fraught with difficulty

Why, then raise the issue of fiscal *stabilization policy* in the Eurozone?

References:

- Wendy Carlin and David Soskice (2015). *Macroeconomics: Institutions, Instability and the Financial System*. 2015. Oxford University Press. Chapters 3, 9, 12
- Wendy Carlin 'Real exchange rate adjustment, wage-setting institutions, and fiscal stabilization policy: lessons of the eurozone's first decade' CESifo Economic Studies (2013) 59(3): 489-519. doi: 10.1093/cesifo/ifs025

Main idea of the lecture

- According to practical policy makers, using fiscal policy for stabilization is fraught with difficulty

Why, then raise the issue of fiscal *stabilization policy* in the Eurozone?

- It may be necessary in a common currency area in which there are Greeks and Italians ... and Germans
- If it is necessary, it will be more difficult than is the use of monetary policy to stabilize the economy under *flexible* exchange rates – not only because of implementation problems but because it must achieve a **price level target** rather than an **inflation** target
- If it is necessary but ignored, CCA central bank can still achieve its inflation target alongside divergence of fortunes of members – this is what happened before the financial crisis

Main idea of the lecture

Why do labour market institutions matter in a monetary union?

- No monetary policy
- Contested fiscal policy
- The burden of adjustment to shocks or structural weakness is therefore on the real exchange rate (RER)

- What is the RER? $Q \equiv \frac{P^* e}{P}$

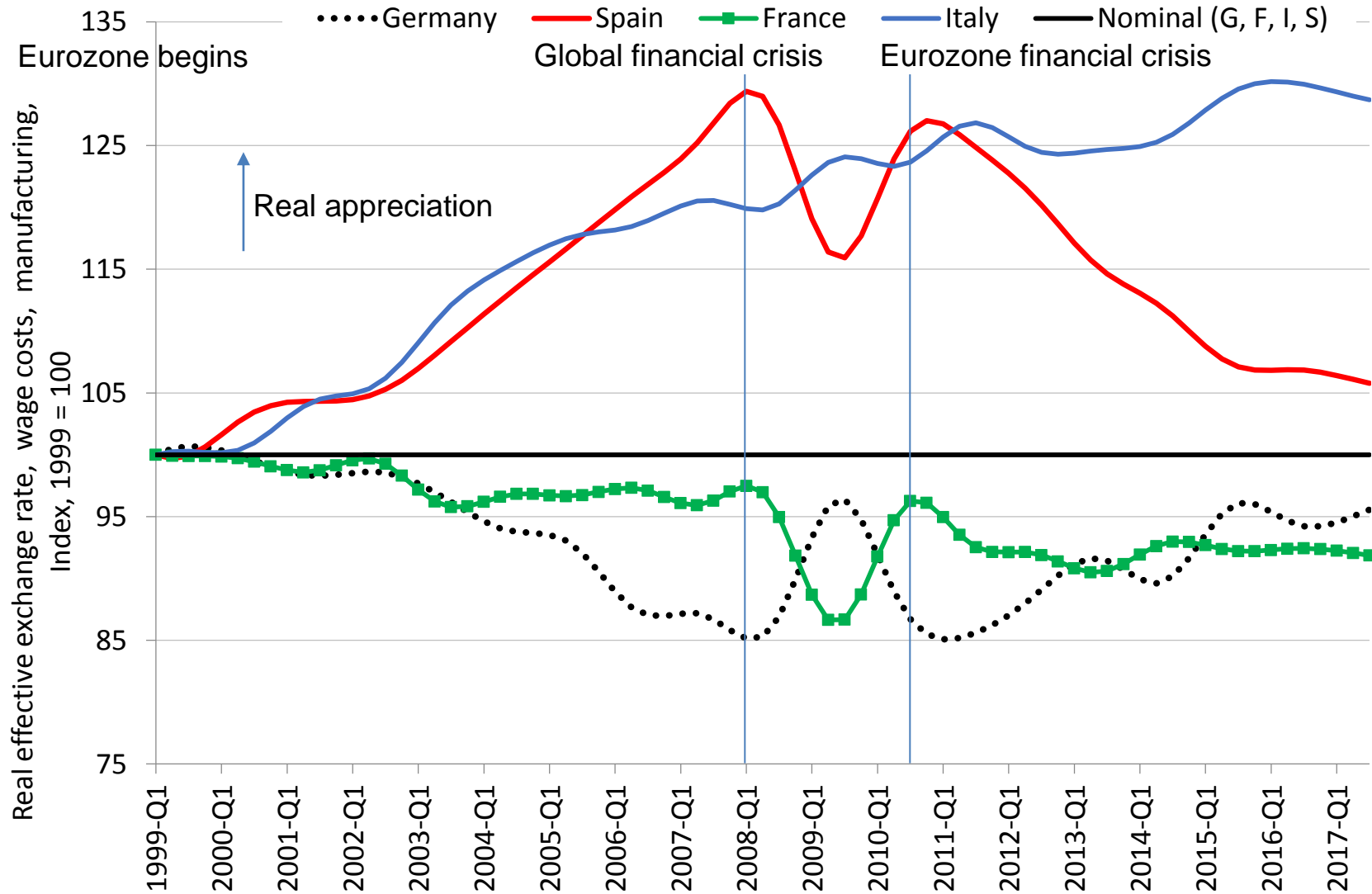
$$e \equiv \frac{\text{units of home currency}}{\text{one unit of foreign}}$$

↑ e is nominal depreciation

↑ Q is real depreciation \equiv ↑ competitiveness

Eurozone: intra-eurozone real exchange rate indices

1999=100, 1999-2017



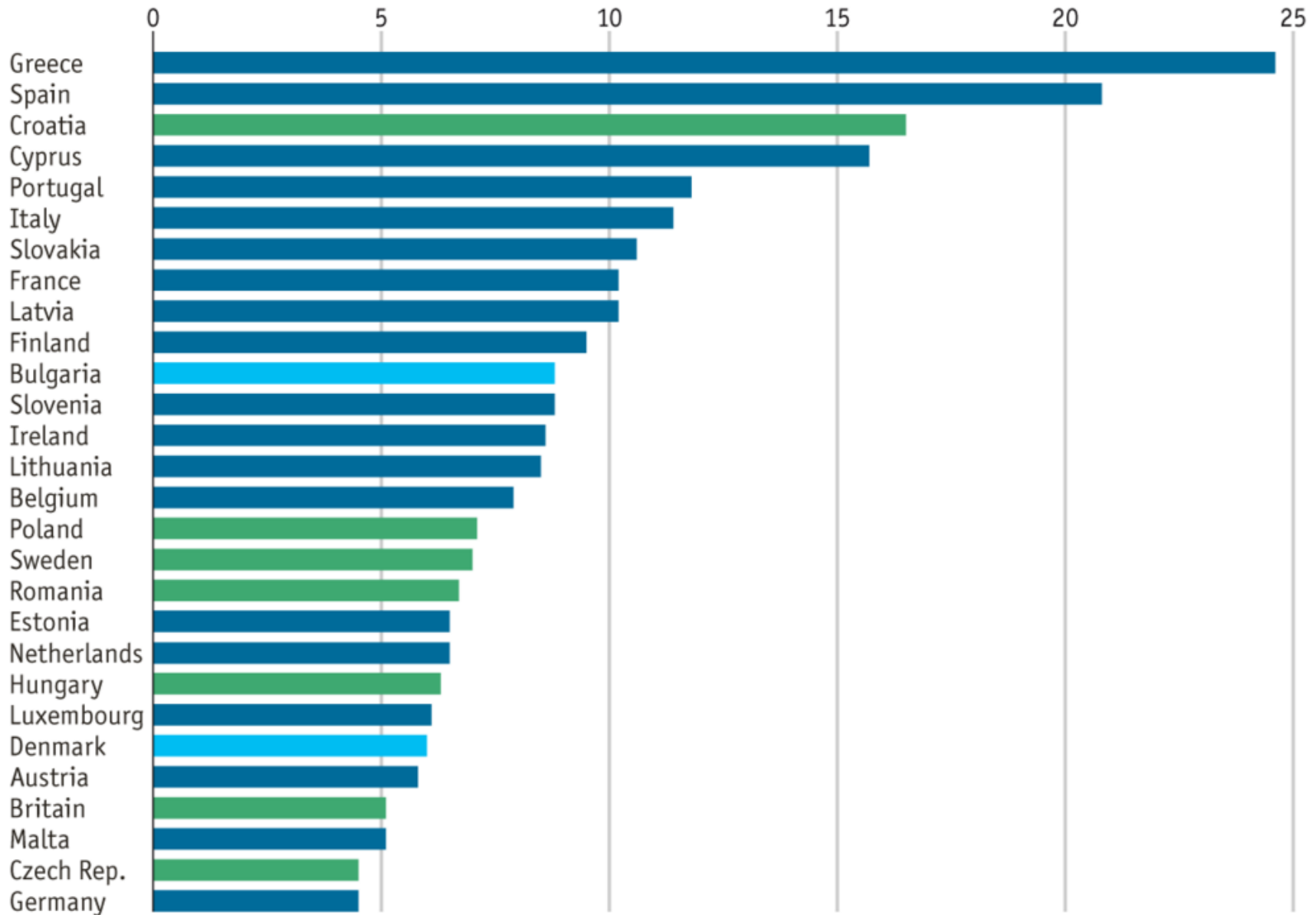
Unemployment rate

January 2016 or latest, %

■ Euro area

■ Currency pegged to euro

■ Floating currency



What determines the medium run inflation rate?

What is the medium-run inflation rate?

In a closed economy, inflation is constant when WS curve intersects PS curve so that

$$\pi^{MRE} = \pi^E = \pi^T = \text{central bank's target}$$

In an open economy, two cases:

In a flexible exchange rate economy

$$\pi^{MRE} = \pi^T = \text{central bank's target}$$

In a fixed exchange rate economy

$$\pi^{MRE} = \pi^* = \text{common currency area central bank's target}$$

Different choices made by Italy and the UK after high inflation & very costly disinflation of 1970s and 1980s ...

What determines the medium run inflation rate?

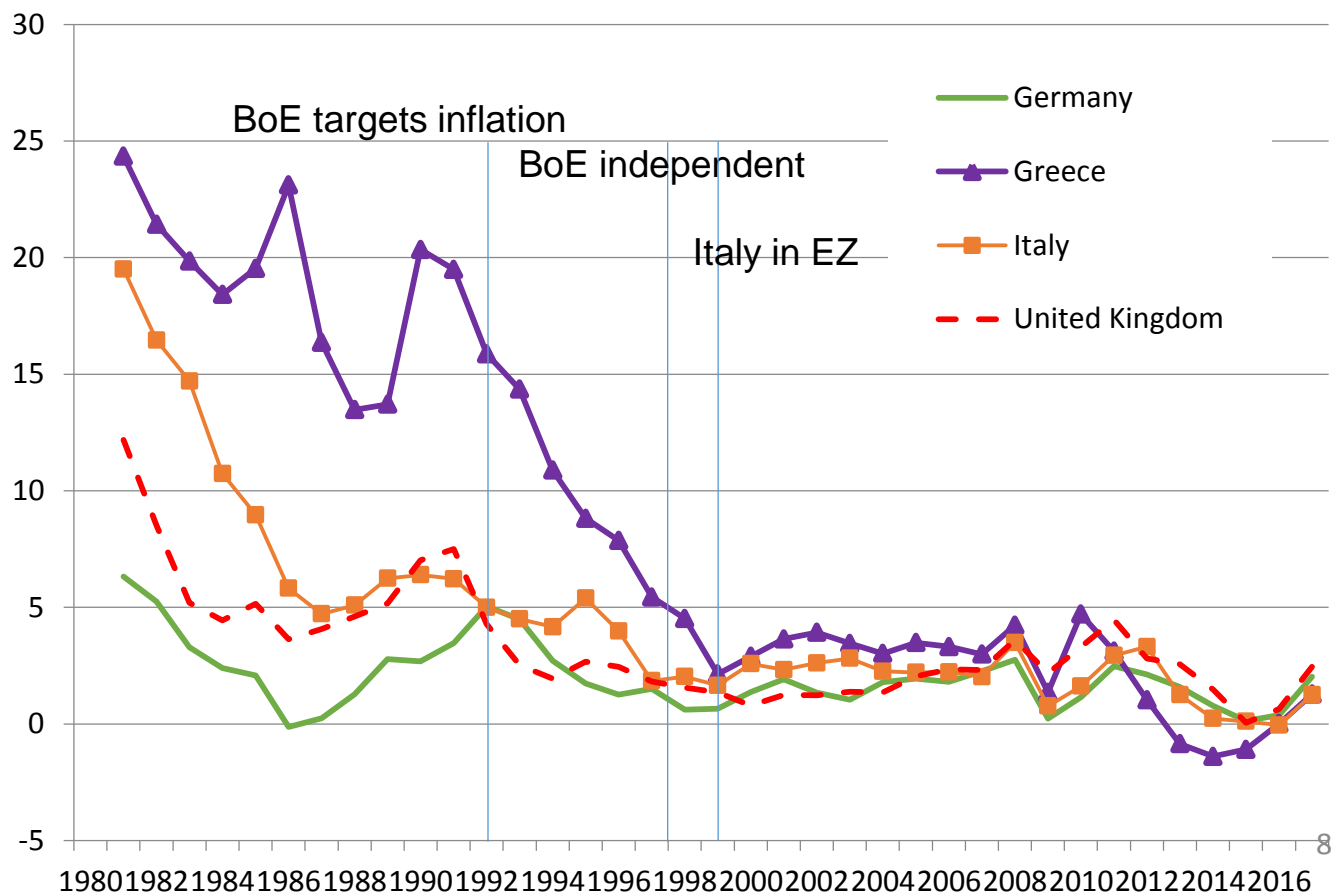
In a flexible exchange rate economy (just like a closed economy)

$$\pi^{MRE} = \pi^T = \text{central bank's target}$$

In a fixed exchange rate economy

$$\pi^{MRE} = \pi^* = \text{common currency area central bank's target}$$

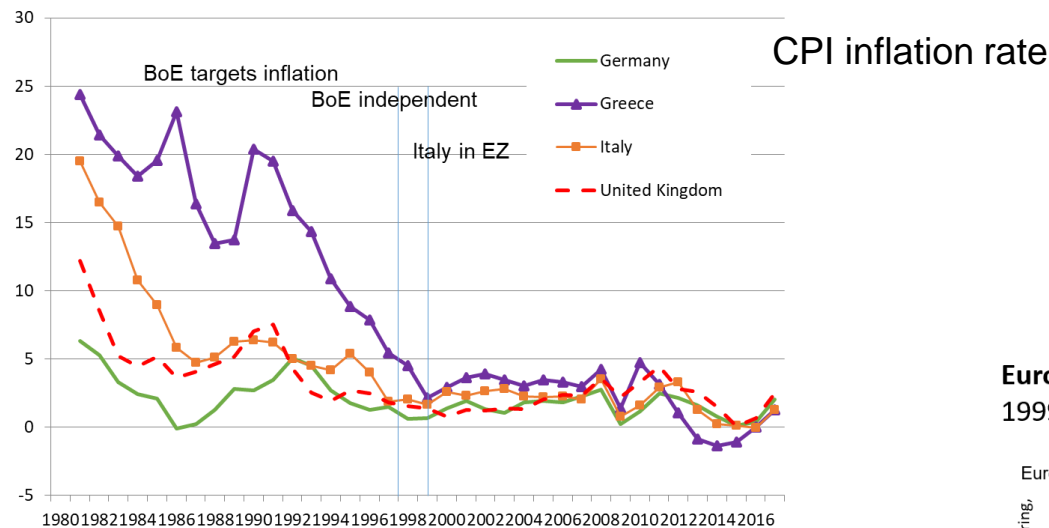
Different choices made by Italy and the UK



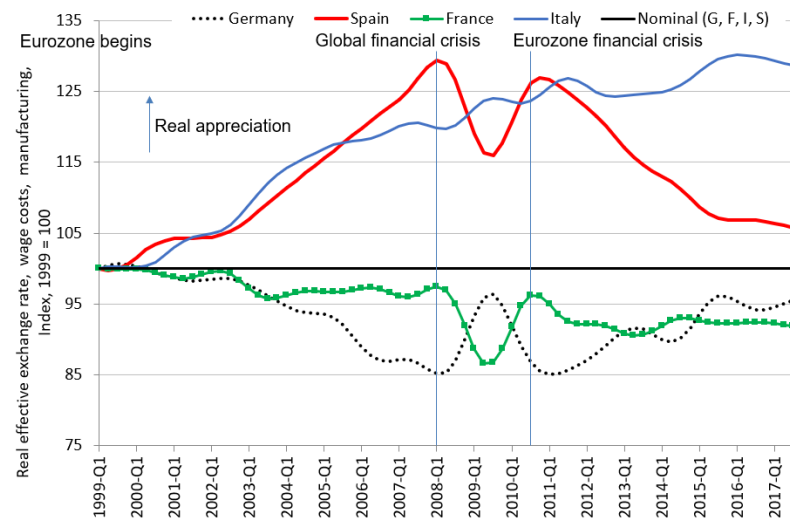
CPI inflation rate

Why did Italy (and France, Spain, Greece, etc.) join the Eurozone?

$$\pi^{MRE} = \pi^* = \text{common currency area central bank's target}$$



Eurozone: intra-eurozone real exchange rate indices
1999=100, 1999-2017



Why did Germany join the Eurozone?

Other members cannot use nominal depreciation to gain competitiveness

Germany can use labour market institutions to gain competitiveness

Outline

1. Empirical motivation – the Eurozone's first decade
 - Heterogeneous performance
 - Evidence of real exchange rate & real interest rate channels
 - Absence of fiscal stabilization as a concern of policy-makers
2. Modelling the stabilization problem for member of a CCA
 - A model with realistic labour market institutions
 - 2 key mechanisms in the model
 - Real exchange rate channel of adjustment
 - Real interest rate channel of adjustment
3. Implications for the Eurozone

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Real exchange rate & real interest rate channels for stabilization

- Remember there is no monetary policy at the country level
- 2 key mechanisms in a model with realistic labour market institutions
 - Real exchange rate channel of adjustment = how wage-setting behaviour responds to unemployment; is stabilizing but can be very weak
 - Real interest rate channel of adjustment = how inflation expectations in wage setting behaviour can be destabilizing

3. Implications for Eurozone

- when countries vary in these 2 key mechanisms
- this is a reflection of differences in labour market institutions

1. Empirical motivation – the Eurozone's first decade
 - Heterogeneous performance
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Did Eurozone economies achieve stabilization?

Compare performance 1999-2007 of Eurozone and members against the welfare function of policy maker under *flexible* exchange rates

$$\text{Min } L_t = (y_t - y_e)^2 + \beta(\pi_t - \pi^*)^2$$

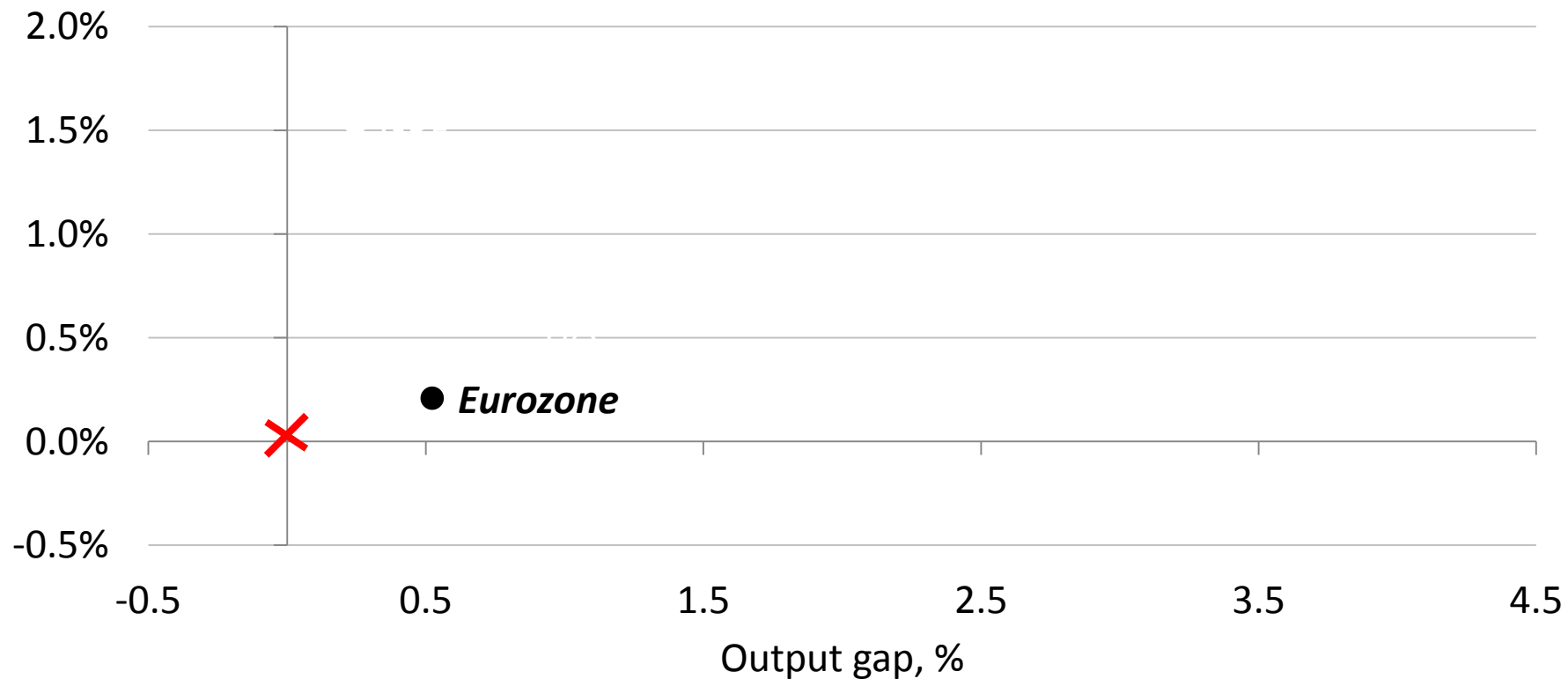
National policy-maker's loss function

Looks successful but masks divergent performance 1999-2007

$$\text{Min } L_t = (y_t - y_e)^2 + \beta(\pi_t - \pi^*)^2$$

National policy-maker's loss function

Inflation deviation from
ECB target of 2%

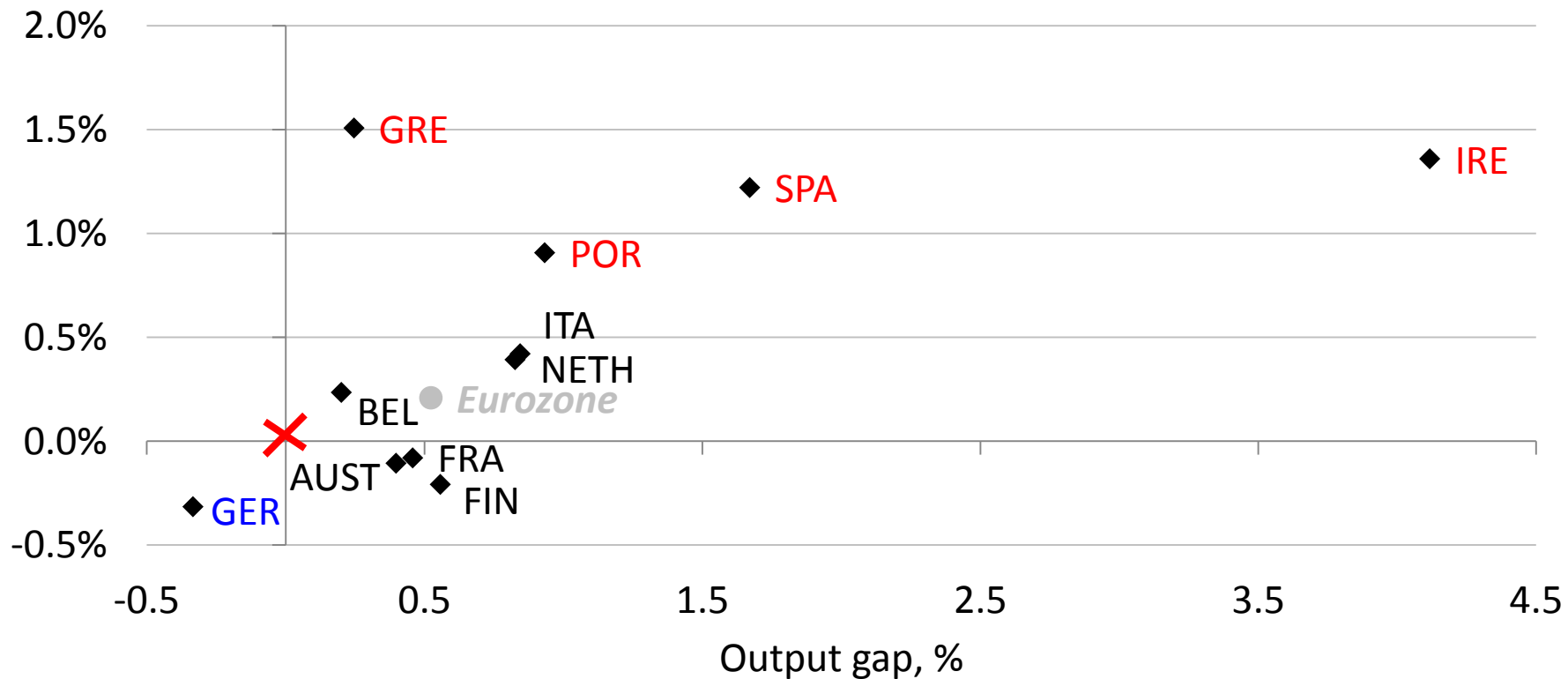


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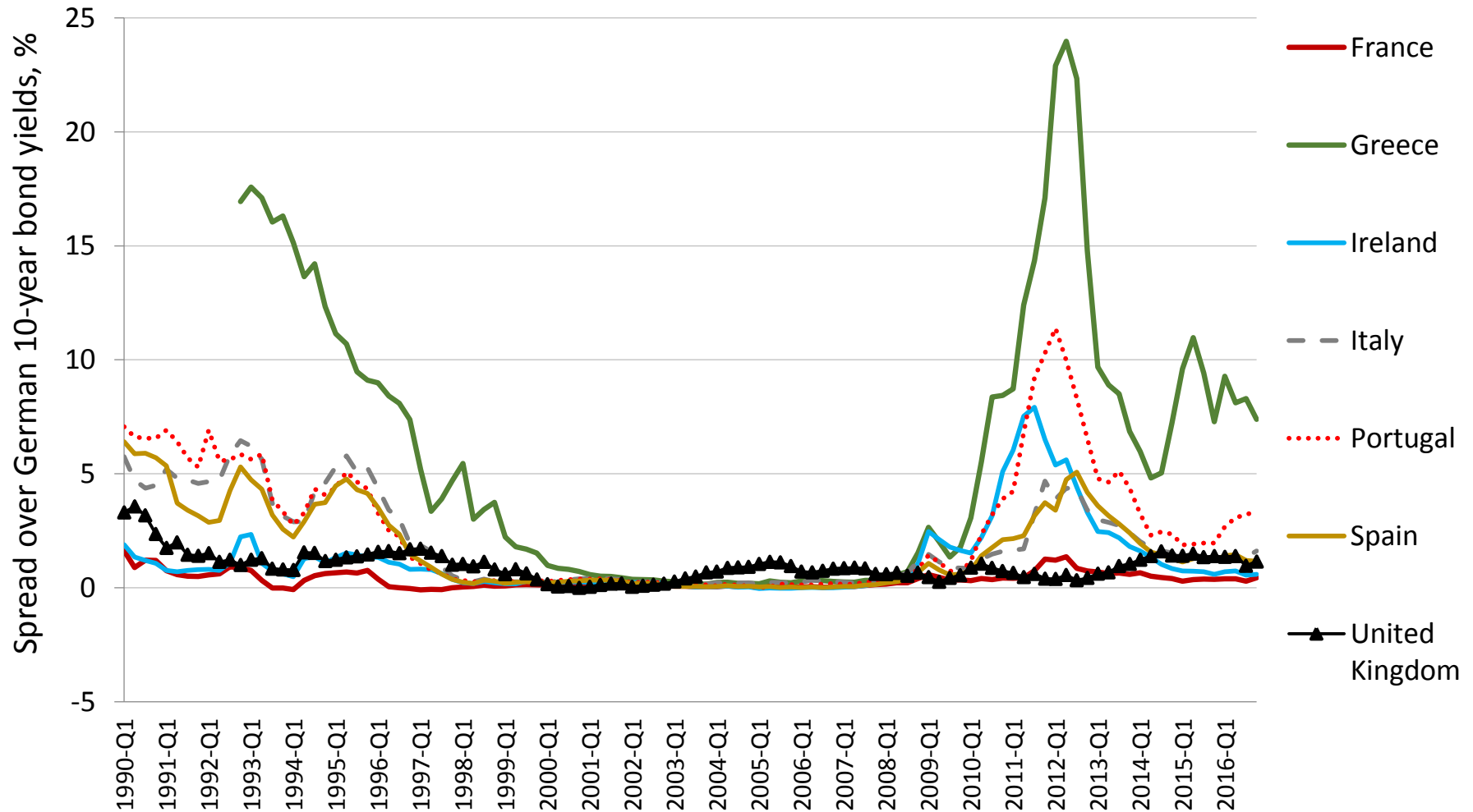
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National policy-maker's loss function

Inflation deviation from
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Symptoms of the Eurozone sovereign debt crisis: yields on government bonds



Stylized facts

	Spread over German 10-year bond yields	Current account balance, % GDP	General government balance, % GDP	Private sector financial balance, % GDP
	Average 2010Q1-2011Q2	Average 1999-2007	Average 1999-2007	Average 1999-2007
	(1)	(2)	(3)	(4)
Greece	7.8	-8.1	-5.8	-2.3
Ireland	4.6	-1.6	1.6	-3.2
Portugal	3.6	-9.2	-3.6	-5.6
Spain	1.7	-5.5	0.1	-5.5
Italy	1.4	-1.1	-2.8	1.7
Belgium	0.7	3.6	-0.5	4.1
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More stylized facts

	Real exchange rate, Total economy, 2008Q2 1999=100	Real exchange rate, Manufacturing, 2008Q2 1999=100	Export market performance, % per annum change Average 1999-2007	Real long term interest rate Average 1999-2007	House prices, real, % per annum change Average 1999-2007
	(5)	(6)	(7)	(8)	(9)
Greece	107.6	129.9	-0.4	0.92**	6.7
Ireland	117.1	97.0	2.2	0.29	9.7
Portugal	108.8	107.6	-1.7	1.23	..
Spain	112.3	123.0	-0.7	0.23	9.4
Italy	109.9	123.6	-3.8	1.96	5.5
Belgium*	101.1	104.0	-1.6	2.39	5.8
Austria	95.1	92.6	0.5	2.87	..
France	102.3	98.7	-2.6	2.48	9.1
Finland	98.2	79.1	-0.3	3.09	3.8
Netherlands	107.5	101.1	-0.4	1.63	5.8
Germany	84.7	85.1	1.1	3.54	-1.6

* For the RER measures, data is for BLEU; ** Data available only from 2001Q1; .. Not available

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Summary of stylized facts

Prior to the crisis, the ECB was close to its target

Among crisis countries, common were

- Current account deficit
- Inflation above target
- Positive output gap
- Trend appreciation of real exchange rates
- Low real interest rates

Different combinations of private & public deficits – no pattern

Fiscal policy in the crisis countries was not oriented toward stabilization as defined by an (output gap, inflation target) loss function

Germany: current account surplus, inflation below target, negative output gap, real depreciation, high real interest rate

Outline

2. Modelling the stabilization problem for member of a CCA
 - A model with realistic labour market institutions
 - 2 key mechanisms in the model
 - Real exchange rate channel of adjustment
 - Real interest rate channel of adjustment

A model with realistic labour market institutions

Big cross-country differences in wage-setting in the Eurozone, where

- In some, there is wage-setting based on 'rational' expectations consistent with the fixed exchange rate constraint (Germany and other northern) – consistent with the new rules of the game in the Eurozone
- In others, wage-setting is backward-looking (Spain, Italy, and other southern) – not consistent with the new rules of the game

Very simple model to illustrate – compare adjustment

- 'rational' wage-setters = anchored inflation expectations and
- 'non-rational' ones = backward-looking inflation expectations

What is the implication for intra-EZ performance?

Simple graphical model – benchmark of the **flexible** exchange rate case

- think of the UK and the Bank of England or the ECB with non-rational wage setters

$$\text{Min } L_t = (y_t - y_e)^2 + \beta(\pi_t - \pi^T)^2 \quad \text{s.t. } \pi_t = \pi_{t-1} + \alpha(y_t - y_e)$$

Phillips Curve

$$\rightarrow (y_t - y_e) = -\alpha\beta(\pi_t - \pi^T),$$

Monetary Policy Rule, MR

where y_e is equilibrium output, π^T is inflation target.

From PC and MR, we have

$$(\pi_t - \pi^T) = (\pi_{t-1} - \pi^T) - \alpha^2\beta(\pi_t - \pi^T)$$

$$\rightarrow \frac{(\pi_t - \pi^T)}{(\pi_{t-1} - \pi^T)} = \frac{1}{1 + \alpha^2\beta} \equiv \lambda = \frac{y_t - y_e}{y_{t-1} - y_e}$$

Inflation & the output gap decline linearly

on adjustment path; so does $(r_t - r^*)$ set by CB

Benchmark of the flexible exchange rate case

Hence, the cumulative interest rate gain from holding home bonds during the adjustment period is:

$$\sum_{t=0}^{\infty} (r_t - r^*) = (r_0 - r^*) [1 + \lambda + \lambda^2 + \dots] = (r_0 - r^*) / (1 - \lambda)$$

and by the real UIP condition,

$$\frac{r_0 - r^*}{1 - \lambda} = \bar{q} - q_0.$$

We substitute in the IS equation:

$$y_{t+1} = A - ar_t + bq_t$$

$$y_1 - y_e = -a(r_0 - r^*) + b(q_0 - \bar{q})$$

$$= -\left(a + \frac{b}{1 - \lambda}\right)(r_0 - r^*) \text{ and in general,}$$

$$y_t - y_e = -\left(a + \frac{b}{1 - \lambda}\right)(r_{t-1} - r^*).$$

This is the flexible exchange rate policy rule

Inflation shock under flexible exchange rates

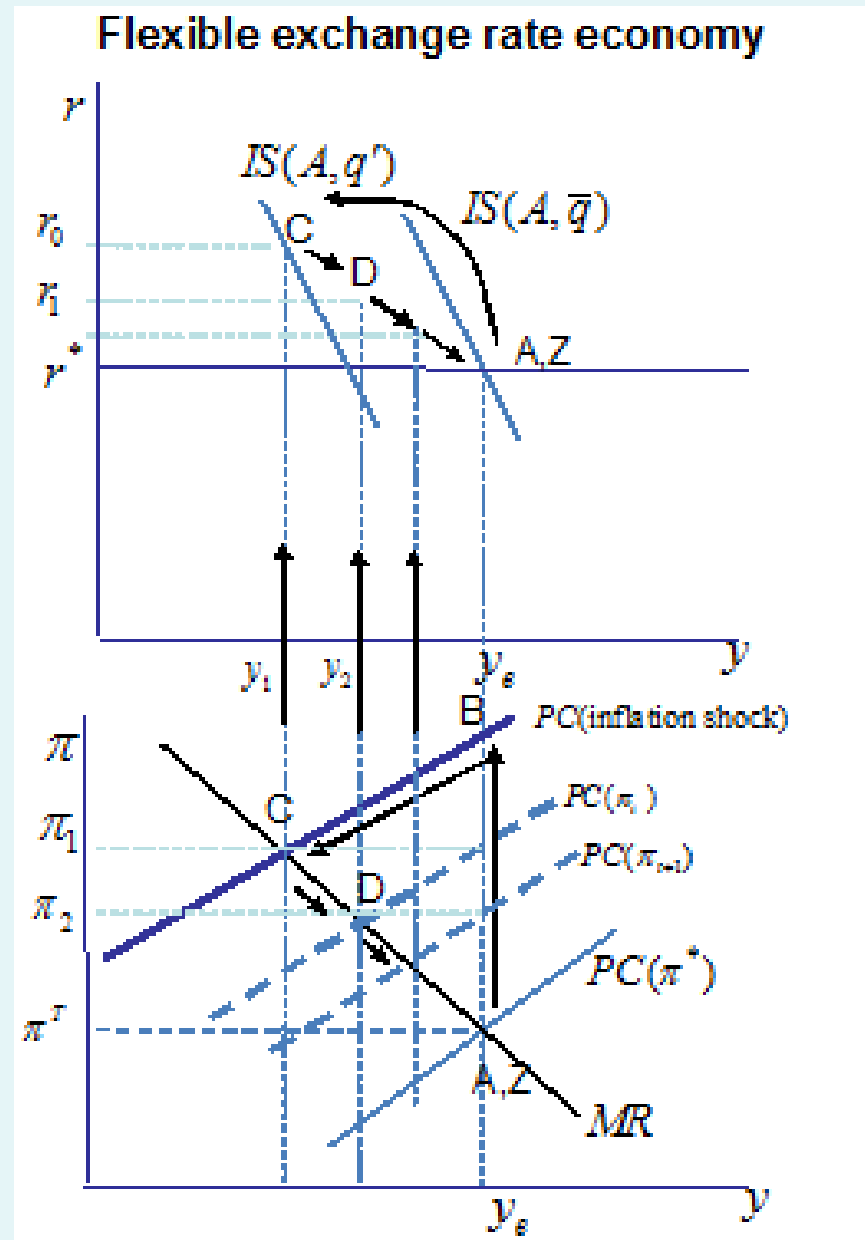
- think of the UK and the Bank of England or the ECB

Non-rational wage-setters

Requires active monetary policy response

RER returns to initial value (higher P level + **depreciated nominal e**)

RIR above equilibrium during adjustment (Taylor principle)

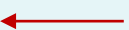


Simple graphical model – CCA case

Phillips curve:

$\pi_t = \pi_t^E + \alpha(y_t - y_e)$, where π_t^E is expected inflation and $(y_t - y_e)$ is the output gap.

$\pi_t^E = \pi_{t-1}^E$, where wage-setters are non-rational and  Think of Spain, Italy

$\pi_t^E = \pi^*$, where wage-setters are rational.  Think of Germany

Aggregate demand (reduced form IS curve):

$y_{t+1} = A - ar_t + bq_t$, where y is output, A is autonomous demand, and a and b are positive constants. q is log of real exchange rate

Fisher equation:

$$r_t = i_t - \pi_t^E$$

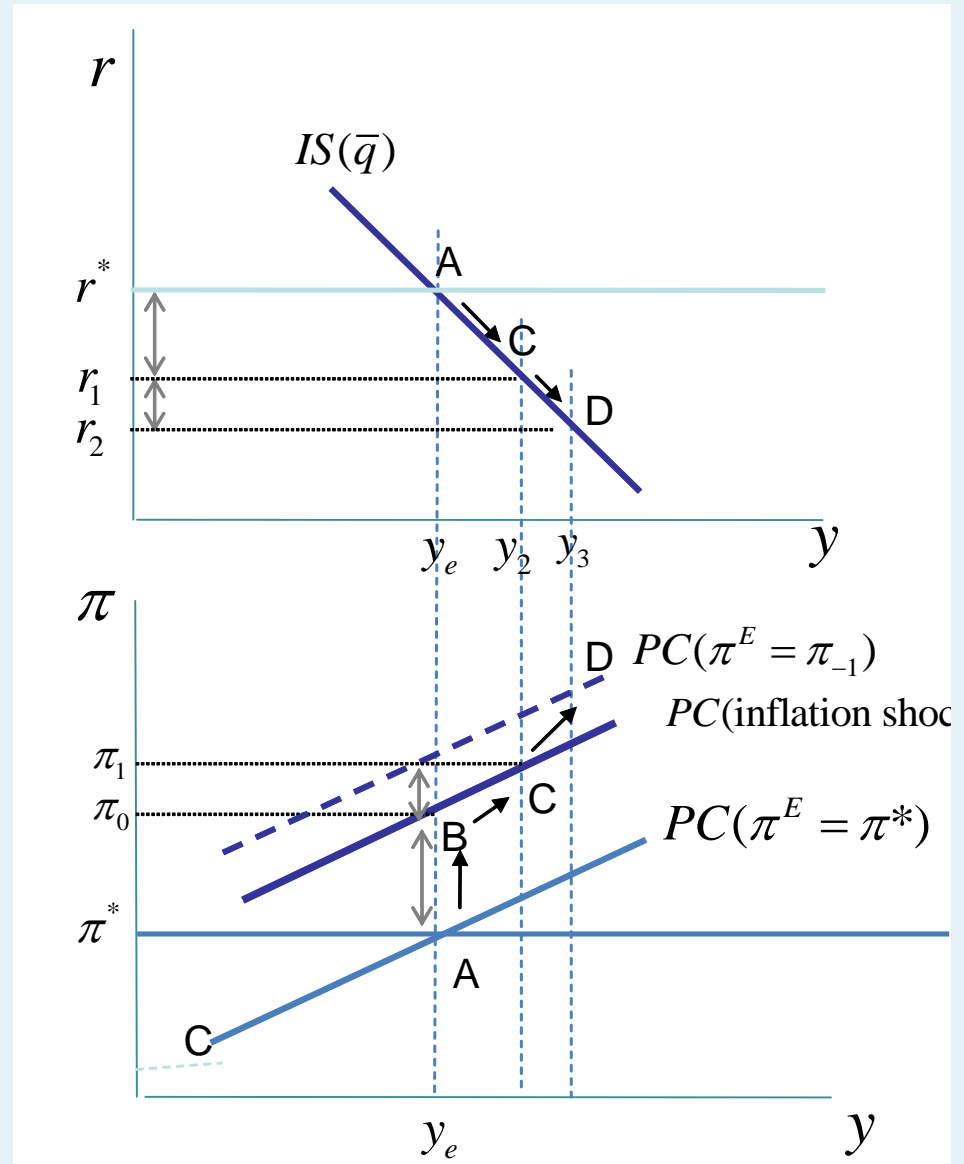
Inflation shock for a CCA member

1st case: Non-rational wage-setters (Spain):

No active policy response
Real interest rate channel
can be **de-stabilizing**

Inflation goes UP!

Nothing ensures RER
channel (via IS shift) is
strong enough to offset this
→ **need fiscal policy rule
to ensure stability**



Stabilizing fiscal policy rule in CCA: *non-rational wage-setters*

Thought experiment – use same active policy rule via fiscal policy as central bank uses under flexible exchange rates:

$$\text{Min } L_t = (y_t - y_e)^2 + \beta(\pi_t - \pi^*)^2 \quad \text{s.t.} \quad \pi_t = \pi_{t-1} + \alpha(y_t - y_e)$$

National policy-maker's loss function Phillips Curve

$$\rightarrow (y_t - y_e) = -\alpha\beta(\pi_t - \pi^*)$$

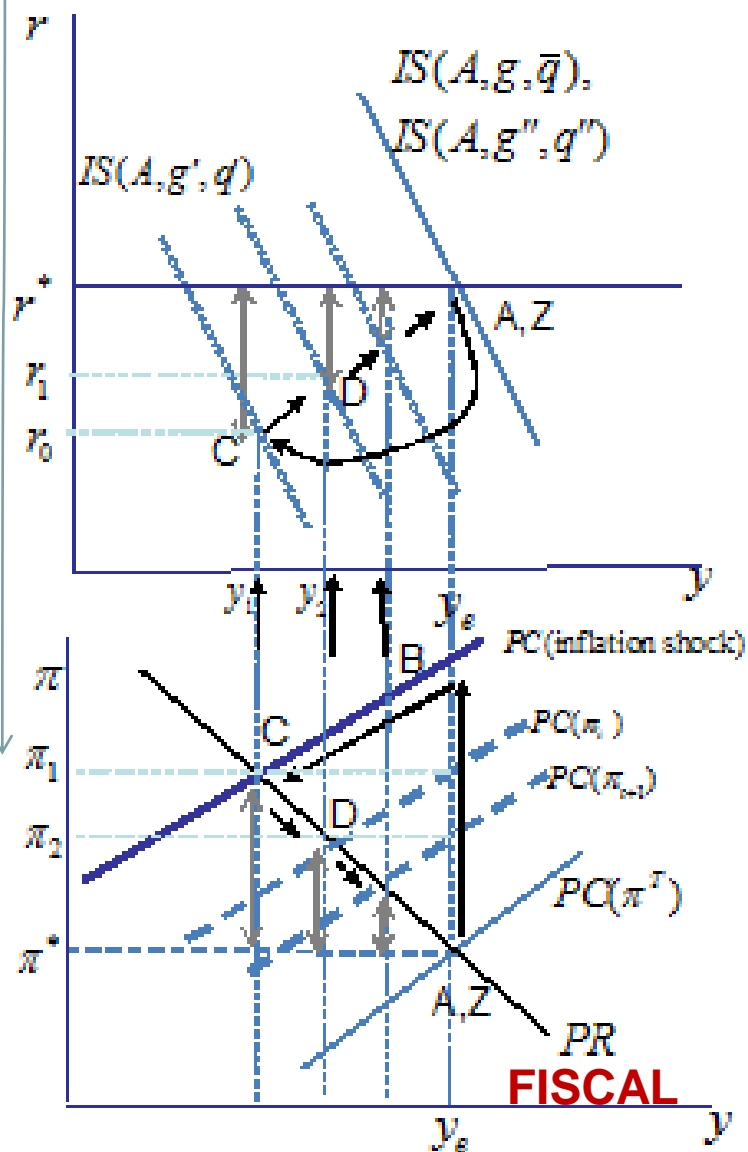
Optimal output gap; Policy Rule

In CCA, implement the optimal output gap using *fiscal* rather than monetary policy

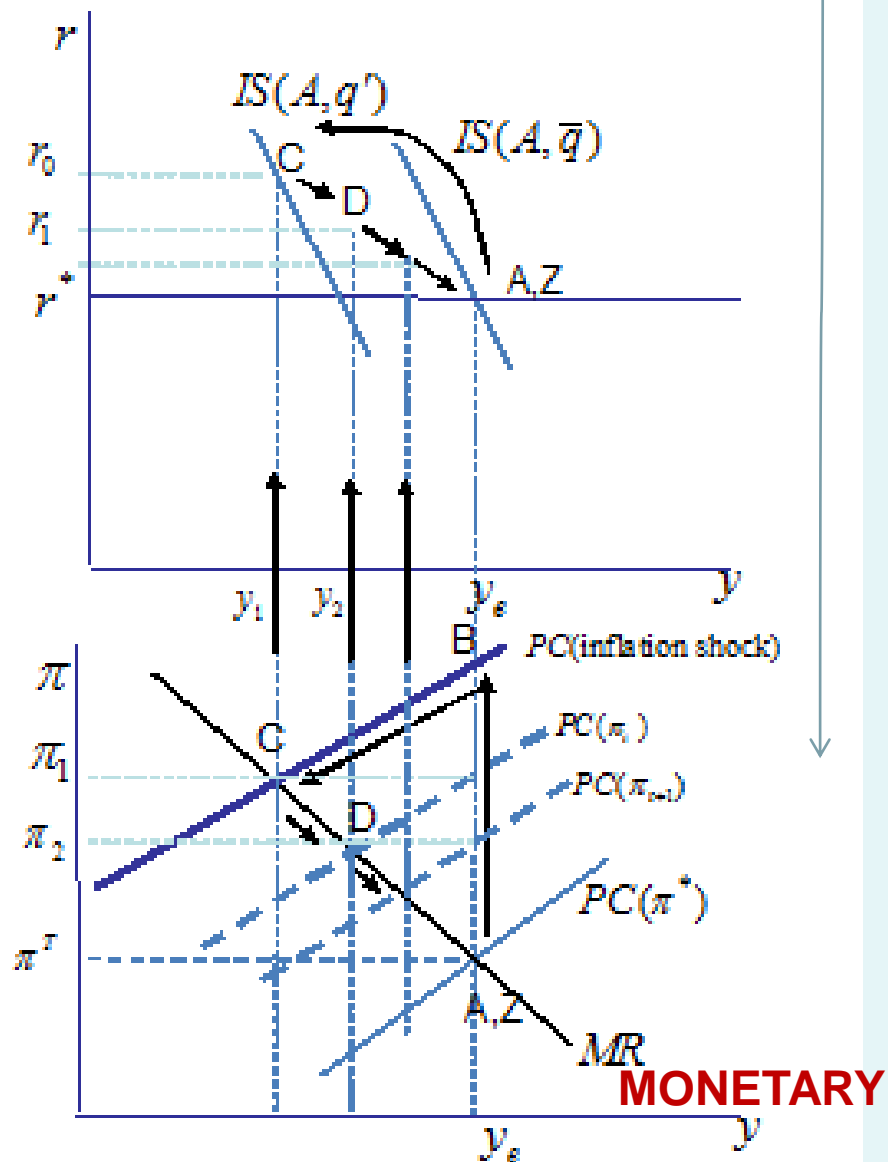
Why does this lead to fiscal imbalance?

Note that optimal output gaps are identical

Member of a CCA

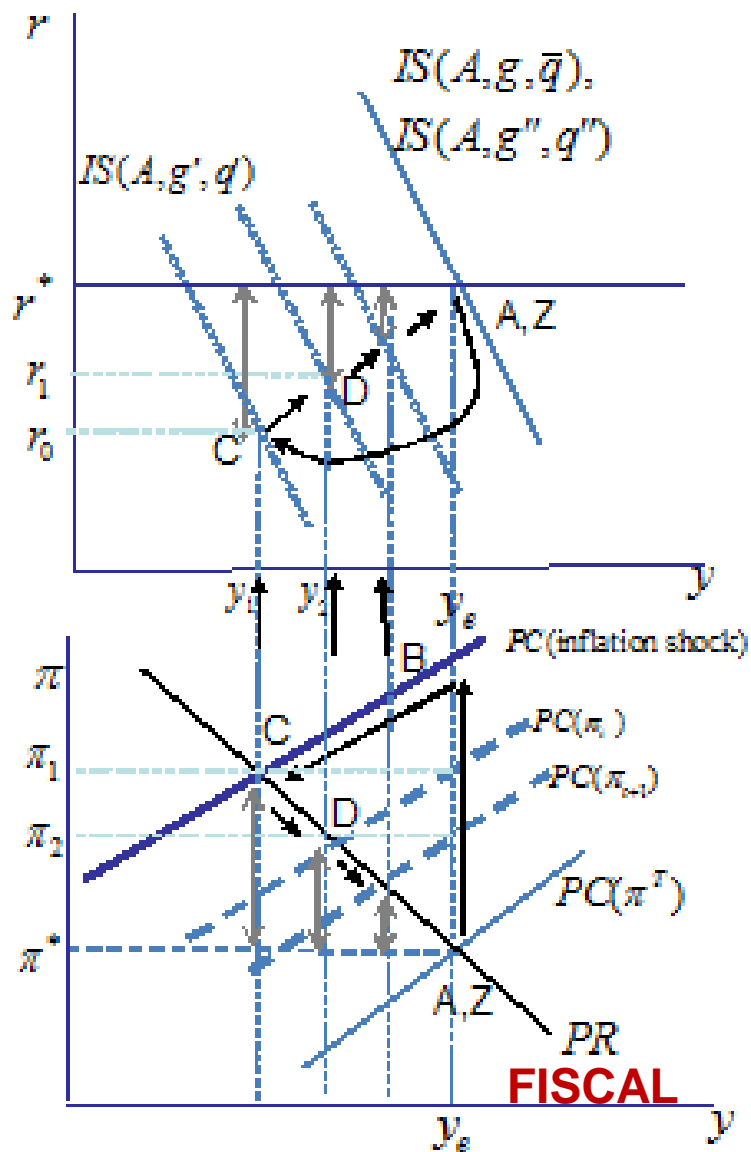


Flexible exchange rate economy



Monetary vs. *fiscal* stabilization

Member of a CCA



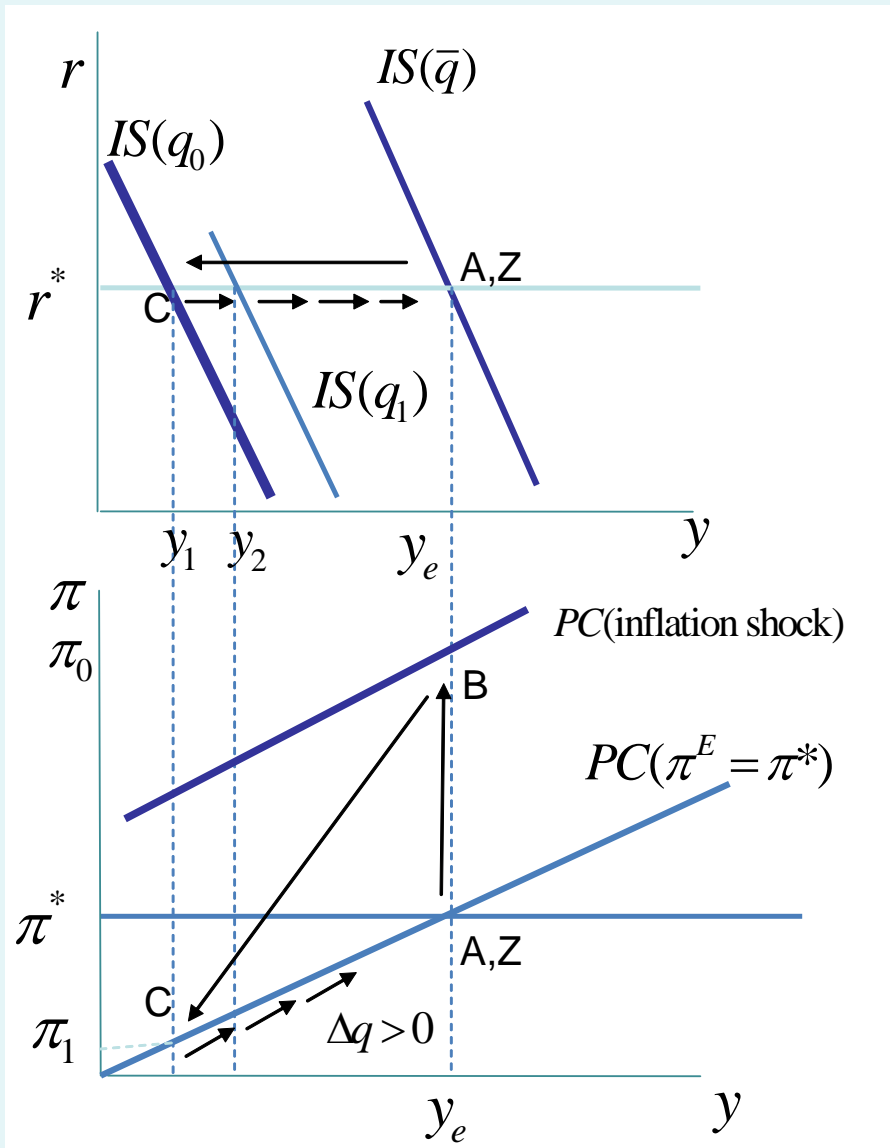
Non-rational wage-setters *Active fiscal policy in a CCA*

In new equilibrium,
RER is appreciated; RIR is *below* equilibrium during adjustment
Fiscal deficit results

Summary: temporary country-specific inflation shock

- With *non-rational* wage-setters, stabilizing fiscal policy is needed because of destabilizing real interest rate effect
- But if same *inflation* targeting rule is used as under *flexible* exchange rates, there is **primary fiscal deficit** at new equilibrium
- Why? RER is appreciated (net exports are lower); $r=r^*$ (consumption & investment unchanged); hence $(G-T)$ must be higher for $y=y_e$
- Optimal stabilization policy therefore requires active fiscal policy and *price-level* targeting (to restore RER). Inflation targeting is not enough.
- Unless, wage-setters deliver real exchange rate targeting ...

Inflation shock for a CCA member



2nd case: Rational wage-setters (e.g. Germany): Real exchange rate channel is stabilizing so don't need fiscal policy to stabilize – inflation falls below target of ECB

Anchored inflation expectations
No destabilizing RIR channel

Outline

3. Implications for the Eurozone

Implications for the Eurozone: can Germany & Southern countries live together in CCA?

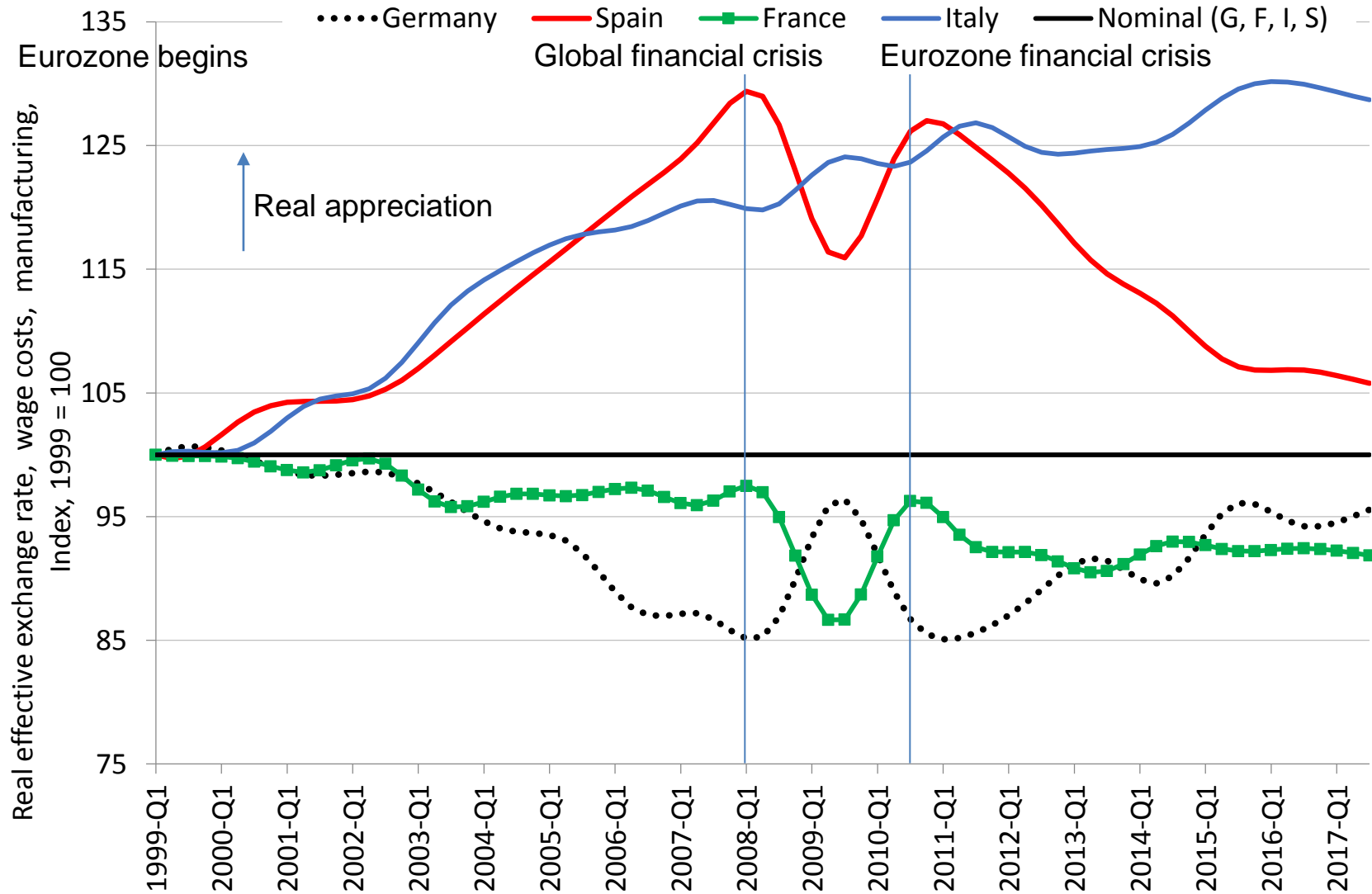
- Mixture of rational & non-rational wage-setting systems in Eurozone
- Allowed ECB to meet inflation target with small output gap whilst imbalances among members built up
- Inflation persistence and destabilizing real interest rate channel reflects wage behaviour

Implications for Eurozone (cont.)

- Germany has coordinated wage-setting via *large* wage-setters *in the export sector* and can deliver the outcome associated with rational wage-setters in the model: stabilizing fiscal policy is not required
 - Consistent with rational wage-setting is a commitment not to use fiscal policy for stabilization
- Southern countries do not have rational wage-setting ... they would need a price-level targeting fiscal policy to deliver required negative output gap and inflation below 2% following country-specific inflation shock
 - This is an active fiscal policy regime → requires good governance
 - Since the crisis, Spain has achieved RER depreciation but only with many years of very high unemployment to create a negative bargaining gap (Phillips curve)

Eurozone: intra-eurozone real exchange rate indices

1999=100, 1999-2017



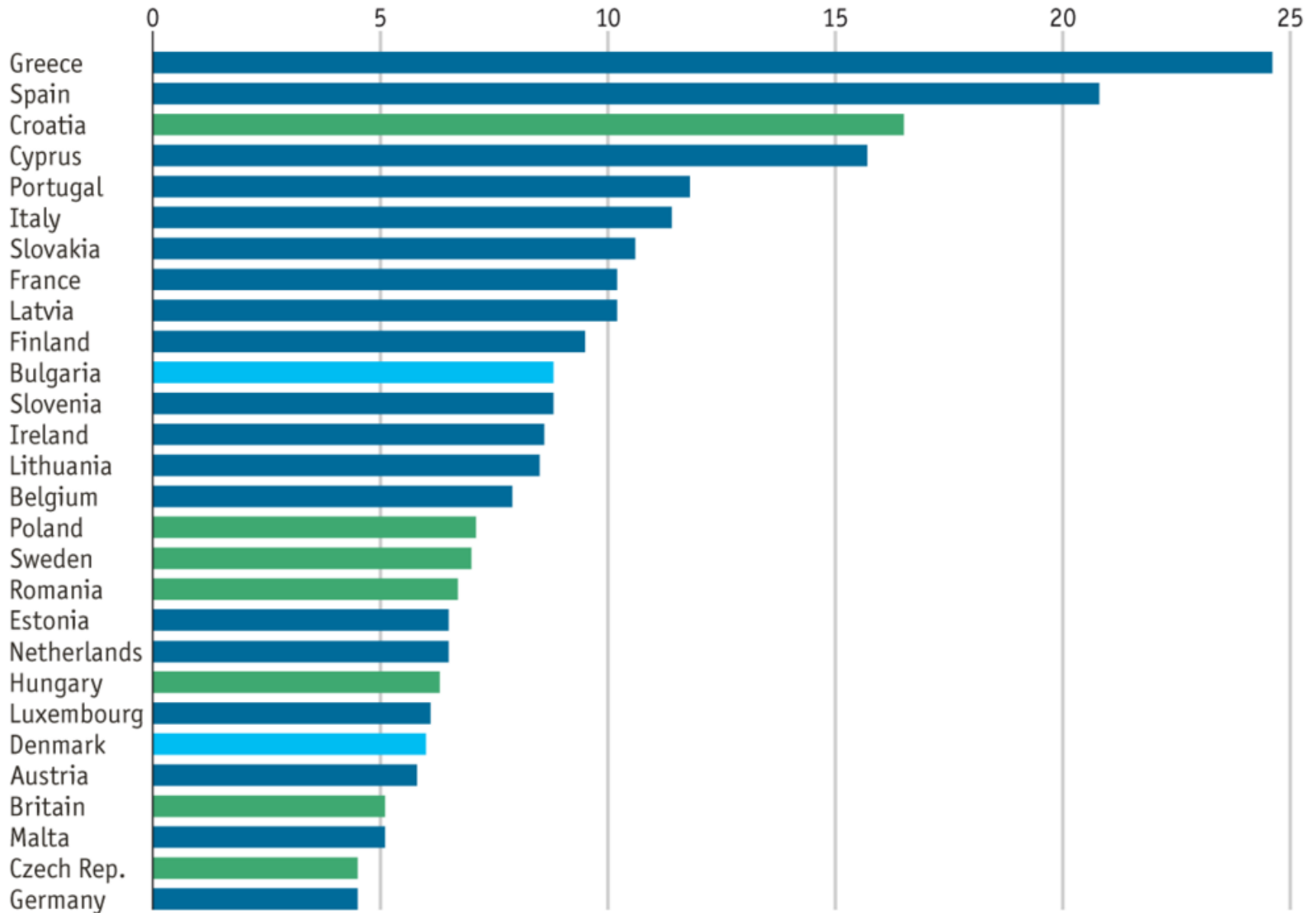
Unemployment rate

January 2016 or latest, %

■ Euro area

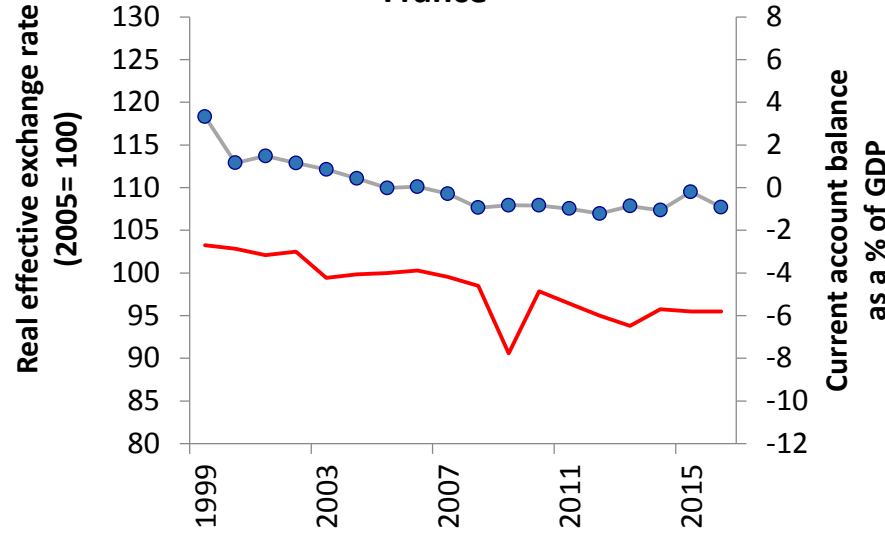
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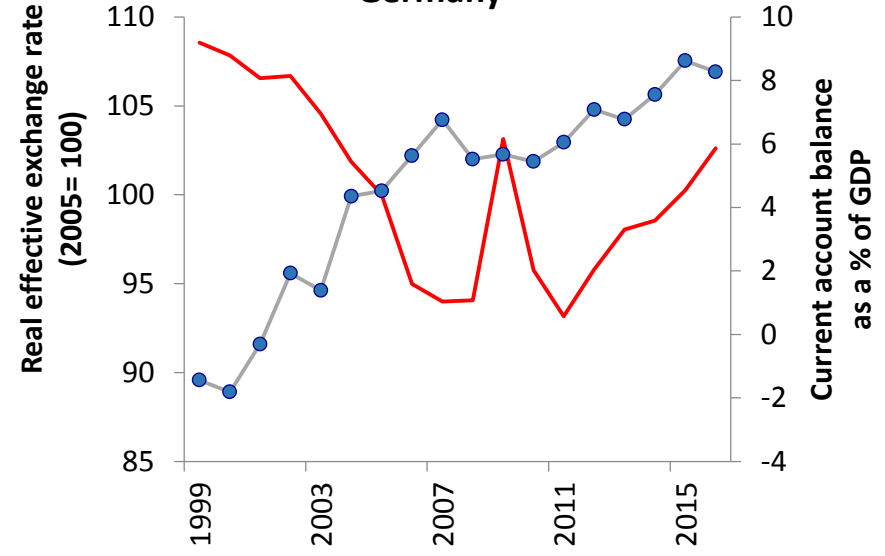
↑ Real appreciation

France

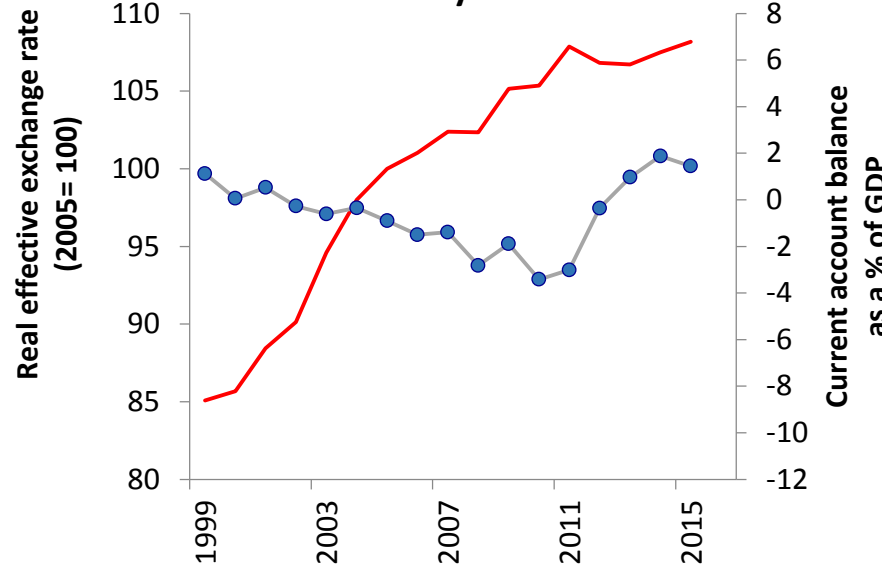


— REER (left axis) ● Current account balance (right axis)

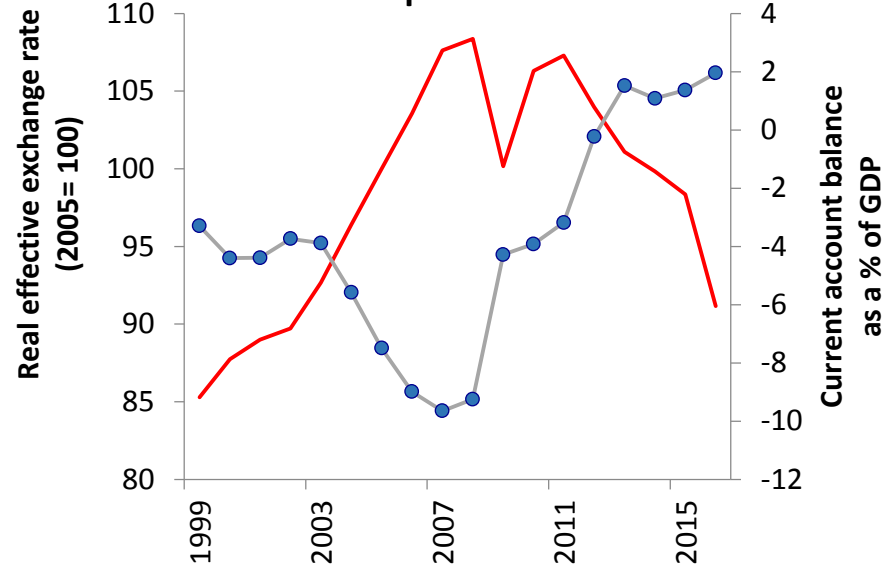
Germany



Italy



Spain



Implications for Eurozone (cont.)

- If CCA has mixture of rational & non-rational wage-setters & lacks national stabilizing fiscal policy, then →
 - even in absence of fiscally irresponsible behaviour (remember the budget surpluses and low government debt in some of the crisis countries before the global financial crisis)
 - cumulative RER misalignment; current account imbalances

Conclusions

- Policy implications
 - If wage-setters are non-rational then need stabilizing fiscal policy
 - Fiscal policy rule must target the price level (not inflation)
 - Balanced budget rules make sense if rational wage-setters (don't need stabilizing fiscal policy); otherwise need active fiscal policy addressed at stabilization
- Wishful thinking that ...
 - CCA membership & balanced budget rule produces rational wage-setting institutions

Labour market institutions, fiscal policy, and the functioning of the Eurozone

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Jean Monnet Lecture

University of Pisa