

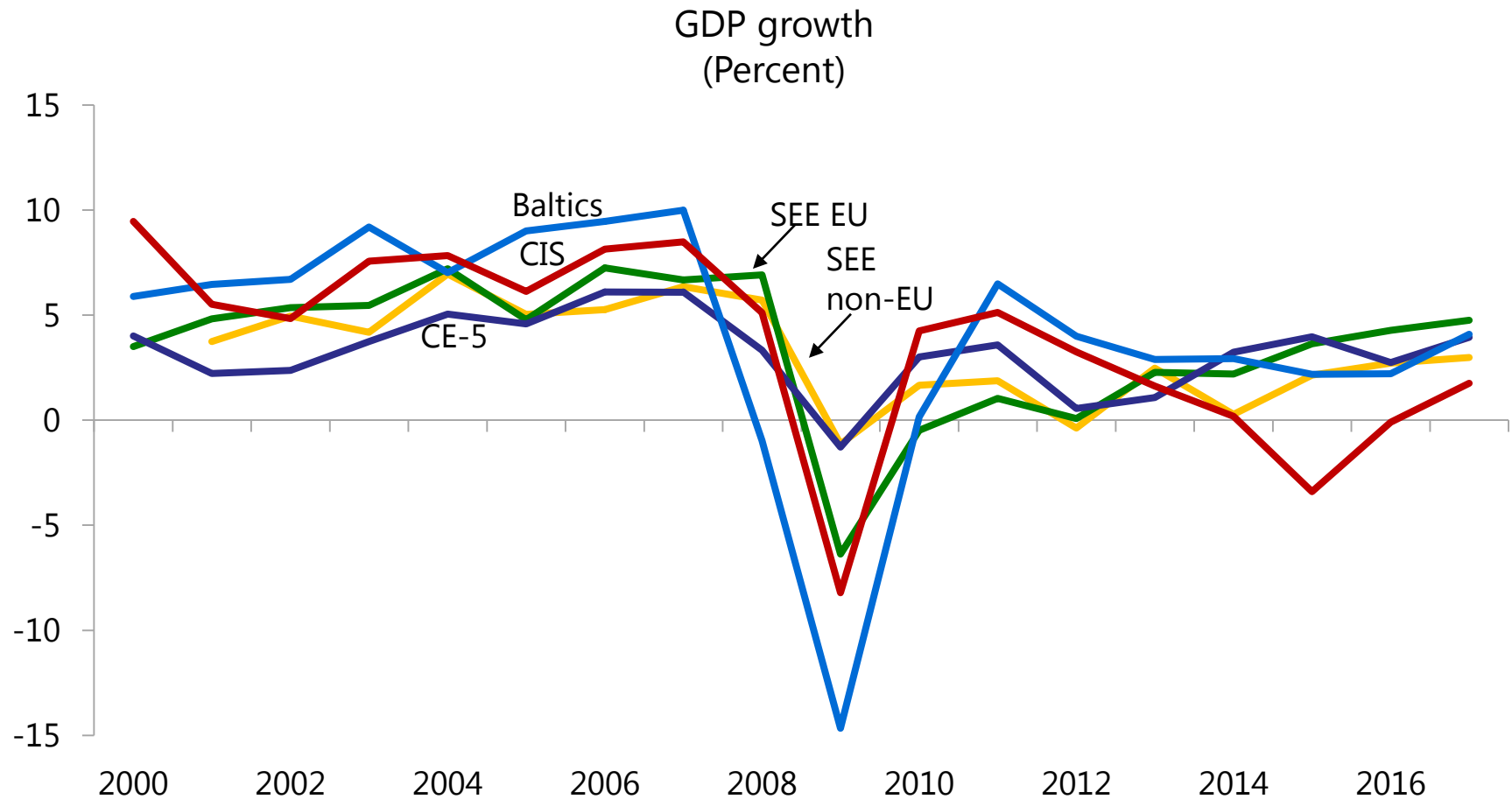
The Future of Growth in CESEE



Presentation at EBRD
London, 13 February 2018

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CESEE had a very deep crisis in 2008/09

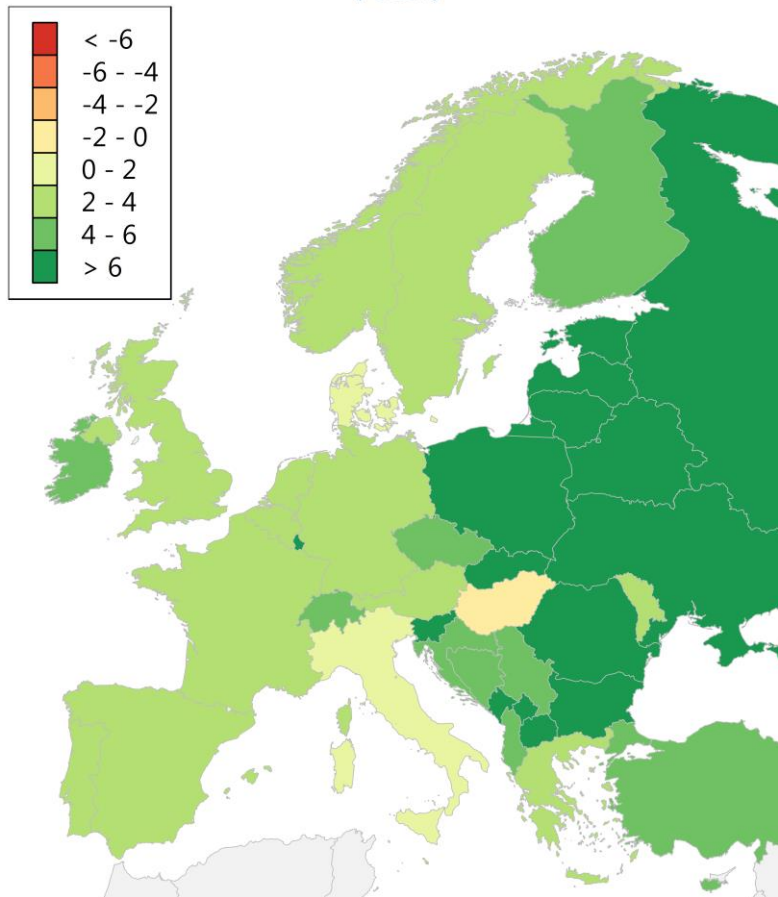


...albeit with significant cross-country differences



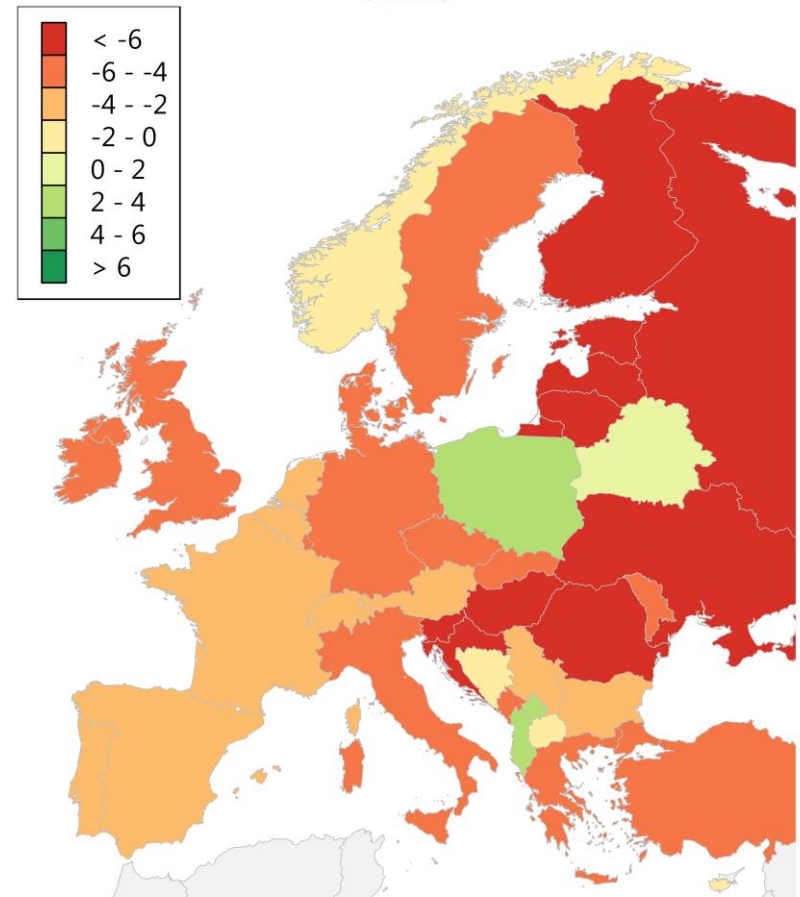
GDP Growth in 2007

(Percent)

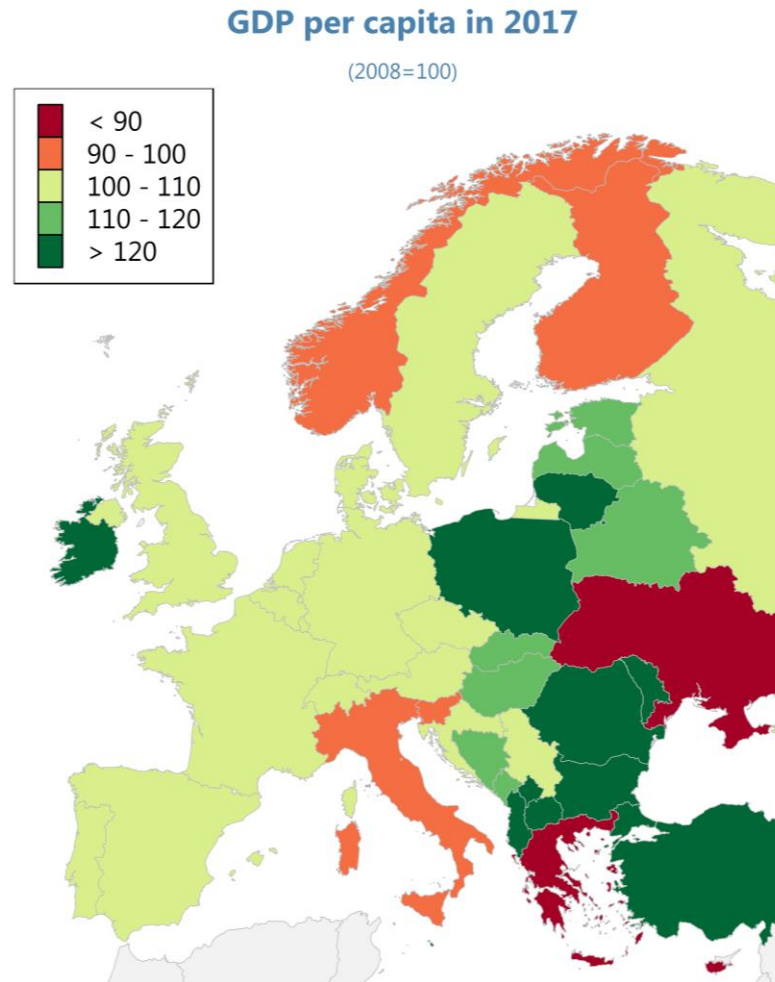


GDP Growth in 2009

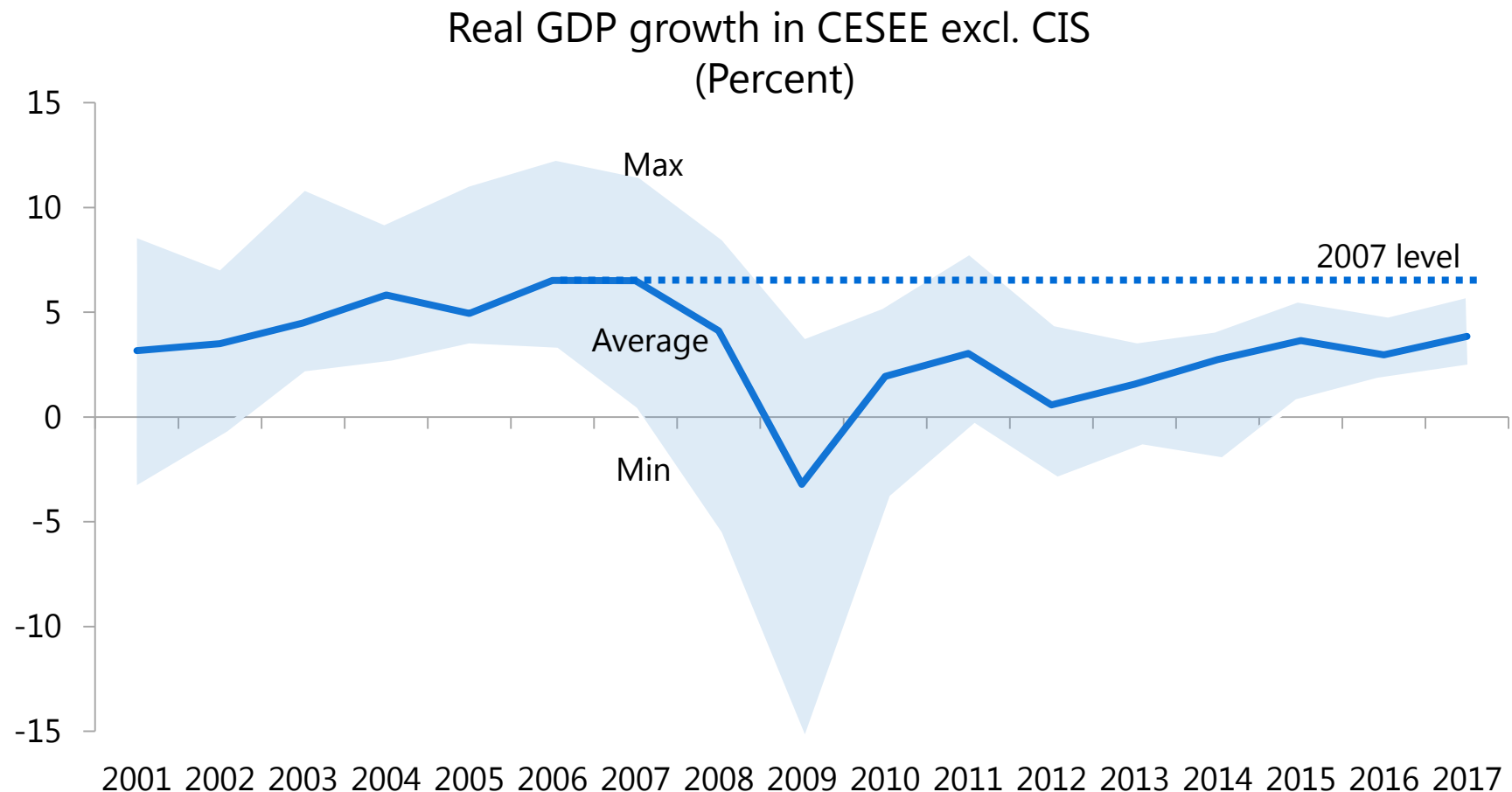
(Percent)



In most CESEE countries, GDP per capita is well above pre-crisis levels



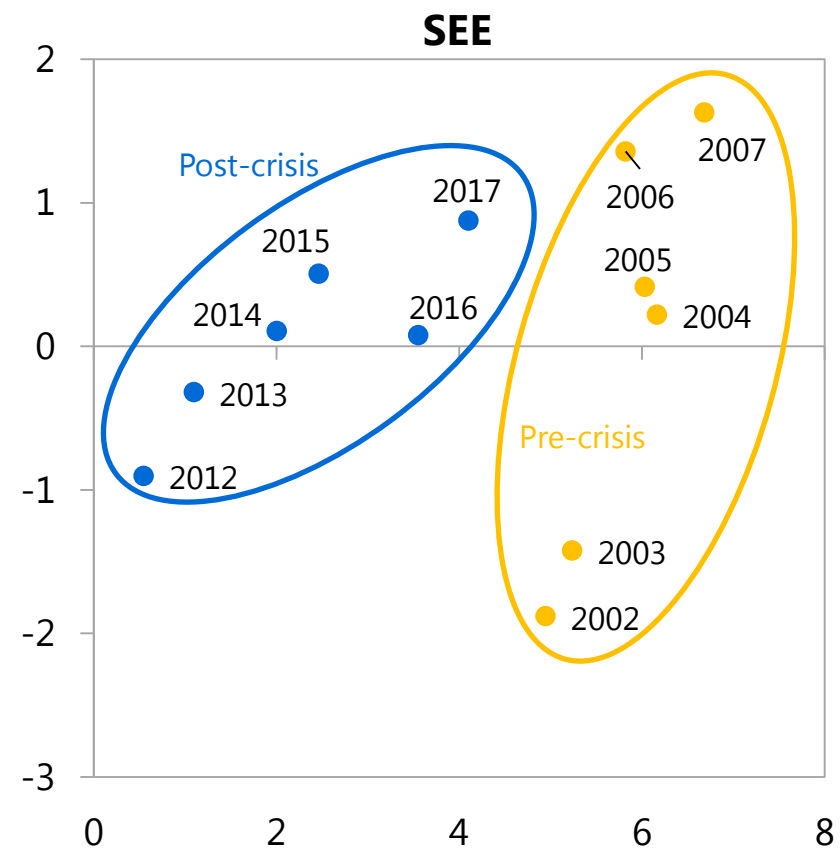
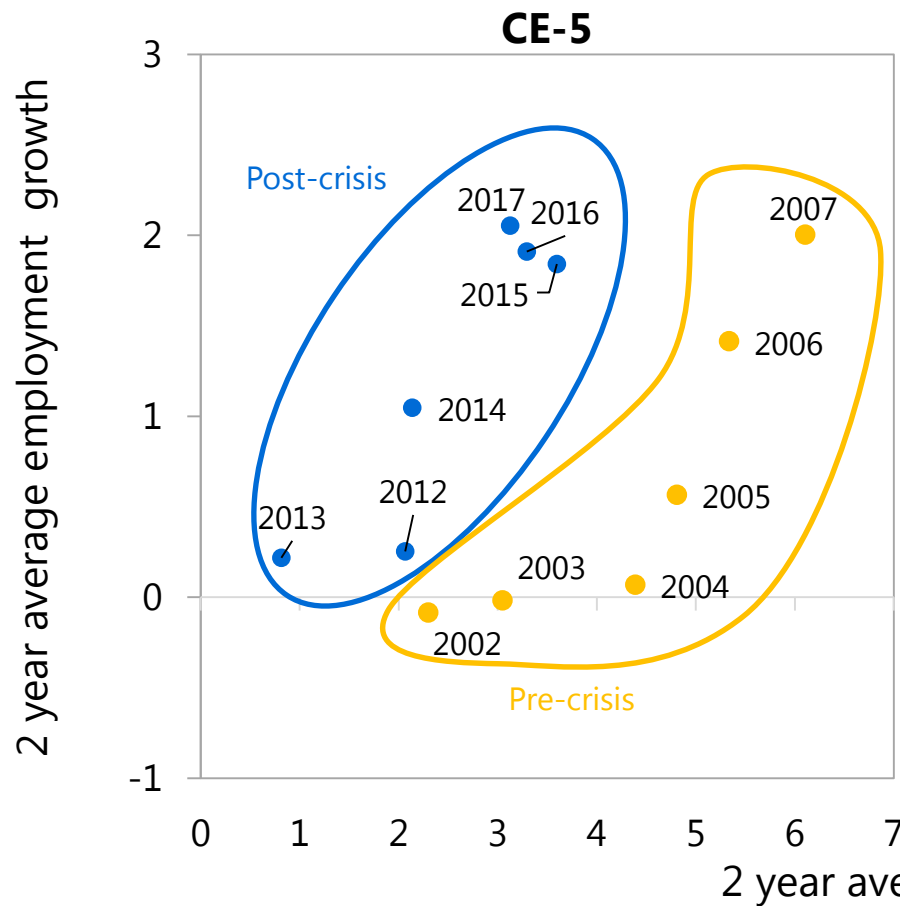
Growth is not as high as in the pre-crisis years



But employment growth in many countries is as high as during pre-crisis peaks.



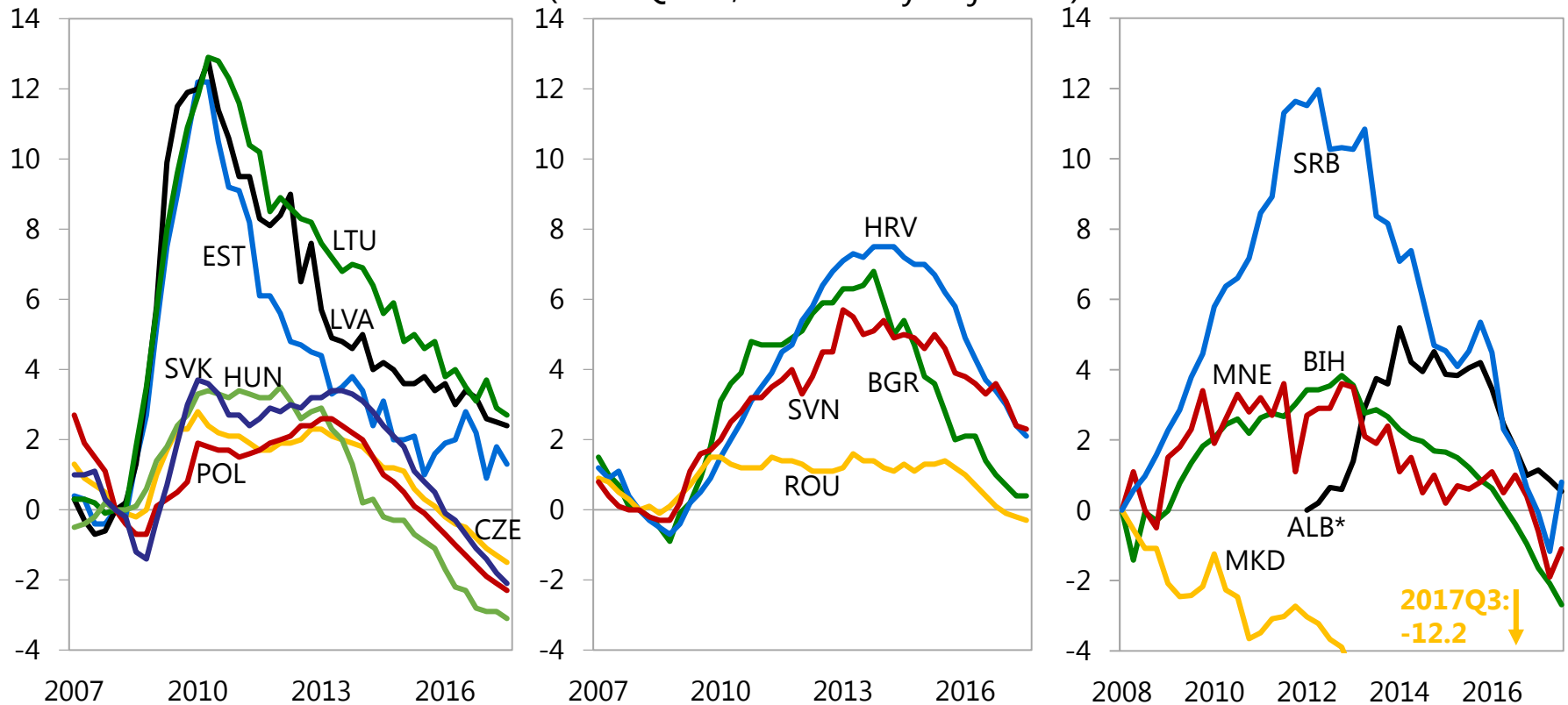
GDP growth vs. employment growth
(Percent, 2 year average)



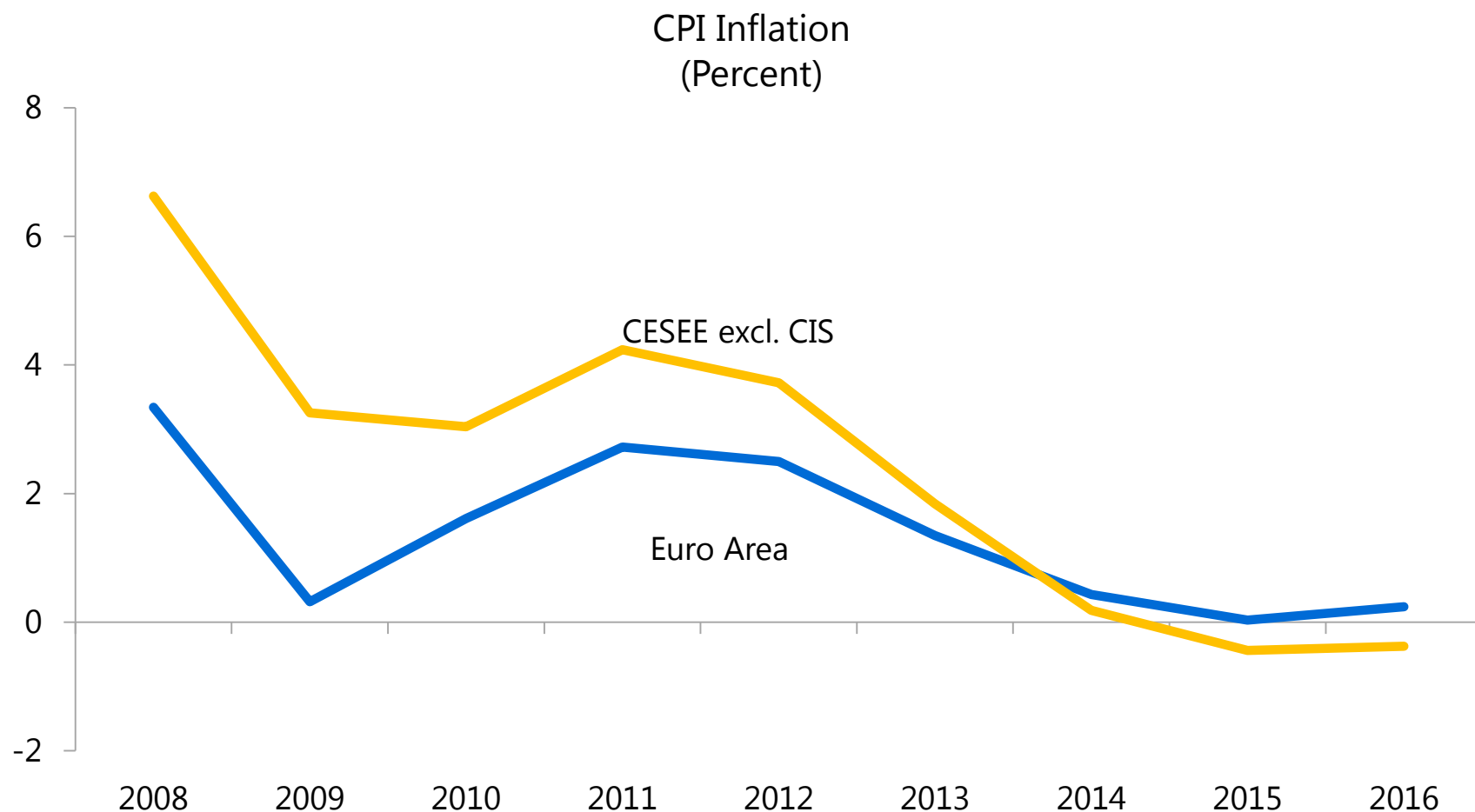
Unemployment is coming down rapidly and is now below pre-crisis levels



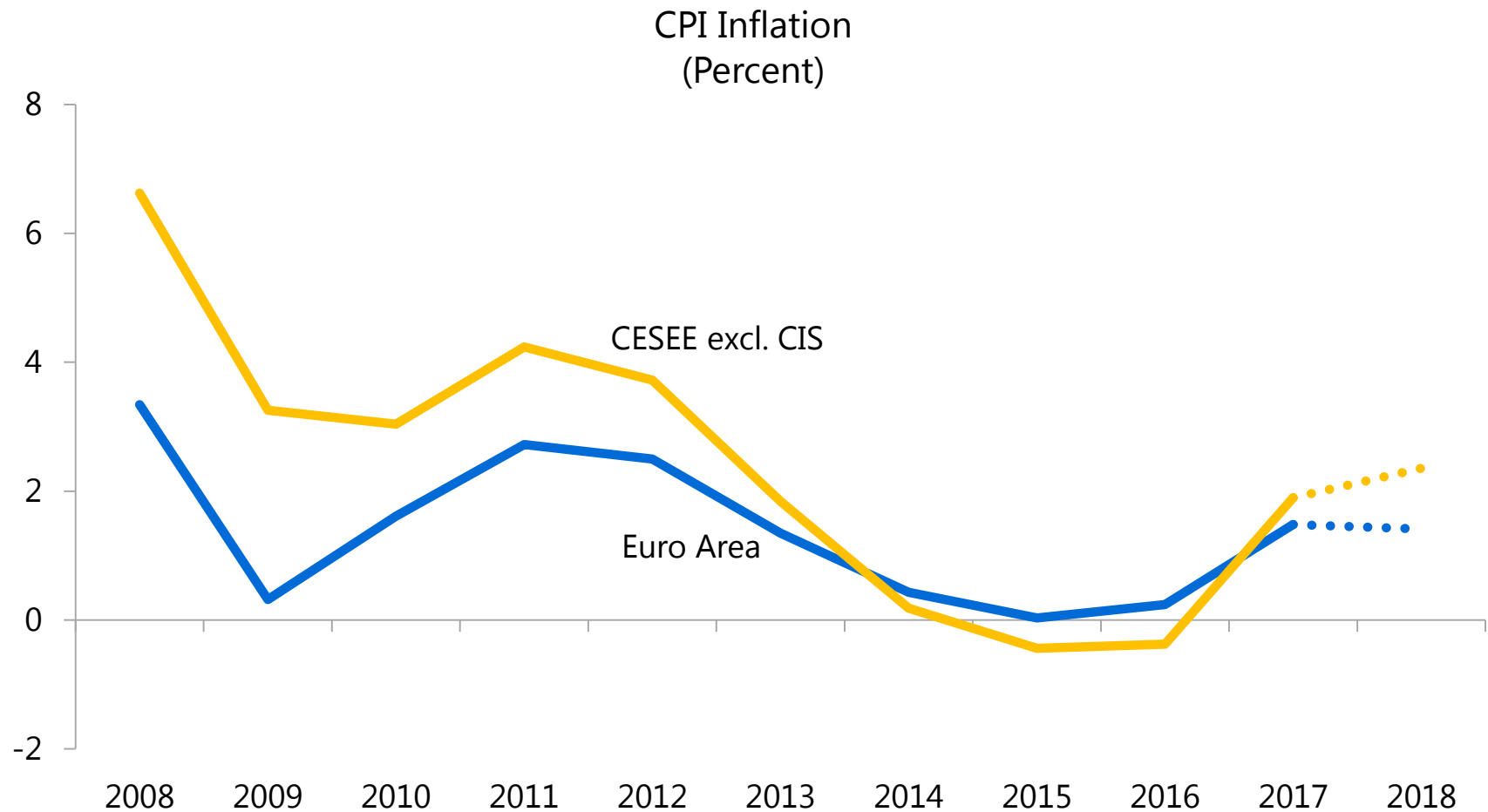
Cumulative Changes in Unemployment Rate
(2008Q1=0, seasonally adjusted)



Despite this rapid fall, in 2014-16, inflation was very low in CESEE – even lower than in Western Europe



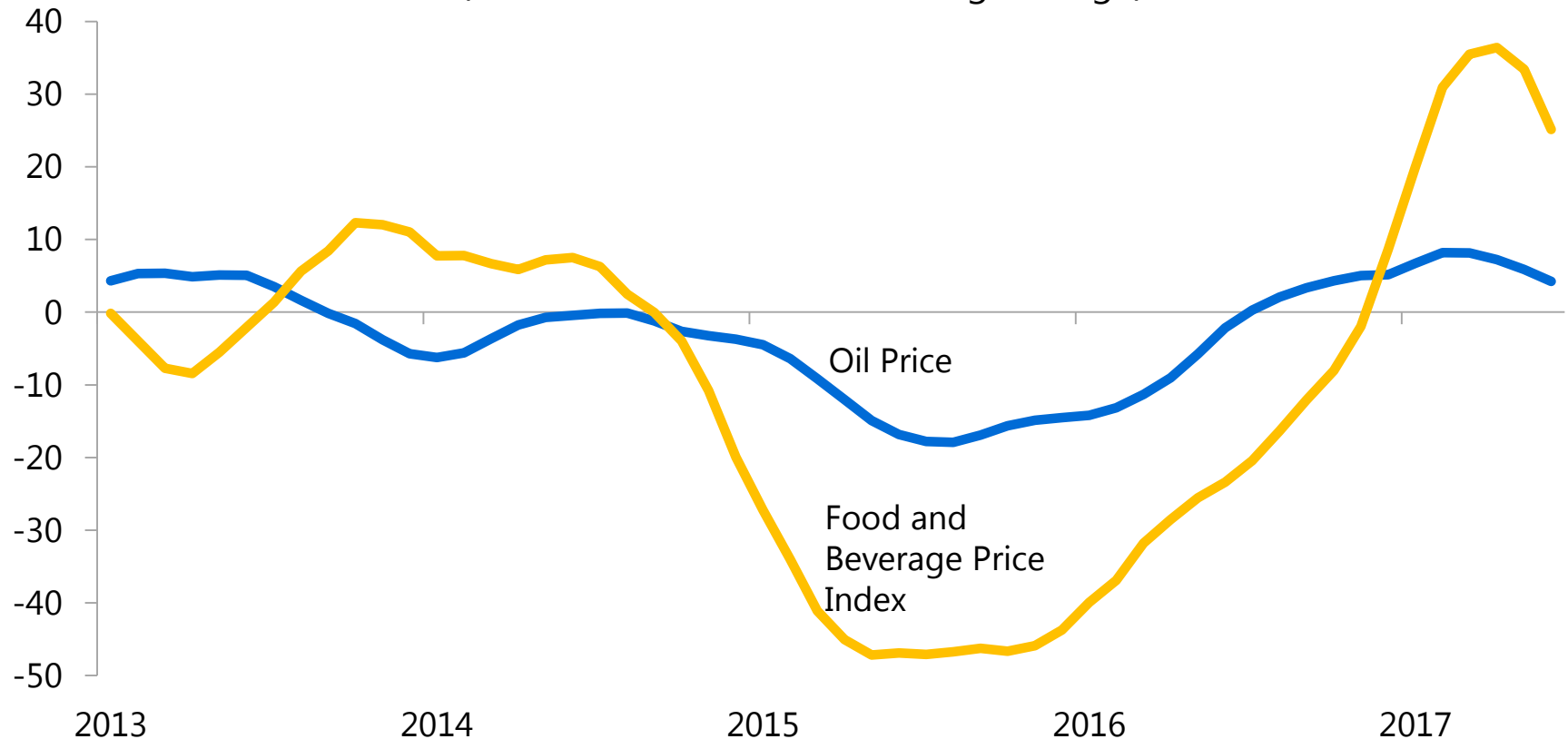
In 2017 inflation picked up



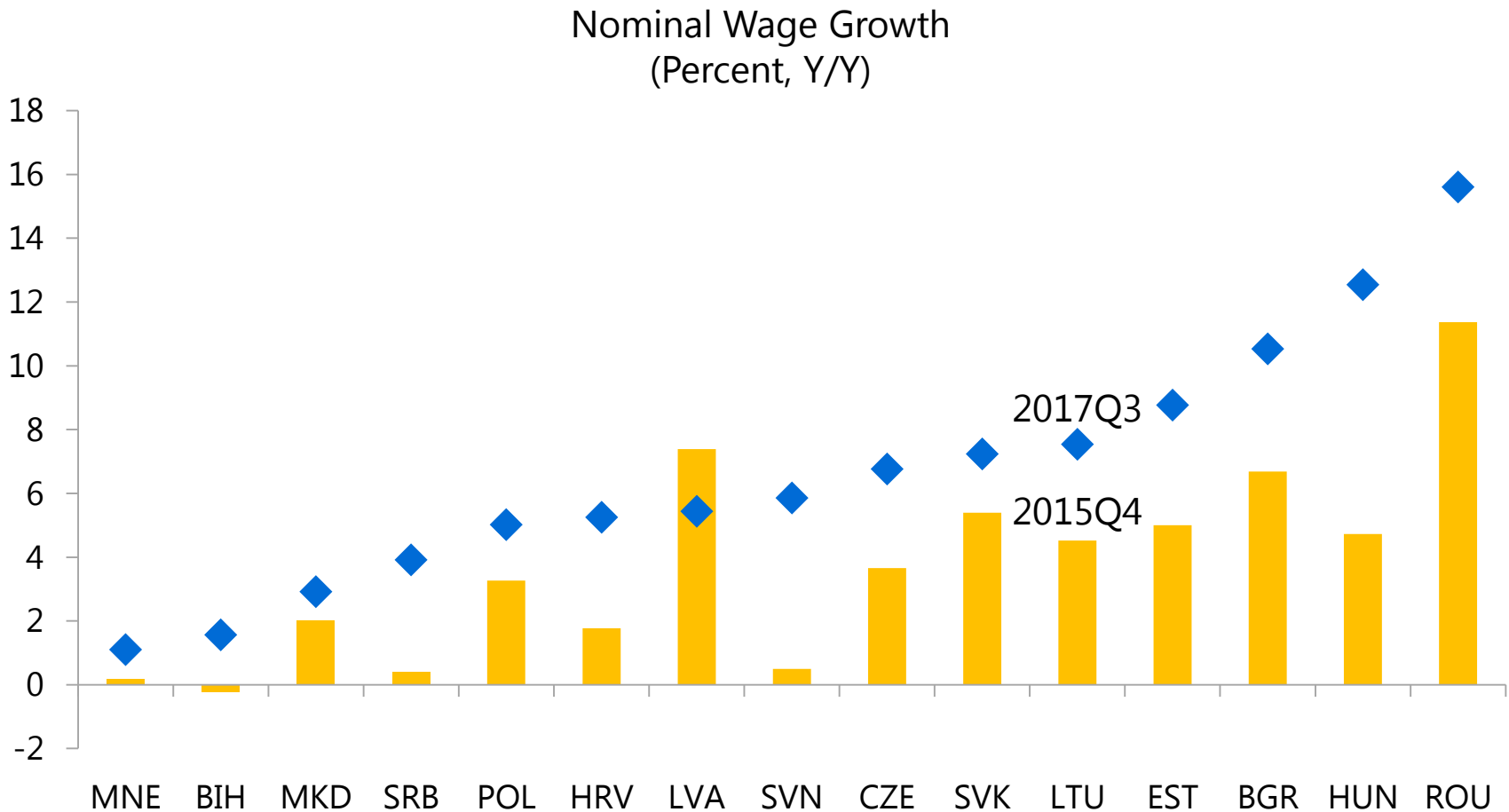
Energy and food prices played key role in resurgence of inflation



Oil and Food Prices
(Percent, Y/Y, 6 months moving average)



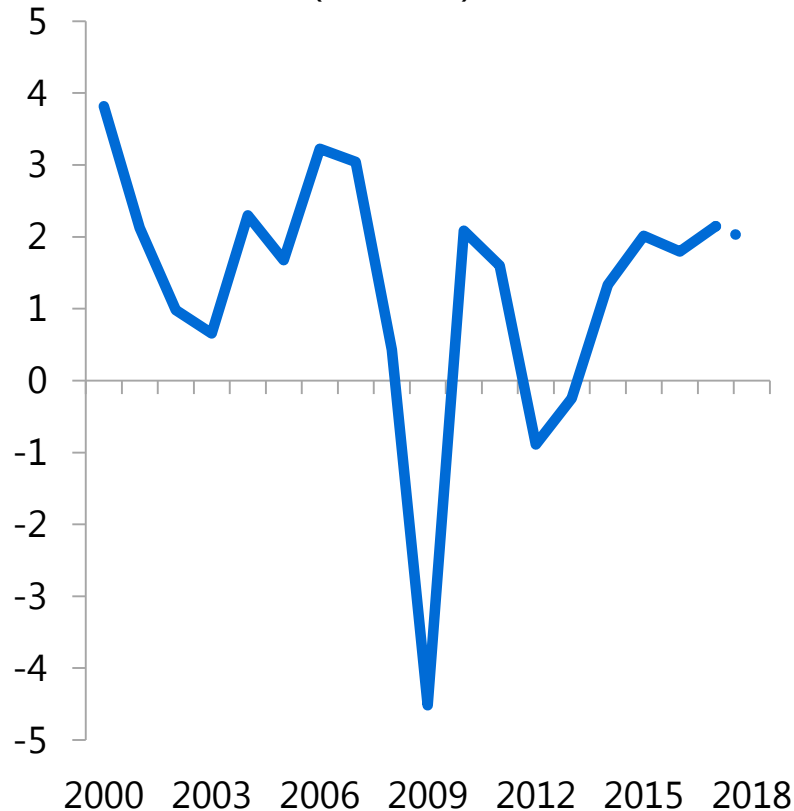
However, wage growth has also notably accelerated over the past two years



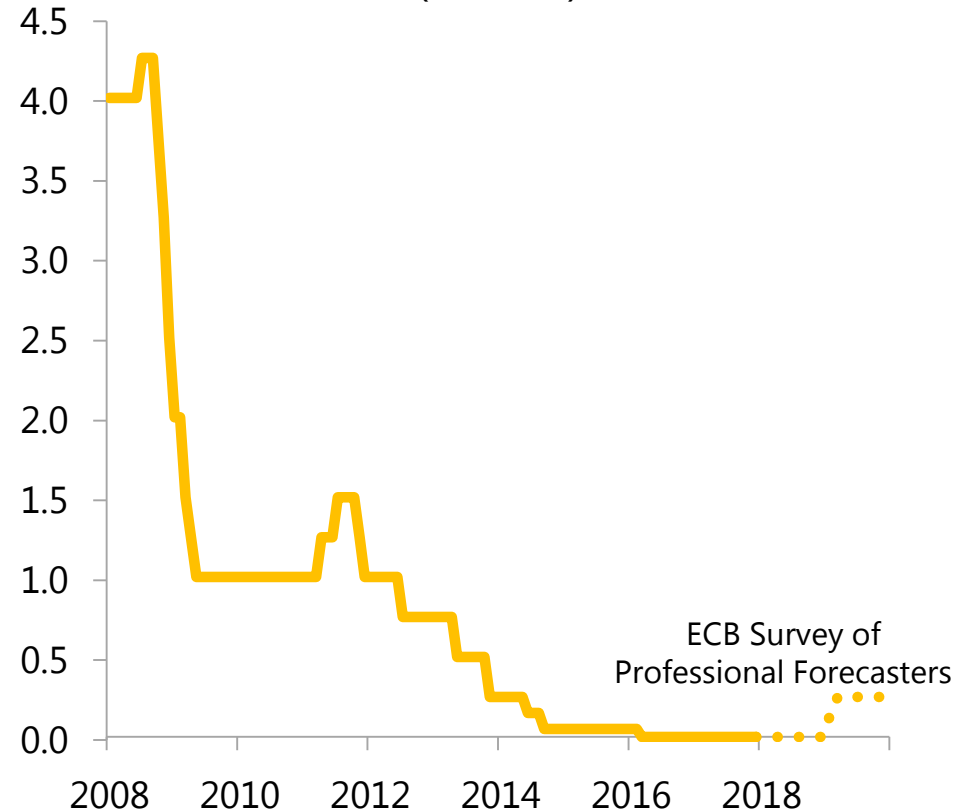
Outlook for Western Europe is for continued recovery and low interest rates



Real GDP Growth in Euro Area
(Percent)



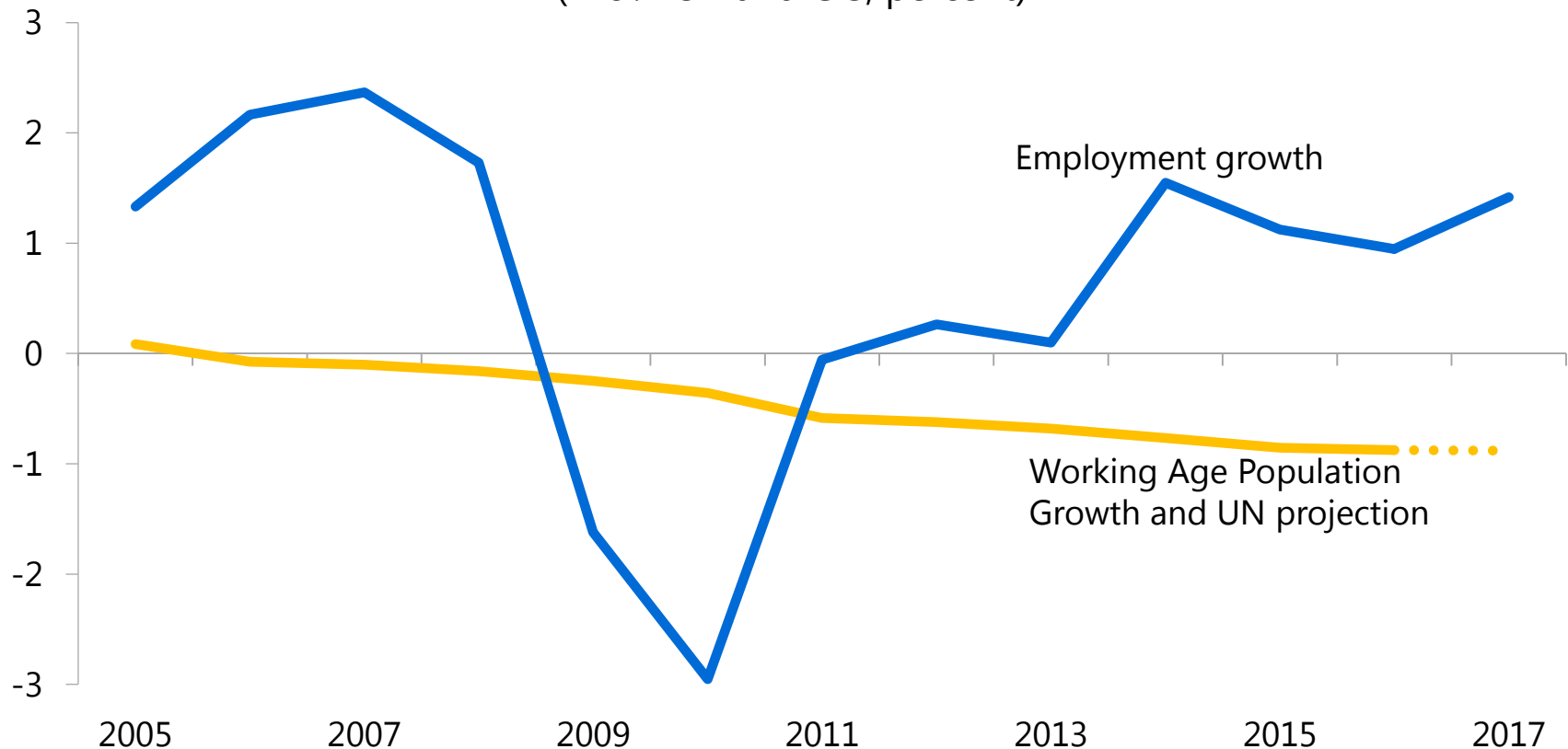
Euro Area Policy Rate and Its Forecast
(Percent)



This makes it likely that rapid growth will continue.
Question: What will it imply for the labor markets?



Employment and Working Age Population Growth in CESEE
(Excl. TUR and CIS, percent)

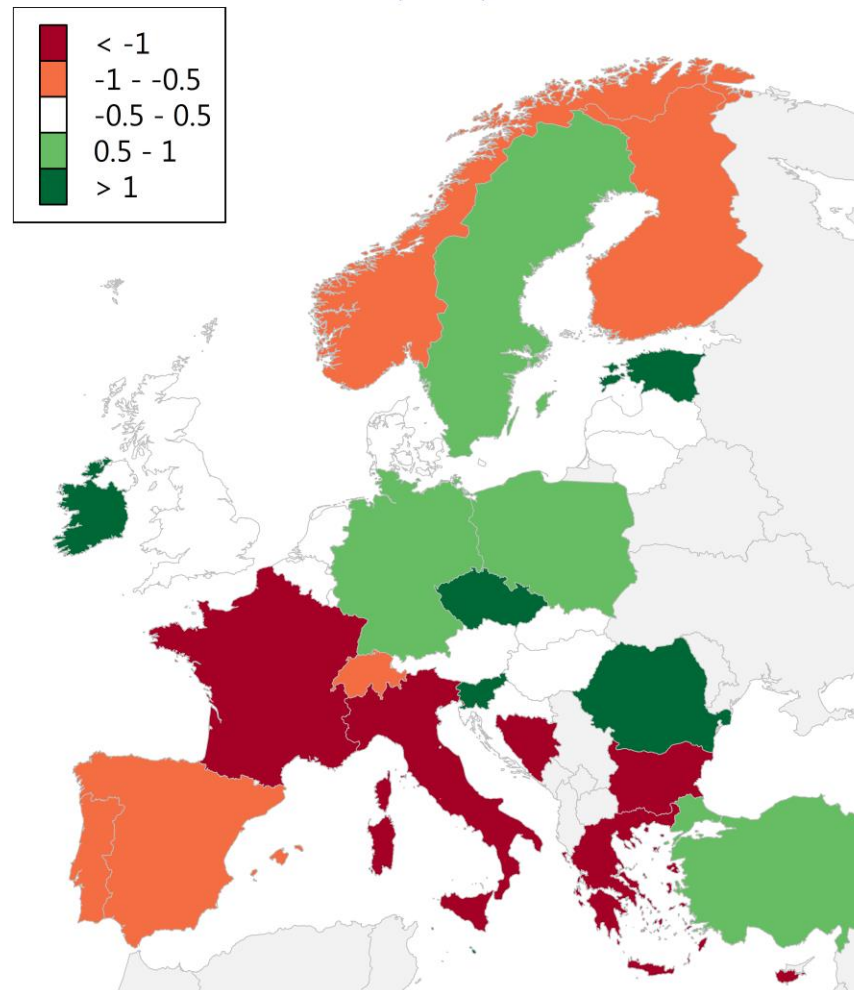


According to WEO estimates, output gaps in most countries are now closed



Output Gap in 2017

(Percent)



Outside the labor market, there are no signs of overheating



- Inflation is modest
- Current account deficits remain low and capital inflows are low
- Credit growth does not much exceed GDP growth

Tightening labor markets and low inflation may continue to co-exist in the near future

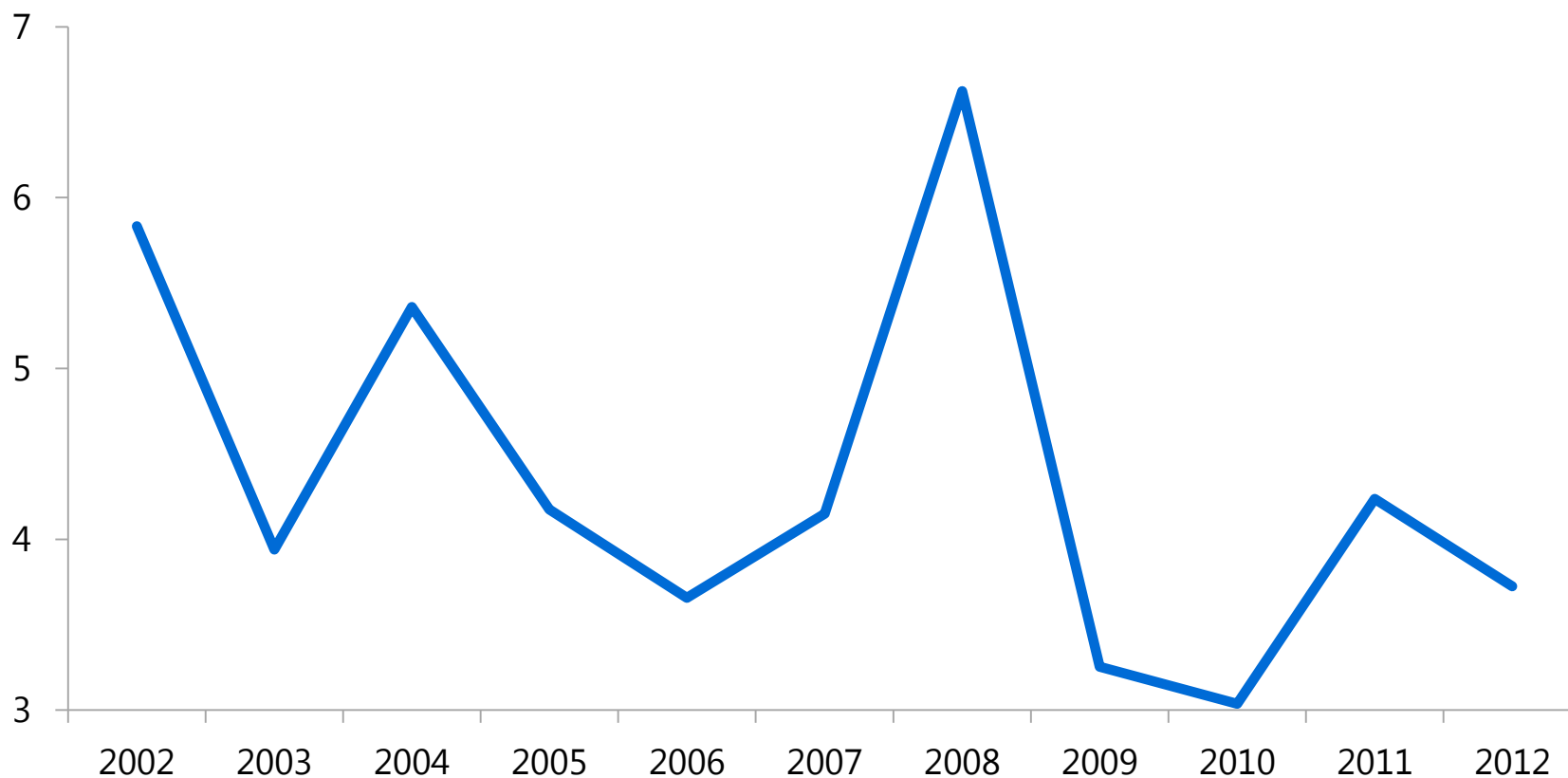


- Much of inflation in CESEE depends on
 - Food and energy prices
 - Imported inflation
- Exchange rate appreciation in some countries may keep inflation low

Pre-crisis, inflation really picked up only in 2007-08,
when oil shock added to tight labor markets



CPI Inflation in CESEE
(Percent, excl. CIS)



Even if rapid growth of wages does not lead to pick-up of inflation, it may still affect the economy



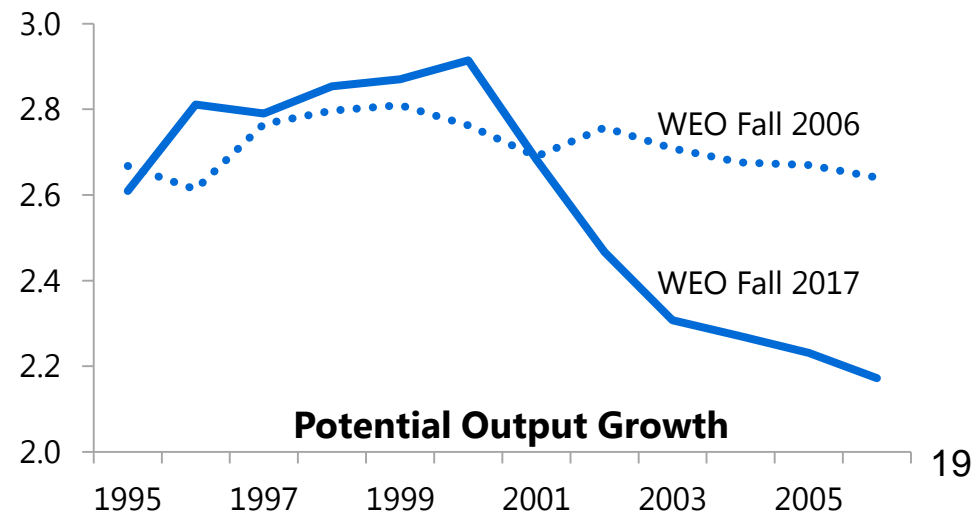
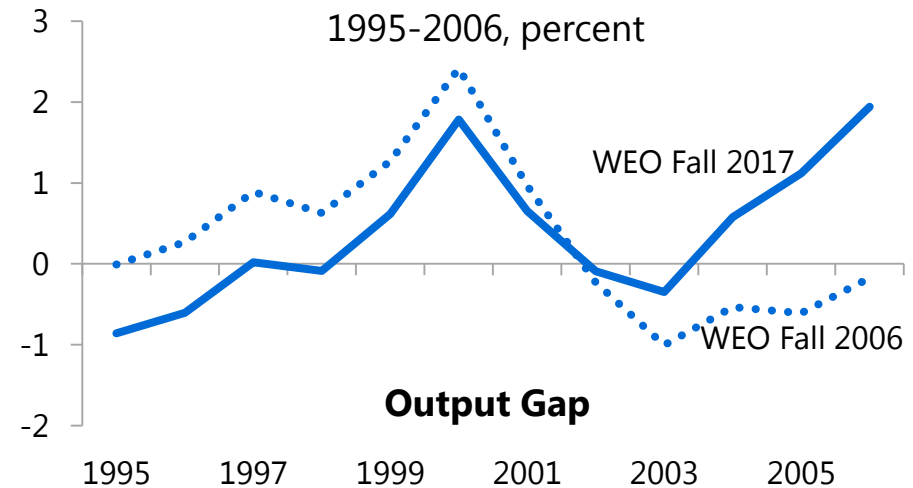
- If firms absorb rising labor costs, profit margins will decline
- Decline of profit shares will
 - Reduce investment
 - Reduce competitiveness

Low inflation does not necessarily mean that growth is sustainable



- In pre-crisis years we overestimated potential output growth in advanced countries because core inflation remained low

Output Gap in and Potential Output Growth in Advanced Economies: 1995-2006, percent



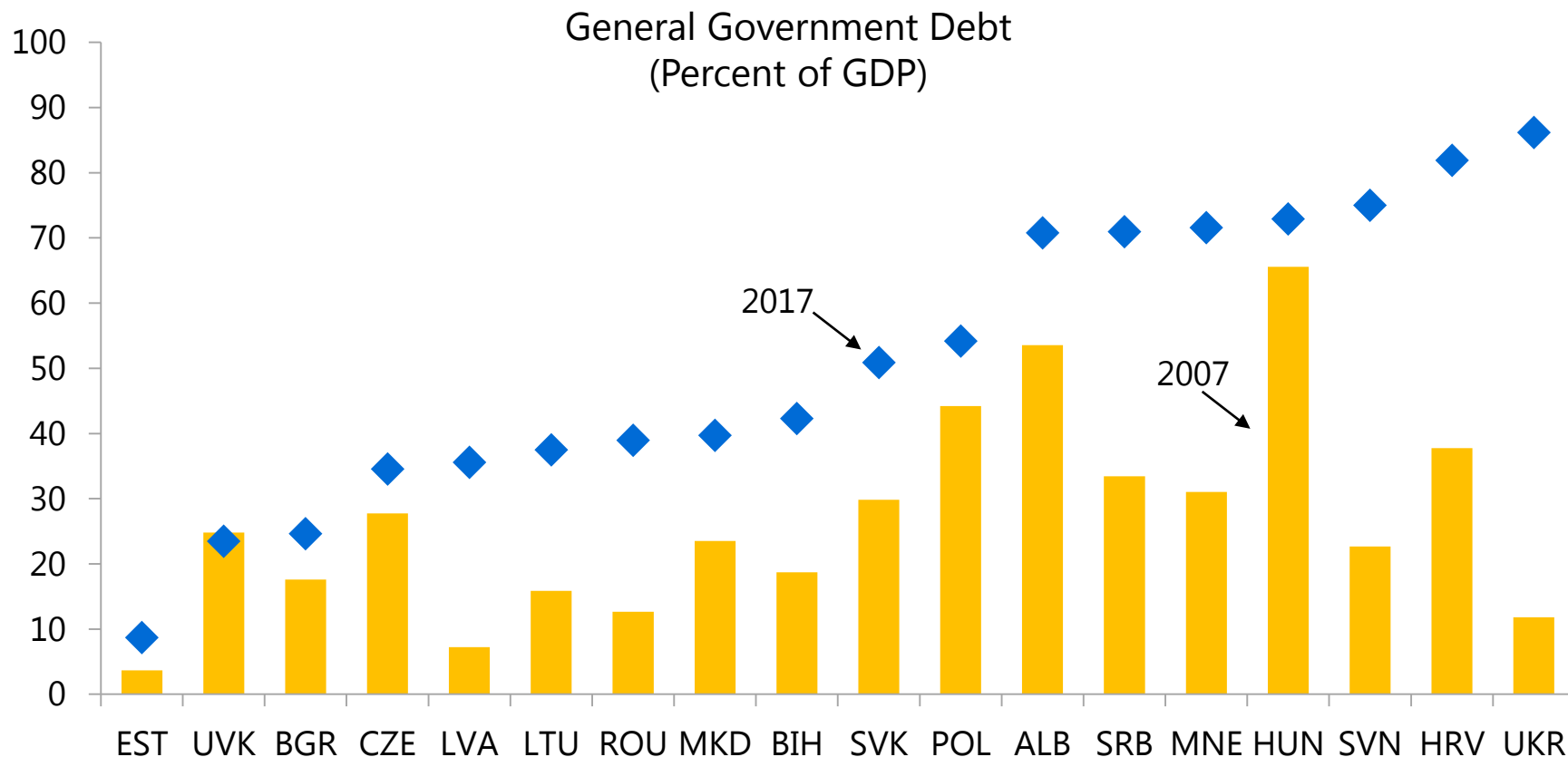


IMPLICATIONS FOR CYCLICAL POLICIES

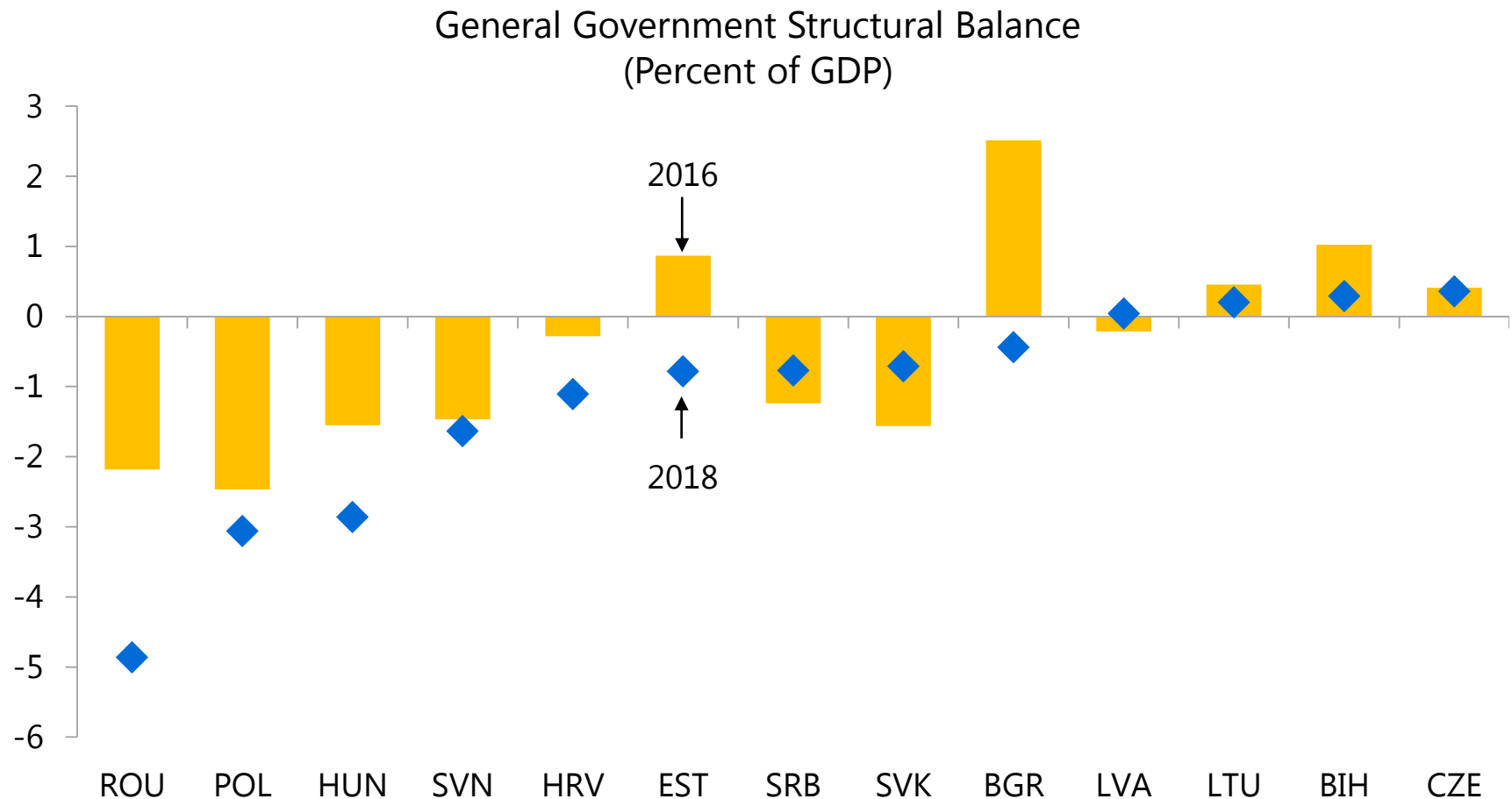
This would be the good time to create fiscal space and reduce structural deficits



- Particularly given that debt is much higher than pre-crisis levels.



Unfortunately, many countries are reverting to pro-cyclical loosening

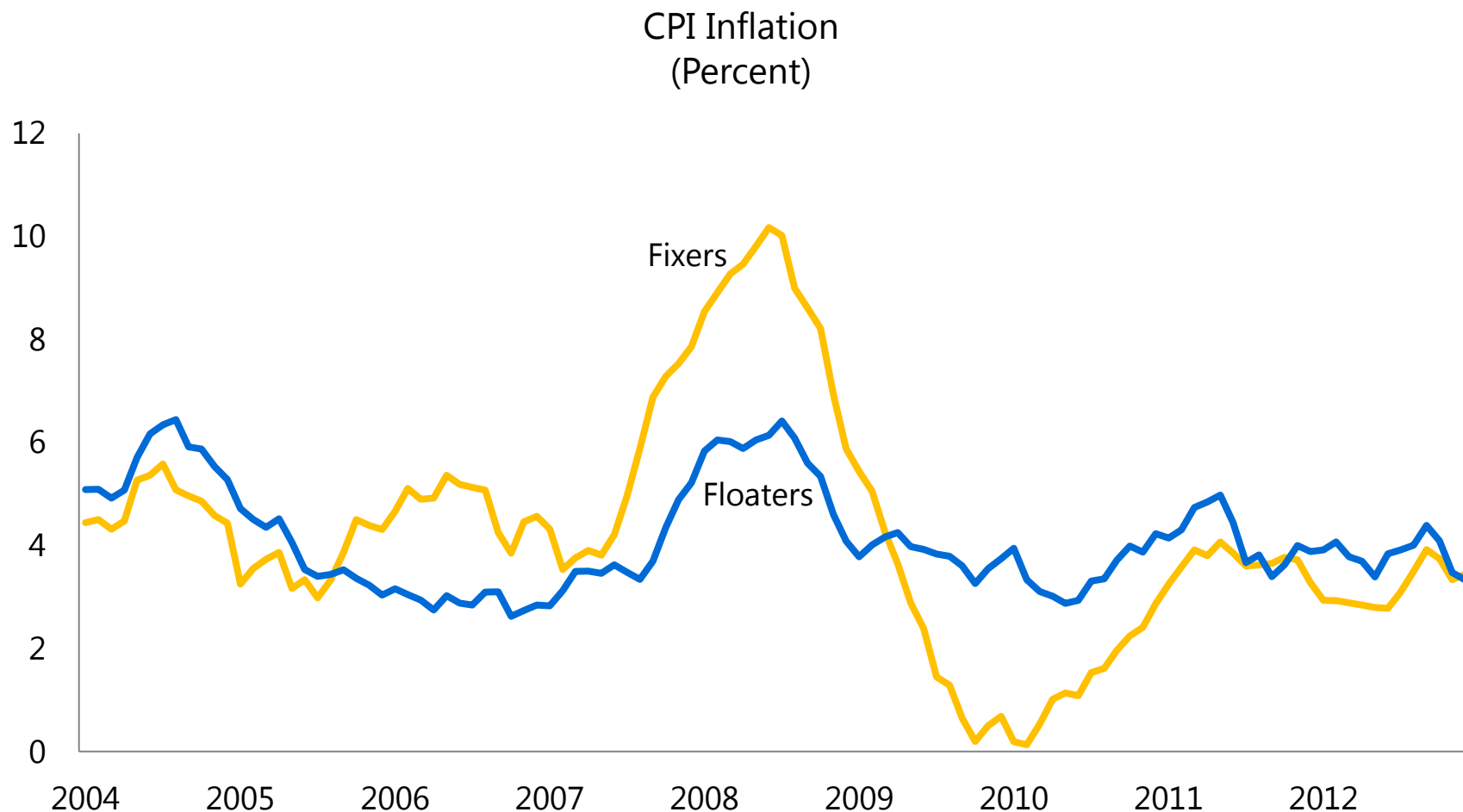


Monetary policy will only be an option in countries with floating exchange rates



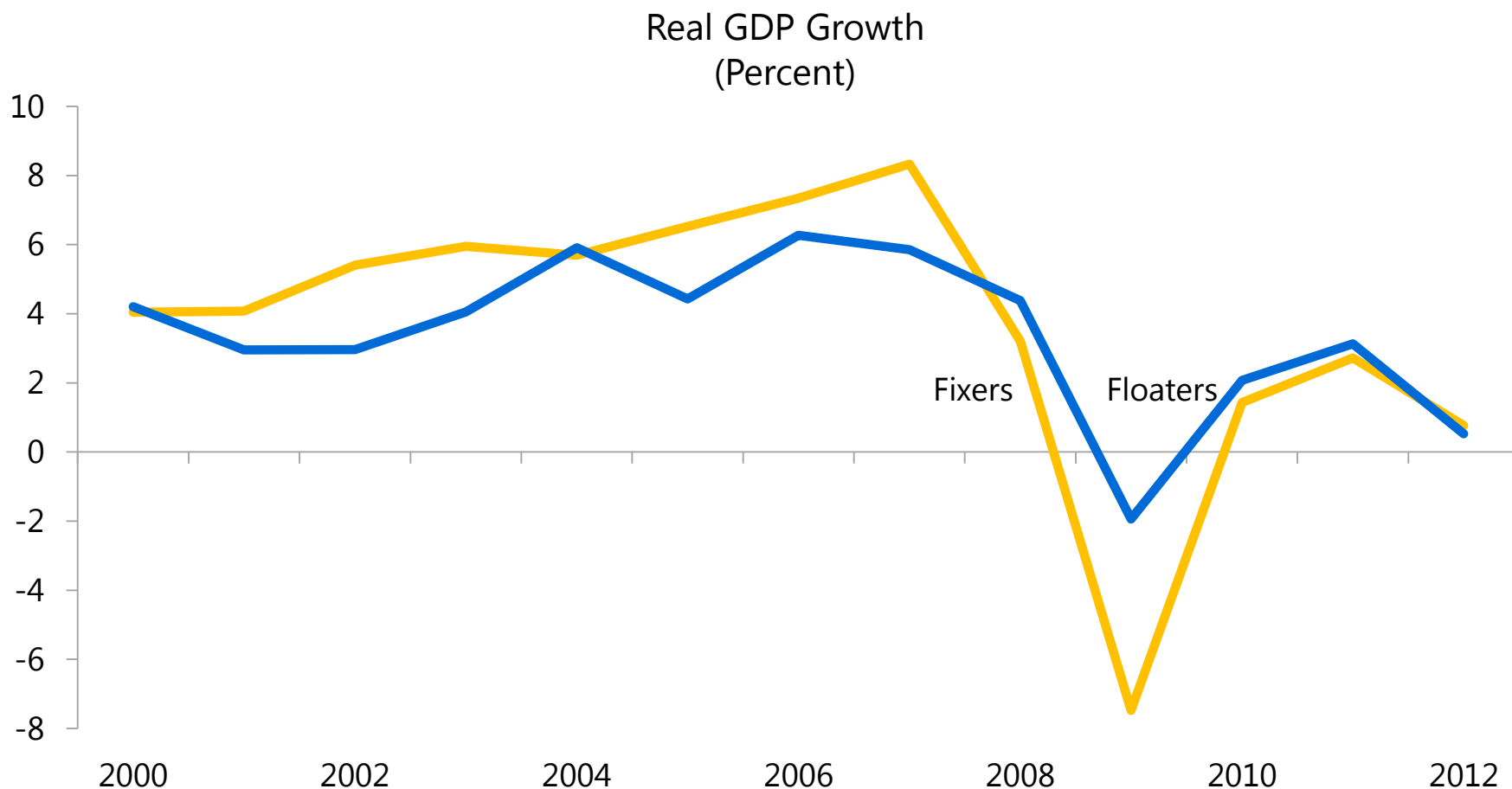
- They can let exchange rate appreciate
- They can raise interest rates
- Countries with fixed exchange rates or the euro have the most challenges:
 - **Nominal** interest rates are likely to stay low (in line with ECB rates)
 - **Real** interest rates will then *decline* as inflation/wages pick up

Pre-crisis, countries with floating exchange rates found it easier to keep inflation low



Note: Fixers include BGR, EST, HRV, LVA, LTU, SVN and SVK. Floaters include CZE, HUN, POL and ROU.

...and were able to mitigate the boom-busts.



Note: Fixers include BIH, BGR, EST, HRV, LVA, LTU, SVN and SVK. Floaters include ALB, CZE, HUN, POL, ROU and SRB.

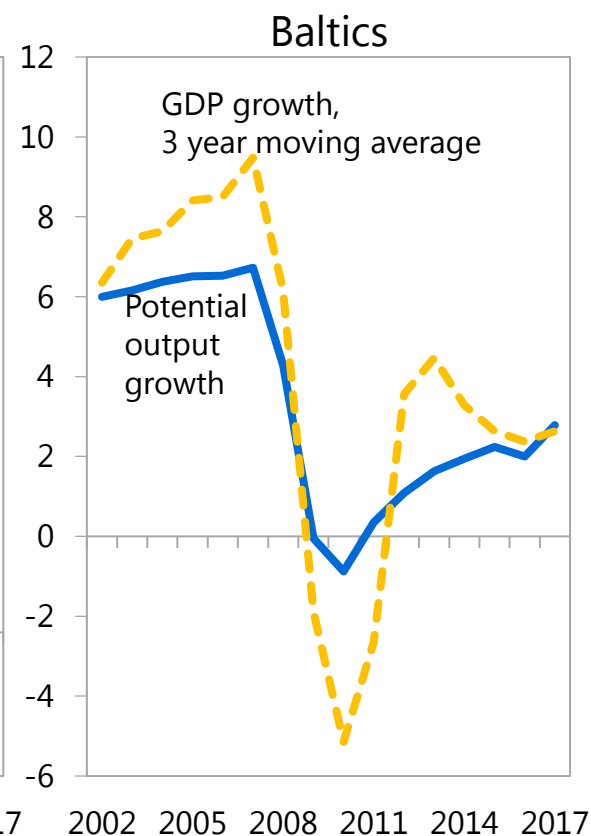
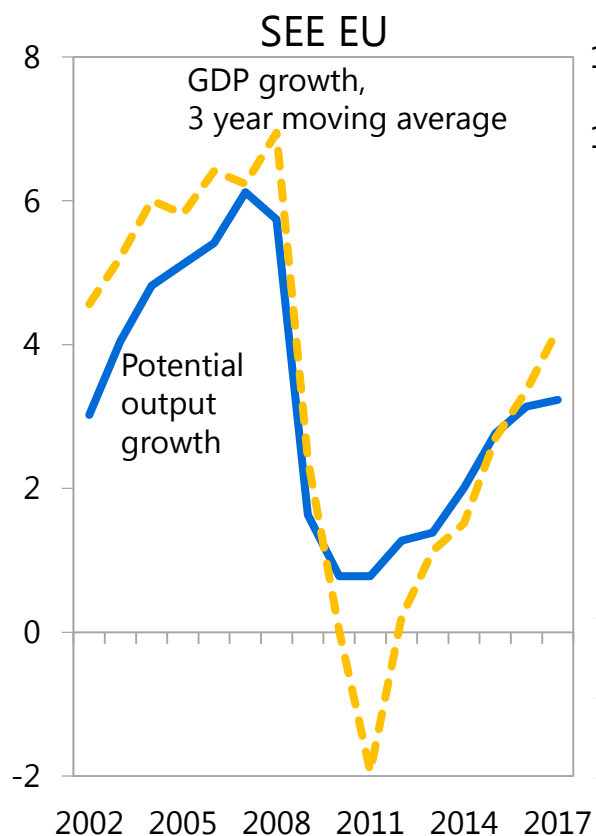
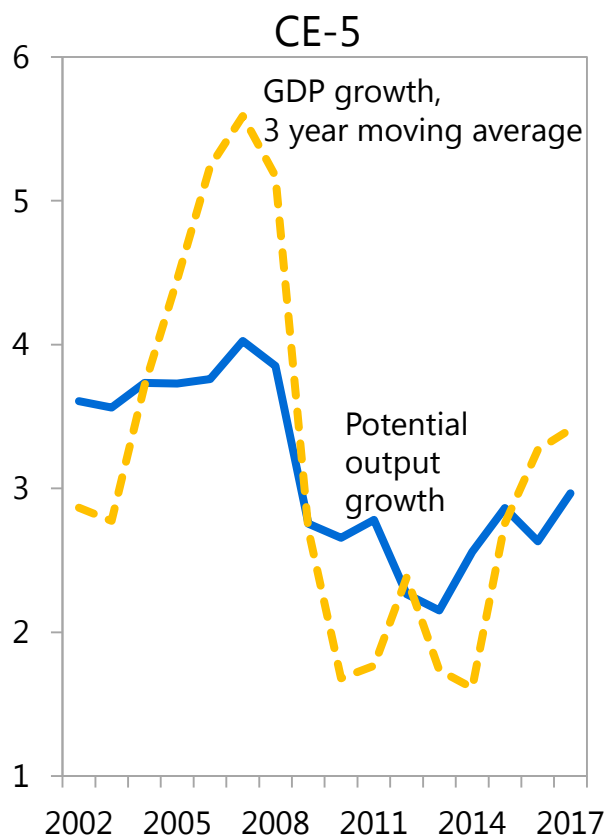


IMPLICATIONS FOR STRUCTURAL POLICIES

Potential output growth is well below pre-crisis levels.



Potential Output and GDP Growth
(Percent)



Why has potential GDP growth slowed?



- TFP growth has slowed
- That means *same* investment yields less output increase
- Lower return on investment leads to decline of investment, further reducing growth

To understand this, let's look at Solow-Swan growth model



- In Solow-Swan growth model, long-term growth depends on $n+g$
 - n =growth of working age population
 - g =growth of labor augmenting technological progress (which is equal to TFP growth/labor share)

According to Solow-Swan, in long term, GDP growth does not depend on investment rate



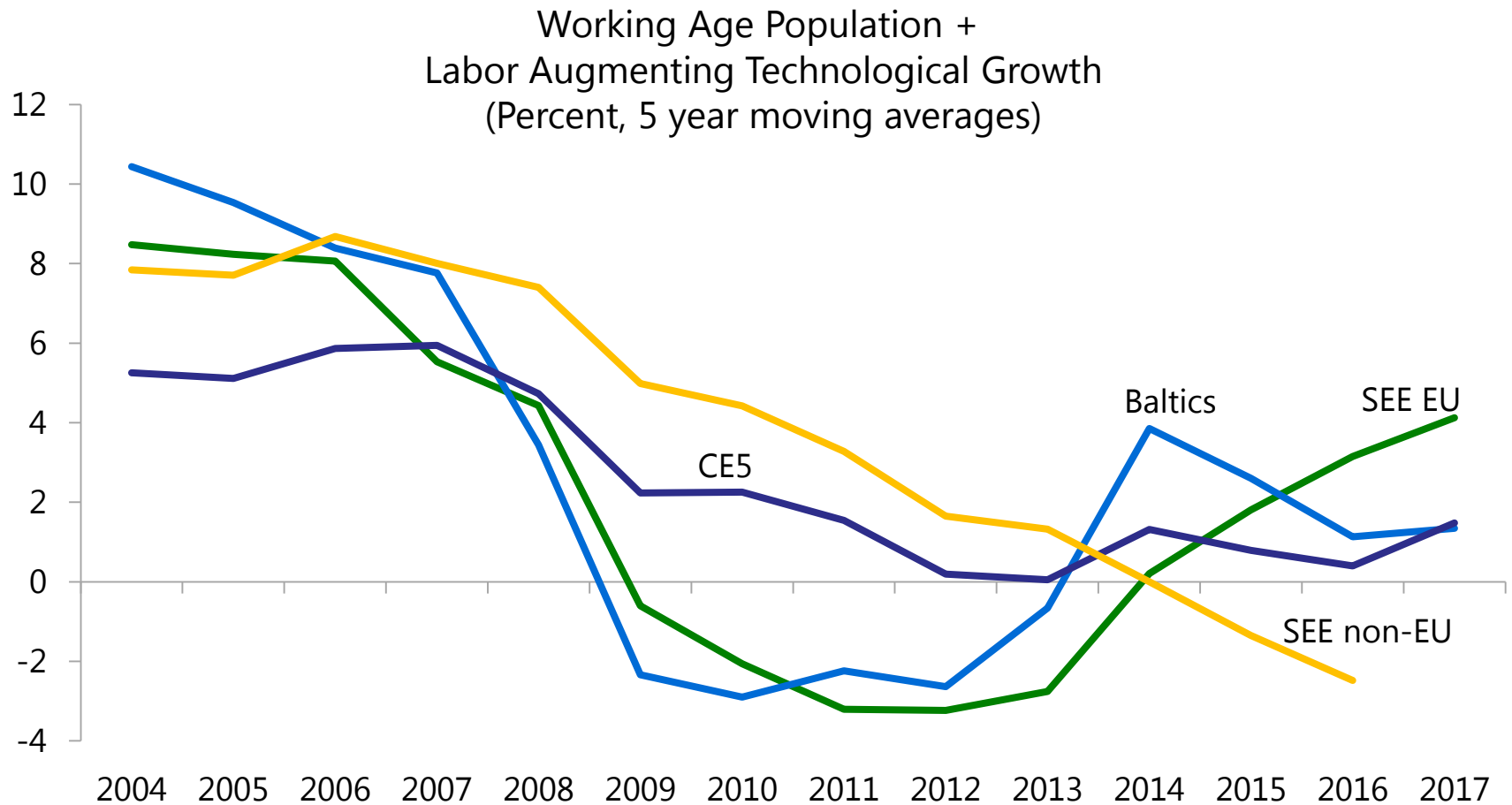
- Higher investment rate without increase in $n+g$ will initially lead to higher GDP growth rate
- But as capital-output ratio rises, growth rate falls back to old level
- (Of course investment rate does matter for income *levels*)
- (Government investment may boost TFP and be better for growth than government consumption)

What would we expect to happen if $n+g$ slows down?

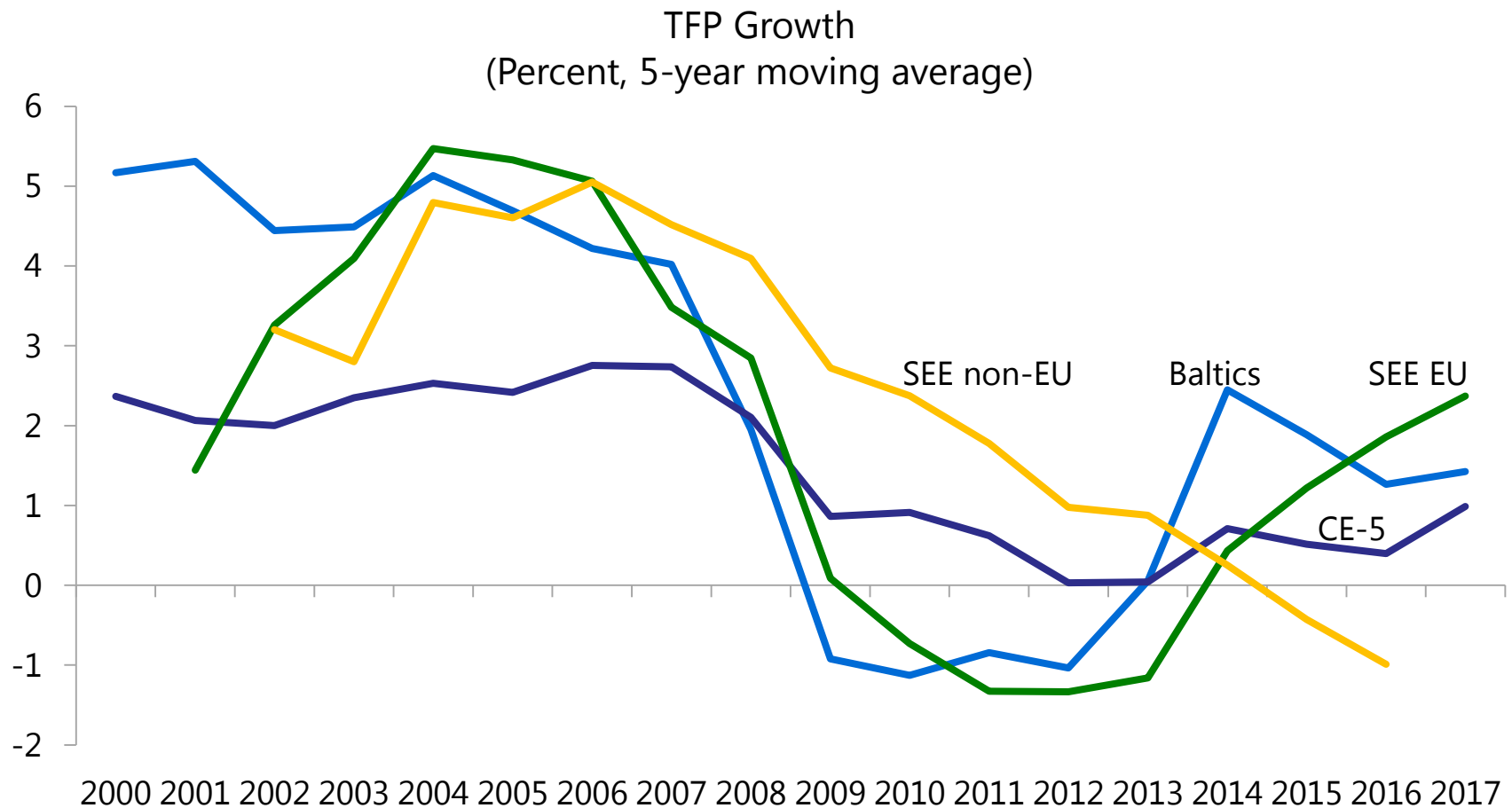


- Lower GDP growth
- If investment rate unchanged, capital-output ratio will rise and return on capital will drop
- Investment will likely fall in response to drop in returns, which will further reduce GDP growth (in the short term)
- So we would expect both lower growth and lower investment
- This is precisely what happened.

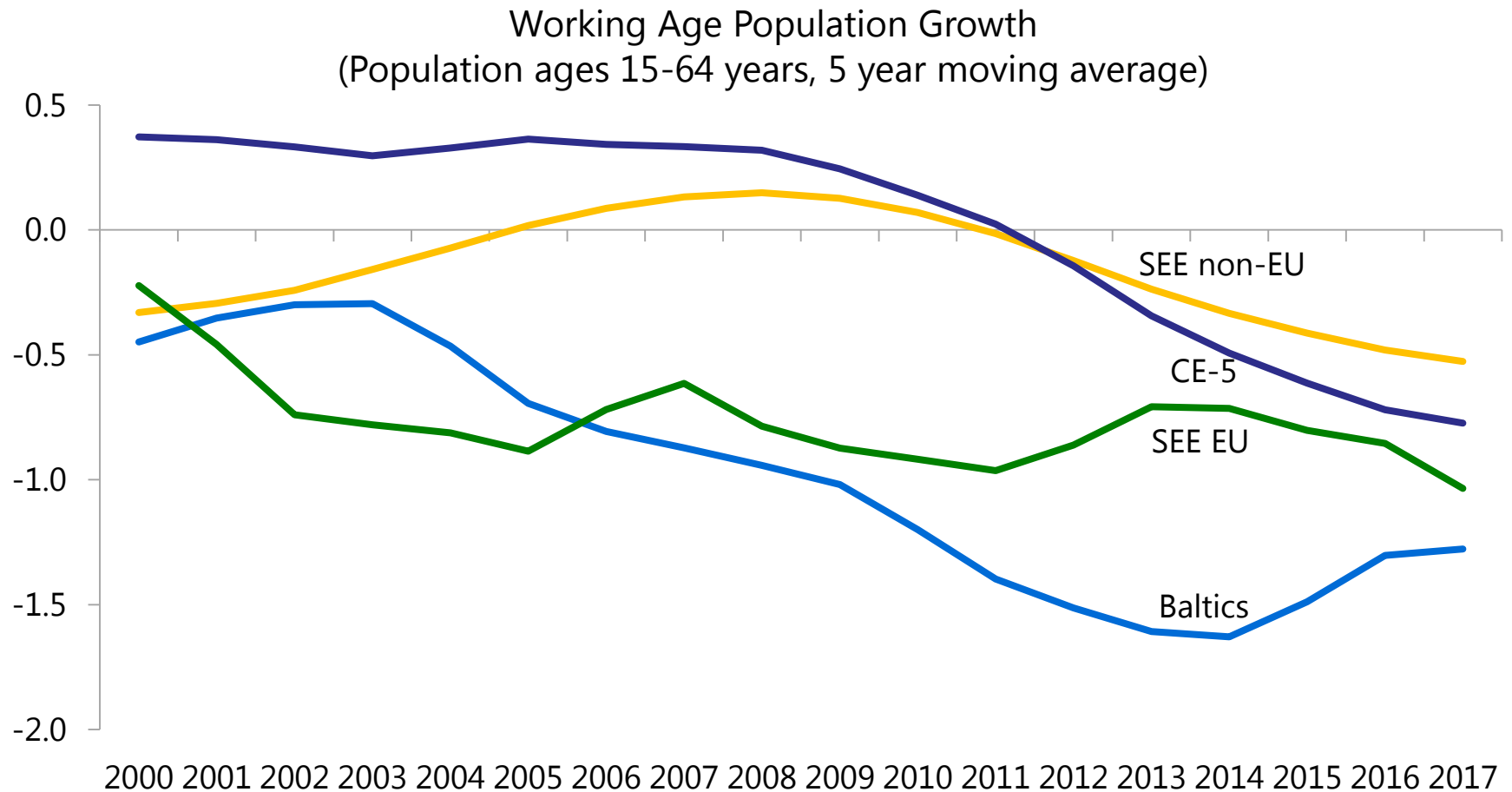
$n+g$ has slowed down



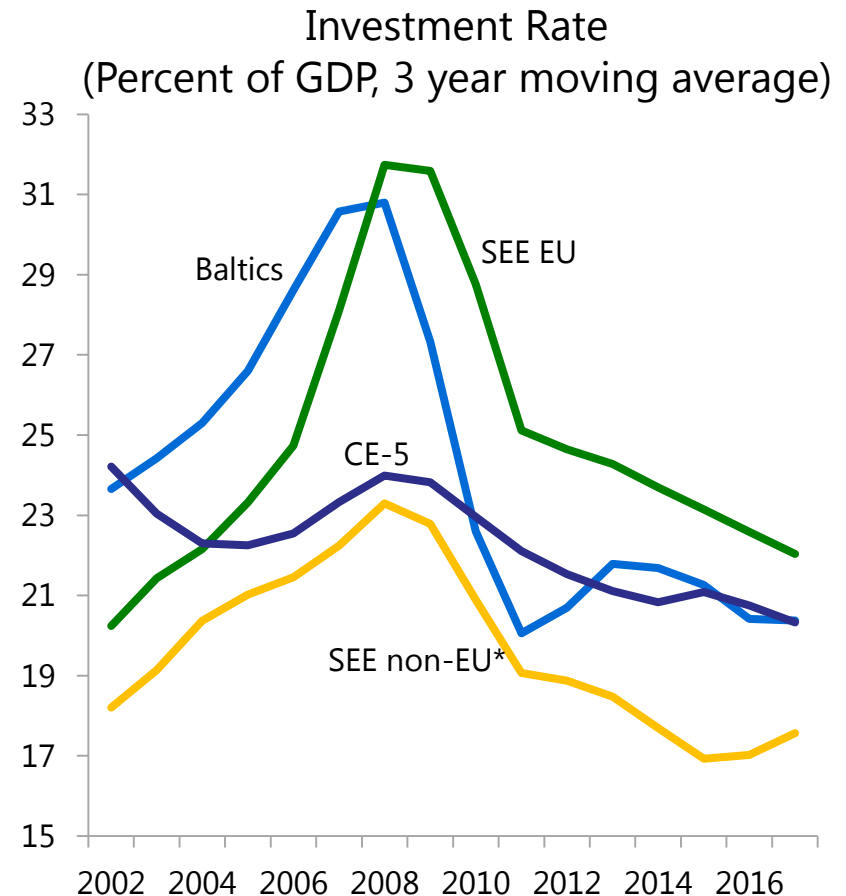
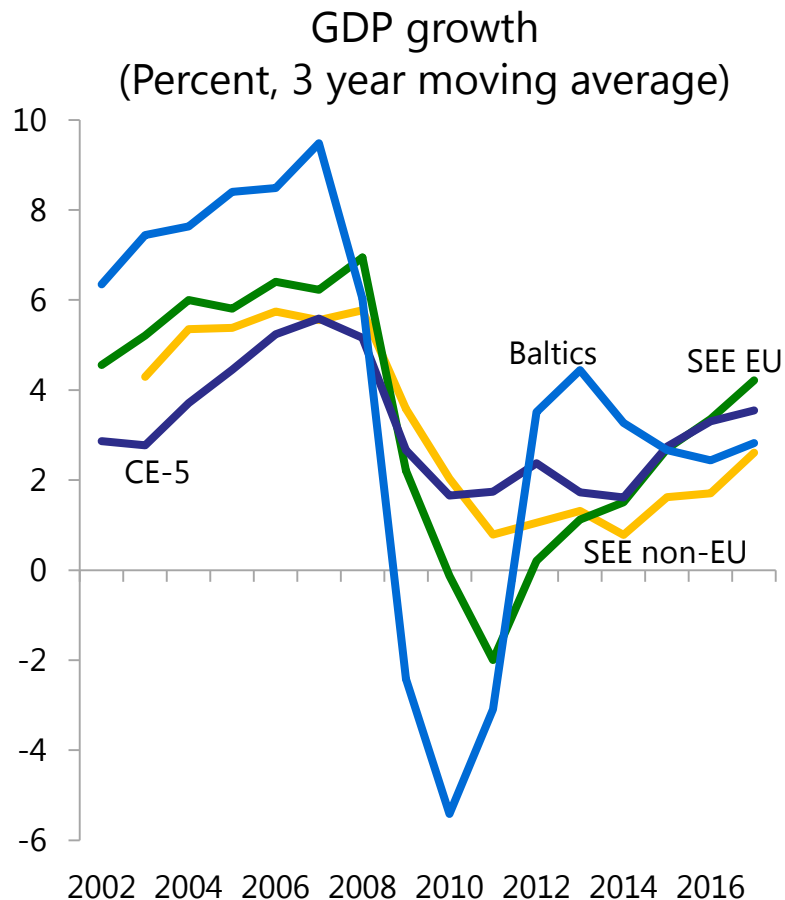
Much of this reflects lower TFP growth



But working age population growth has come down as well

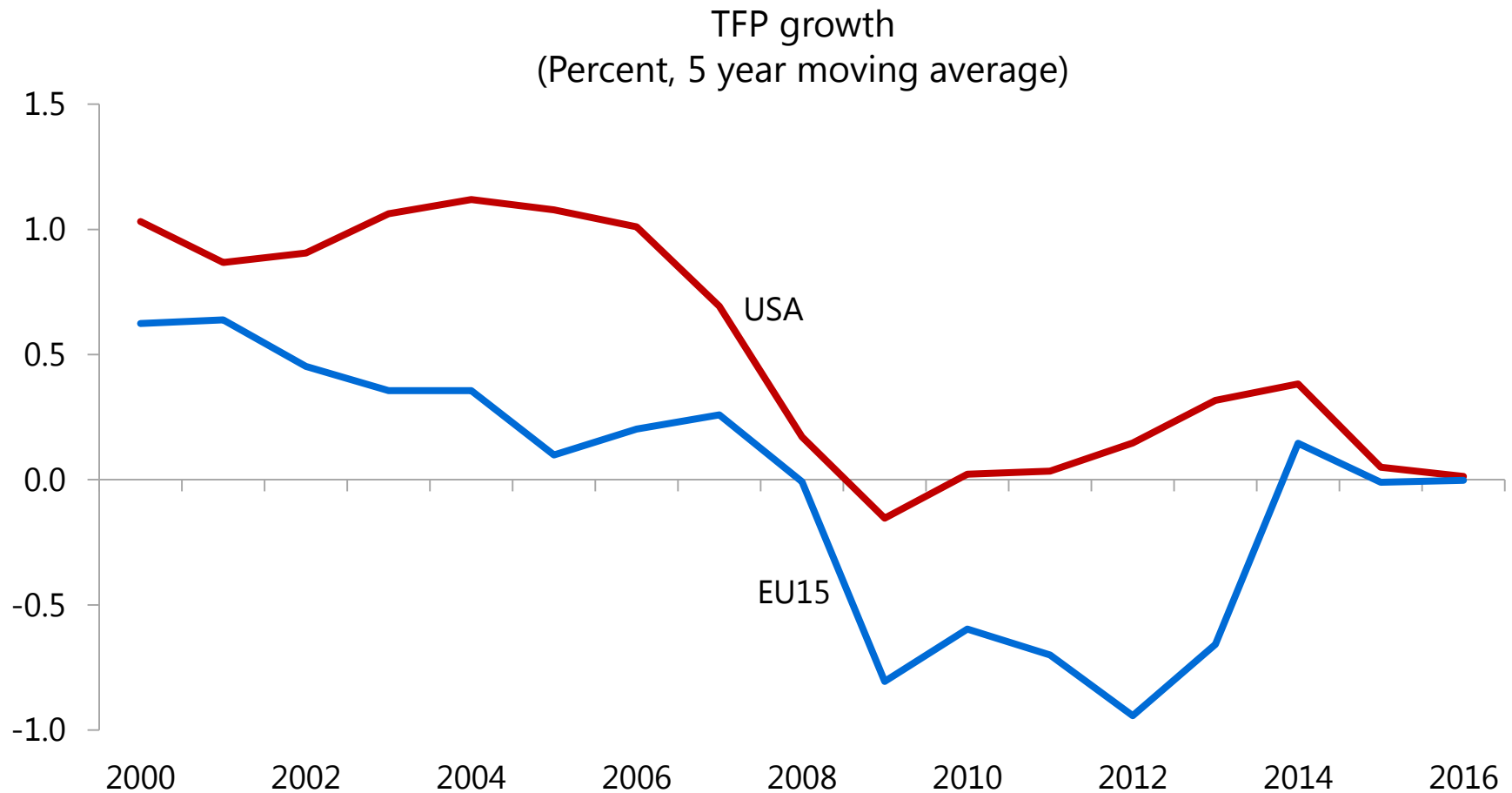


Output growth has slowed and investment rates are lower

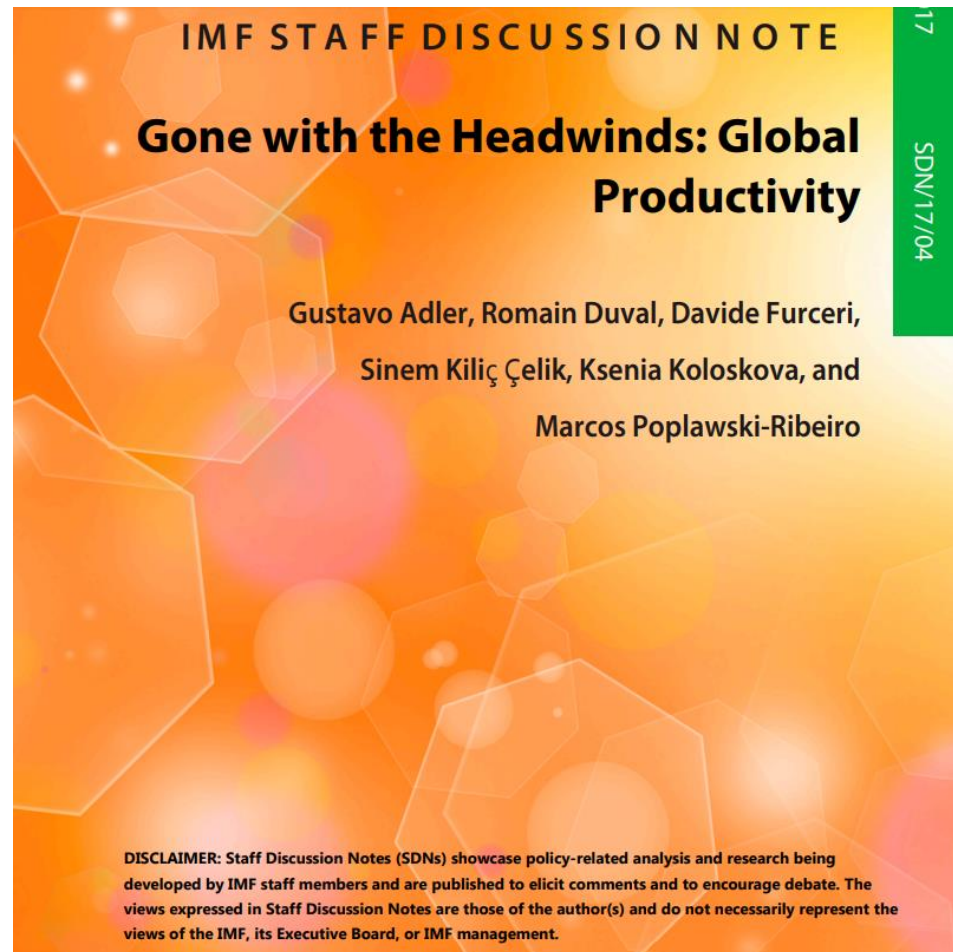


*Excl. MKD

Fall in TFP is a global problem



Why has global TFP growth slowed?



Several interrelated factors have played a role



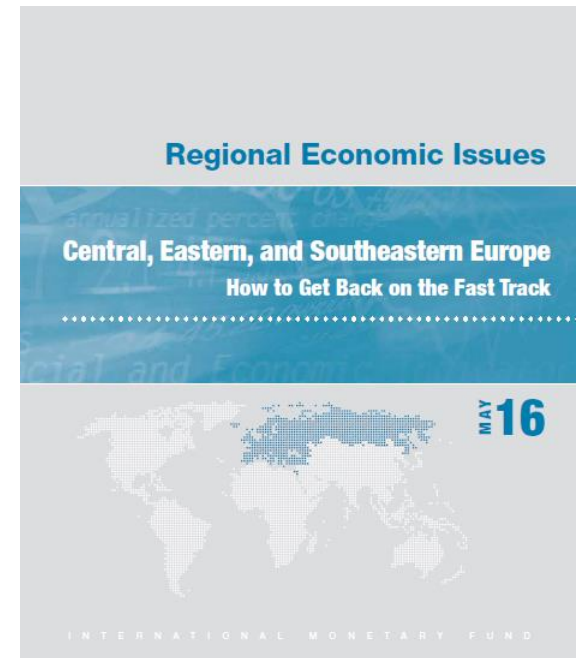
- Measurement issues may have played a role, but most of TFP slowdown seems genuine
- Weak corporate balance sheets, combined with tight credit conditions, have undermined TFP growth, partly by constraining investment in intangible assets in distressed firms.
- An adverse feedback loop of weak aggregate demand, investment, and capital-embodied technological change seems to have afflicted the advanced economies.
- Elevated economic and policy uncertainty may have further weakened TFP growth, partly by tilting investment away from higher-risk, higher-return projects.

What can be done to boost TFP growth



Address several problems

- Limited access to financial services (e.g. for SMEs)
- Infrastructural gaps
- Inefficient legal systems and other government services

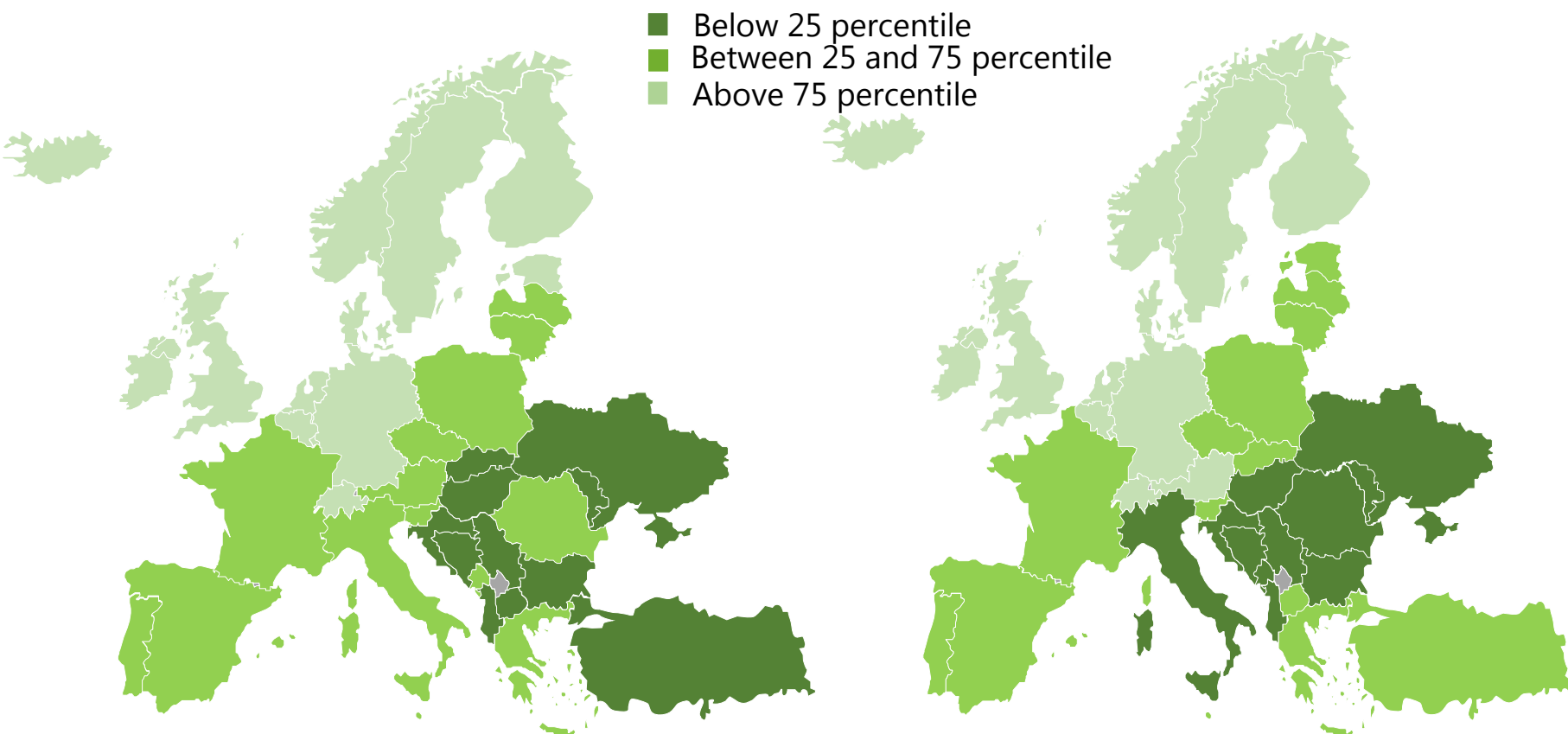


Improve institutions, especially judiciary



Judicial Independence, 2015

Impartial Courts, 2015



Source: World Economic Forum. Note: Worldwide distribution excluding LICs

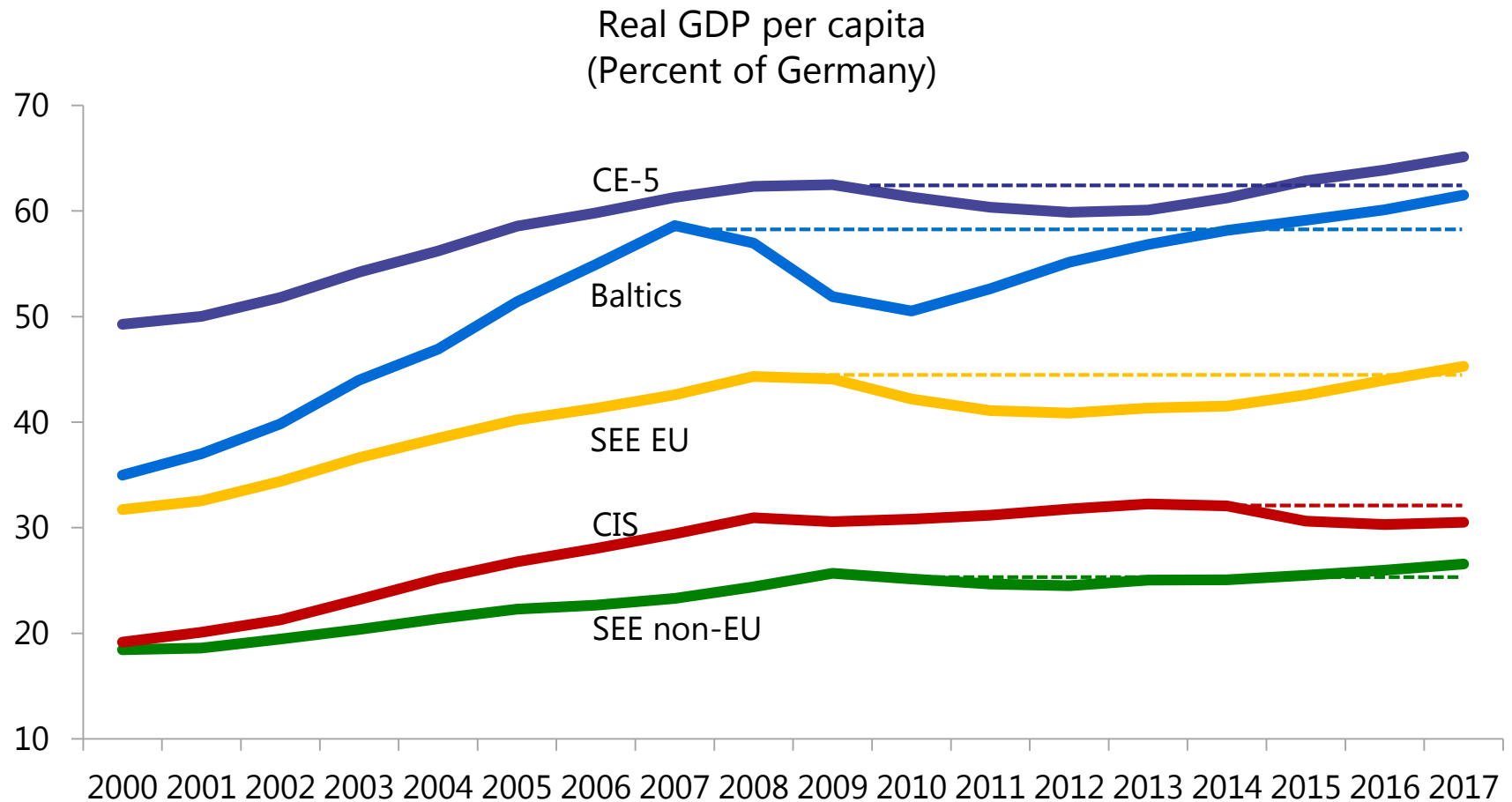
Institutional reforms provide large efficiency gains



- Better institutions hold the promise of retaining emigration of skilled workers
- Effective protection of property rights provides stronger incentives for investment
- Institutions affect innovation and productivity through enhanced trust, cooperation, commitment, and contract enforcement



TFP matters, because CESEE is still poorer than Western Europe

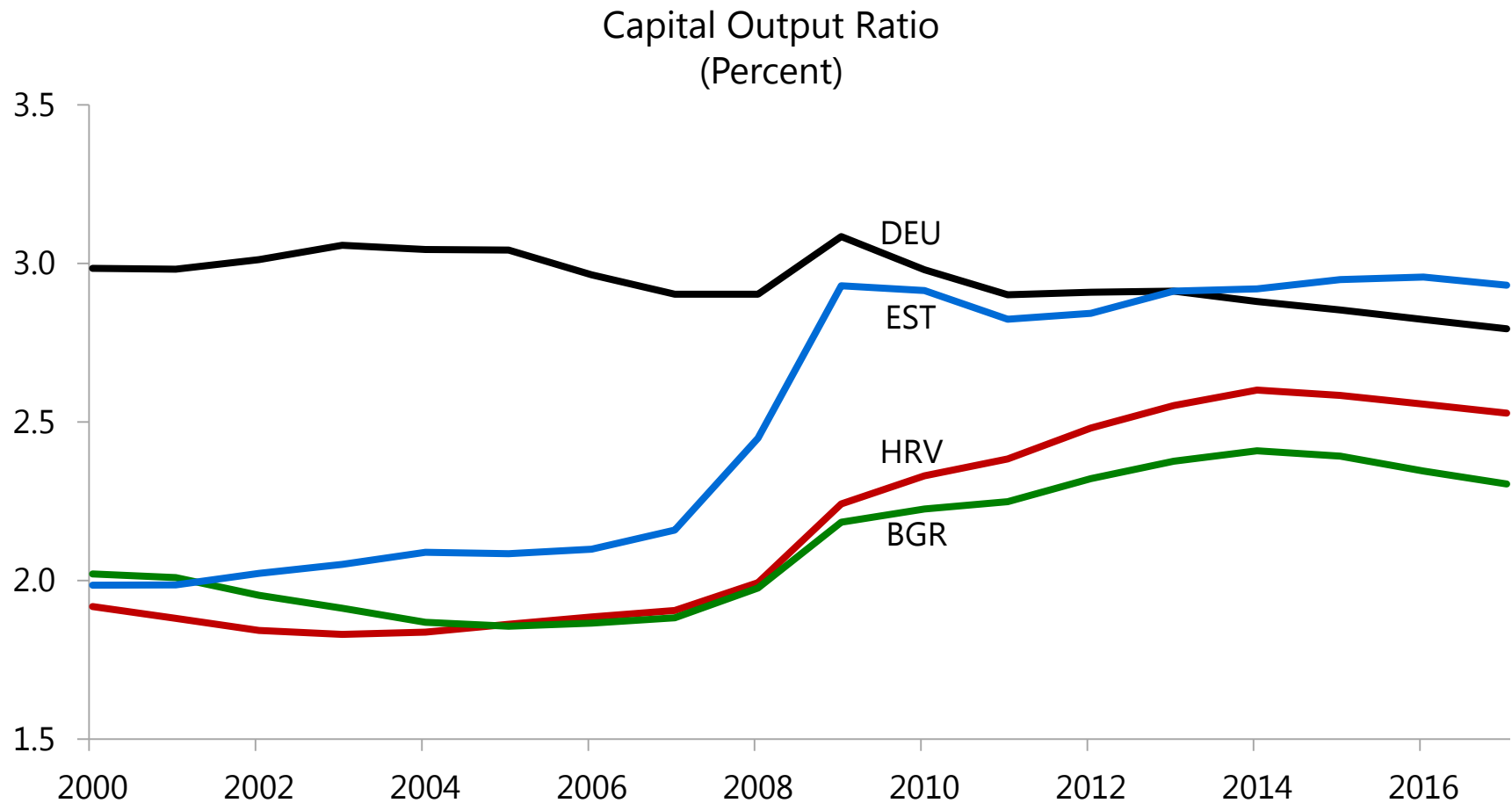


Continued convergence will necessitate faster TFP growth



- Faster TFP growth will not only raise GDP growth directly; it also increases the return on investment
- Increasing capital/labor without higher TFP will boost capital output ratio and lower return on capital

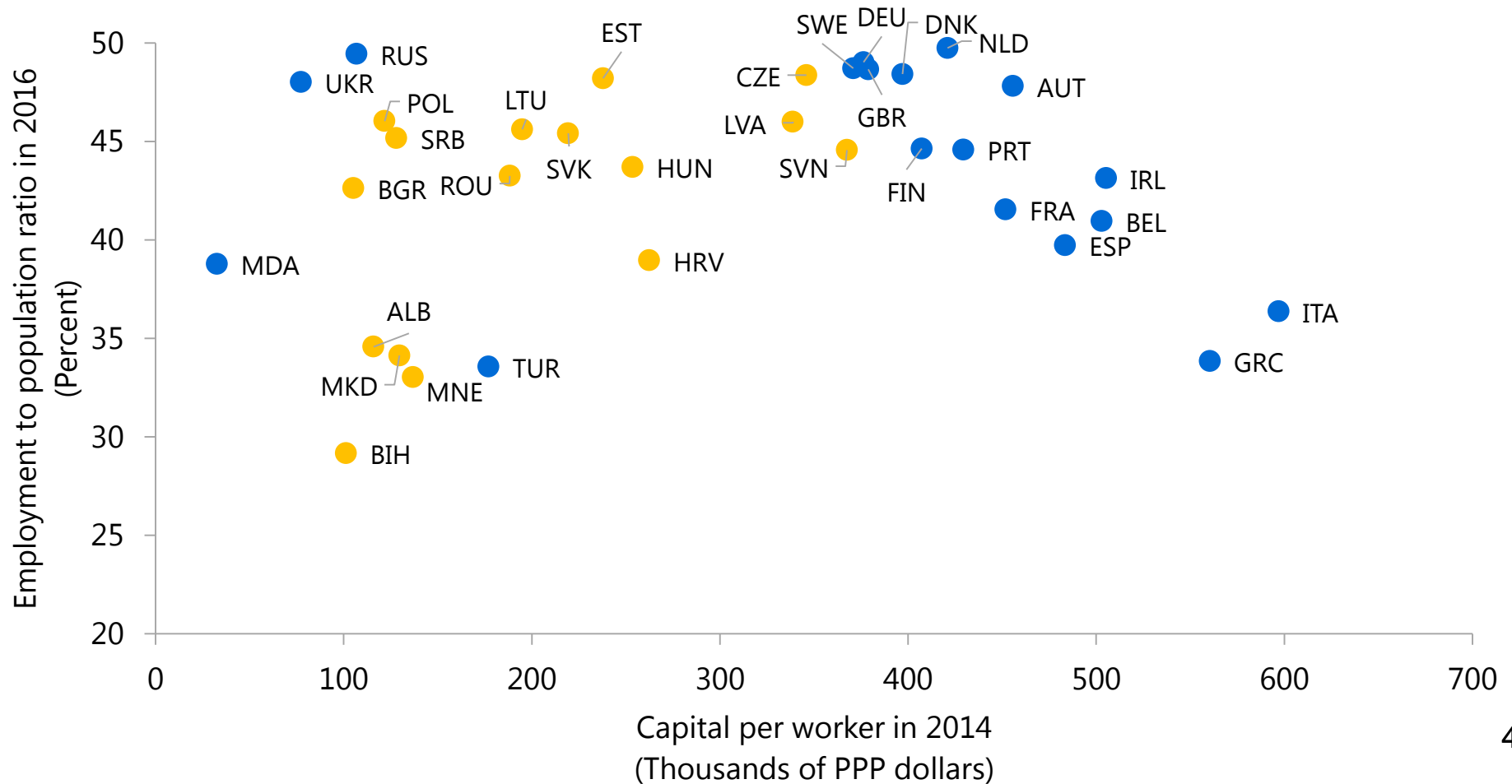
Capital-output ratios in many CESEE countries are no longer low compared with Western Europe



Even though capital per worker is still low.



Capital per Worker vs. Employment to Population Ratio



Concluding thoughts



- CESEE has done very nicely in recent years with strong growth and rapidly declining unemployment
- The challenge will be to continue this rapid growth
- Labor markets have tightened, and are likely to tighten further if strong growth continues
- If TFP growth does not pick up, growth cannot continue at this pace



Thank you



Supplemental slides

Solow-Swan rehash



Output depends on the capital stock, employment, and labor-augmenting technological progress:

$$Y(t) = K(t)^\alpha (A(t)L(t))^{1-\alpha}$$

The labor force grows at rate n :

$$L(t) = L(0)e^{nt}$$

The rate of technological progress is g :

$$A(t) = A(0)e^{gt}$$

The capital stock is determined by investment minus depreciation:

$$\dot{K}(t) = sY(t) - \delta K(t)$$

Long-run equilibrium



Long-Run Equilibrium Path

$$\frac{dY}{Y} = n + g$$

The growth rate of capital is:

$$\frac{dK}{K} = n + g$$

The capital output ratio is:

$$\frac{K}{Y} = \frac{s}{n + g + \delta}$$

The return on capital is:

$$r = \frac{\alpha Y}{K} = \frac{\alpha (n + g + \delta)}{s}$$

Labor augmenting technological progress can be deduced from TFP growth



In the Solow-Swan framework we have:

$$Y(t) = K(t)^\alpha (e^{gt} L(t))^{1-\alpha}$$

Taking logs and differentiating we get:

$$\frac{dY}{Y} = \alpha \frac{dK}{K} + (1 - \alpha) \frac{dL}{L} + (1 - \alpha)g$$

Total factor productivity growth is typically derived as:

$$g_{TFP} = \frac{dY}{Y} - \alpha \frac{dK}{K} - (1 - \alpha) \frac{dL}{L}$$

It follows that:

$$g = \frac{g_{TFP}}{1 - \alpha}$$

Raising K/L without raising TFP will lead to decline in return on capital



- $Y(t) = K(t)^\alpha (A(t)L(t))^{1-\alpha}$
- Return on capital depends on capital output ratio
 - $r = \alpha \frac{K}{Y}$
- Capital output ratio depends on capital labor ratio and TFP
 - $\frac{K}{Y} = \left(\frac{K}{L}\right)^\alpha * \frac{1}{A}$
- Low K/L does not necessarily mean low $K/Y \rightarrow$ it can also mean low TFP