Drivers of Growth

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Long-term Growth and Convergence Process of the Czech Republic towards the EU

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- Czech economy in the long term – is it a laggard?
- Convergence of per capita GDP
- Possible explanations (including focus on the monetary policy)
- Labour market – hours worked and labour force education
- Conclusions

GDP growth in Central Europe…

	GDP growth 1995-2012	GDP growth 1995-2008 (pre-crisis)	GDP growth 2009 -2012 (post-crisis)
EU 15	1.6	2.3	-0.4
Czech Republic	2.6	3.5	-0.4
Germany	1.3	1.6	0.6
Hungary	2.0	3.1	-1.5
Austria	2.0	2.5	0.4
Poland	4.3	4.7	3.0
Slovakia	4.1	5.1	1.0

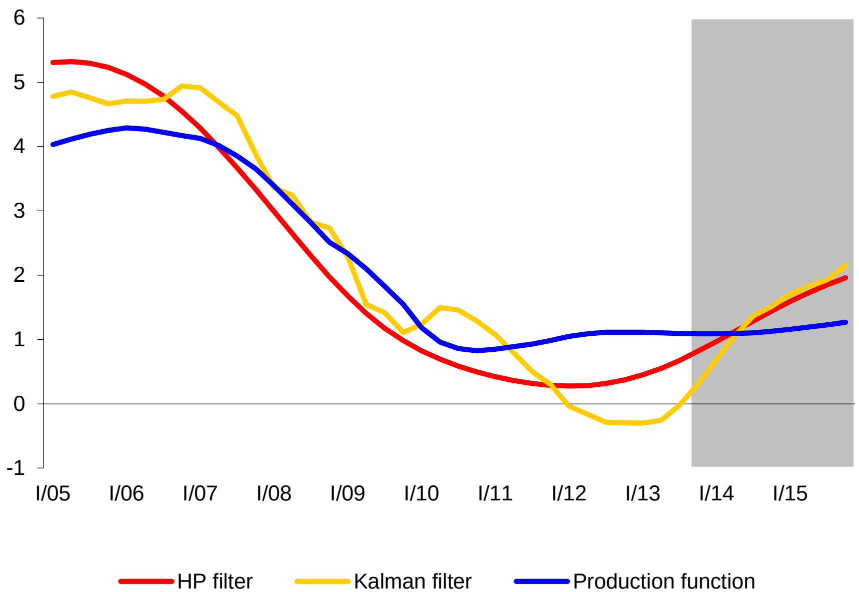
…and after adjusting for the business cycle

	GDP Potential 1996-2012	GDP Potential 1996-2008	GDP Potential 2009 -2012
EU 15	1.6	1.9	0.9
Czech Republic	2.8	3.3	1.6
Germany	1.3	1.4	1.1
Hungary	2.1	2.7	0.2
Austria	2.0	2.2	1.7
Poland	4.0	4.3	3.2
Slovakia	4.2	4.6	3.3

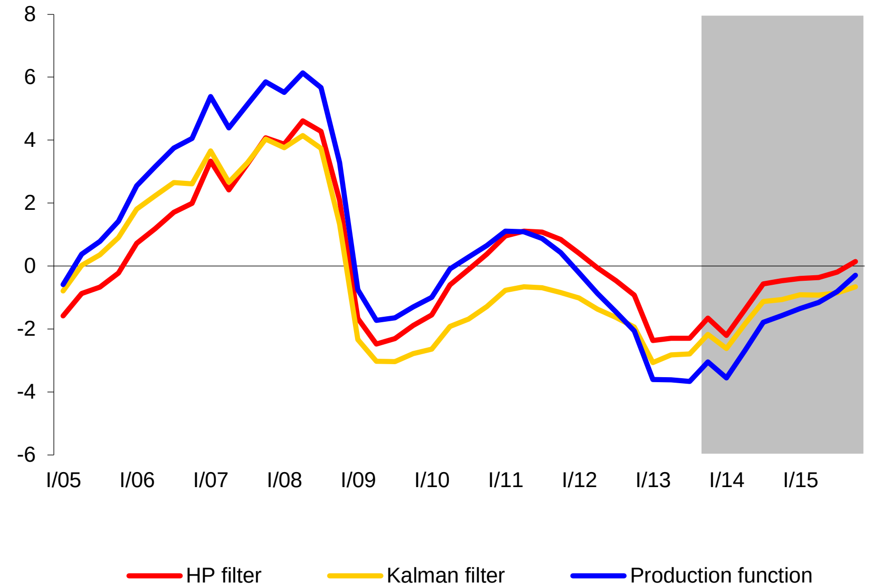
- The Czech growth was higher but convergence was very slow
- The impact of last recession was rather strong for the Czech Republic
- Even after adjusting for the business cycle, the Czech Republic lags (in terms of growth) behind Poland and Slovakia

Source: OECD

Potential output (%, y-o-y)



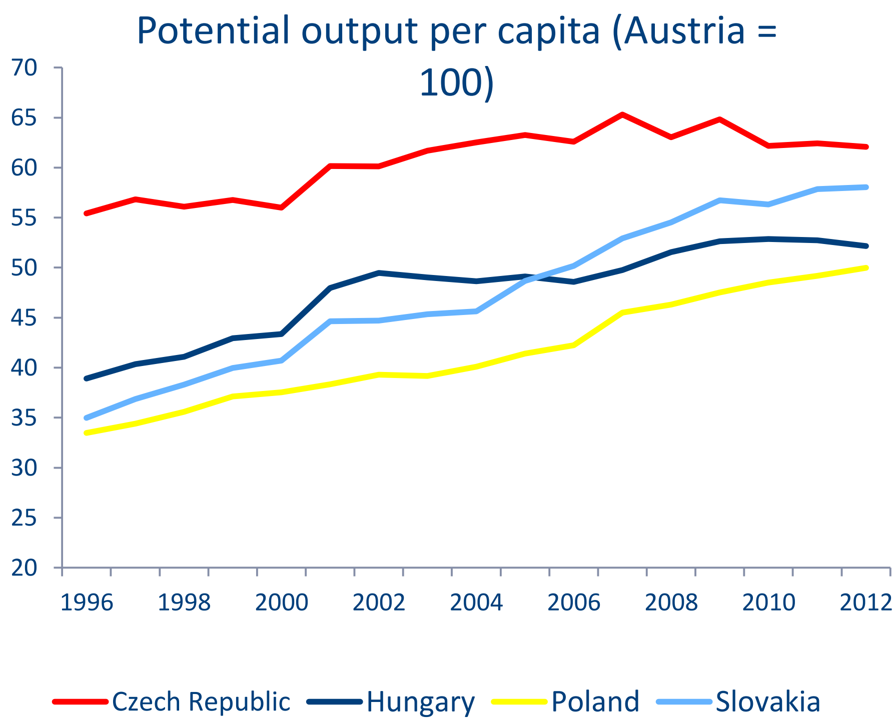
Output gap (%, y-o-y)



- Growth of the potential output was reduced more in the crisis period (approx. down to a half) than in Poland or Slovakia but still remains higher than in EU15
- Partially due to a drop of fixed capital formation in the crisis period (in 2012 still 14 % below the 2008 peak)
- Estimates of the output gap currently range from -3.6 % to -2.2 %

Source: CNB

- In theory (Solow's model of growth), the pace of convergence depends inversely on the initial position
- Similar economies should erase roughly the same ratio of the remaining gap, BUT reality shows a different development - see figures in the table below
- Slow convergence of the Czech Republic can be explained only partially by its initial position – only 15 % of the gap to Austria has been eliminated since 1996



Total reduction of a gap in per capita potential output in relation to Austria

	1996-2012	1996-2008
Czech Republic	**15%**	**17%**
Hungary	22%	21%
Poland	25%	19%
Slovakia	35%	30%

Source: OECD

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Are there any problems with the supply side of the economy?

Why is convergence so slow in the Czech Republic?

Candidate explanations:

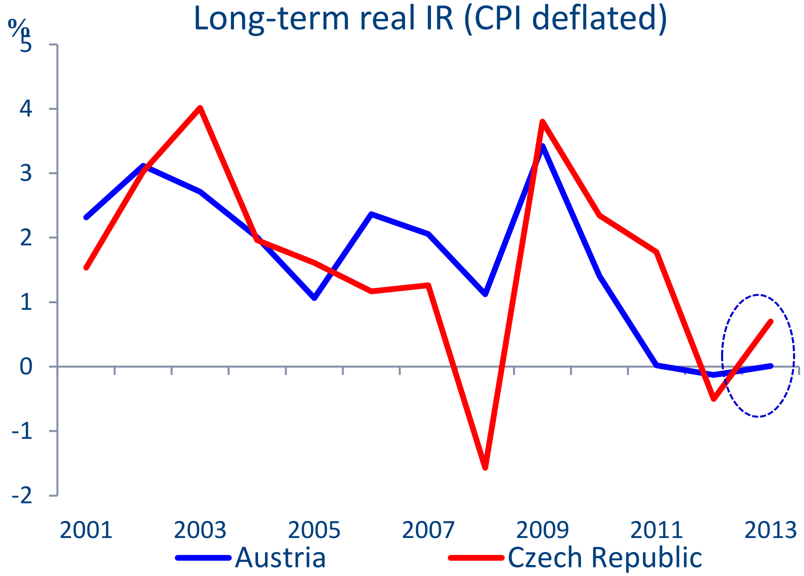
- Financial conditions and monetary policy
- Fiscal influences (tax system, fiscal policy, etc.)
- Rate of investment and relative price of capital goods
- Demography and long-term changes in the labour market

Negative influences of monetary and financial conditions in the long term according to theory:

- High variability and unpredictability of inflation (***BUT*** *the CNB operates under inflation targeting, inflation is predictable!*)
- Strong fluctuations of real interest rates (***BUT*** *the CNB anchors expectations and inflation, that minimize the fluctuations of real variables!*)
- High variability of nominal and real exchange rates (***BUT*** *the CNB has never abandoned managed float to help to stabilize volatility of nominal variables – including exchange rate and inflation, if it is necessary*)
- Serious and long-term dysfunctions of the banking system

None of the above was the case for the Czech Republic

Financial and Monetary Conditions as a Break for Growth? (2)



	Variability of CPI inflation (%, std. d., 1995 -2013)	Variability of nominal exchange rate (%, std. d., 1995-2013 or euro-entry)
Austria	0,8	1,7
Czech Republic	**3,1**	**4,5**
Germany	0,6	2,3
Hungary	7,0	8,6
Poland	7,1	8,9
Slovak Republic	3,1	7,1

- Real long-term interest rates similar to Austria
- Inflation, nominal and real exchange rates have been the most stable in the V4 countries
- Possible increase of real interest rate in recent years with negative impact on recovery

OECD Economic Outlook Vol. 2013/2, November 2013:

“Monetary policy should remain accommodative as inflation is low”

Source: OECD

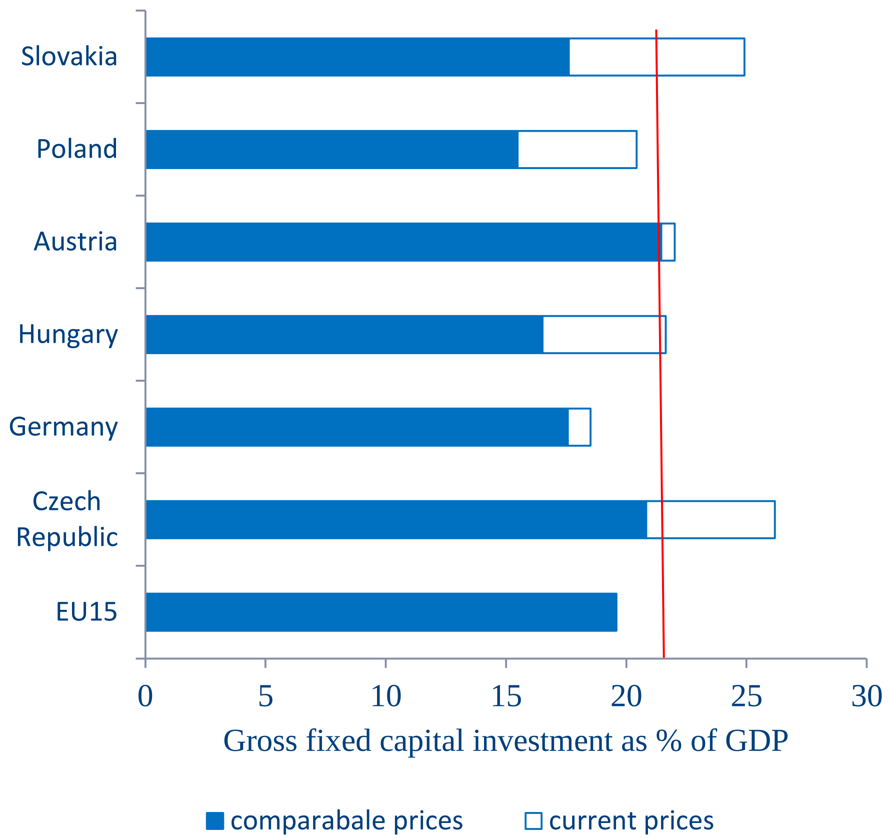
Possible negative influences of fiscal policy:

- Procyclicality
- Relatively low use of EU funds in comparison with other transition countries
- Efficiency of public procurement

Gross fixed capital formation by general government (in % GDP)	1995-2011	2011
Austria	**1,5**	**1,0**
Bulgaria	3,9	3,4
Czech Republic	**4,2**	**3,7**
Denmark	1,9	2,2
Hungary	3,2	3,1
Italy	2,3	2,0
Poland	4,3	5,7
Slovakia	2,8	2,3
United Kingdom	1,7	2,2

Source: EUROSTAT

Rate of investment (average 2000-2012)



Rate of investment does not explain the lagging, in the V4 the Czech rate is highest

BUT

Relative price of capital goods is high in CZ and SVK, in CZ especially due to high weight of industry

In comparable prices the investment rates are LOWER than in Austria

It can explain only a fraction of the deviation from neo-classical growth model; it does not explain lagging of CZ behind other CEE

Source: EUROSTAT

Demographic Explanation – Employment and Hours Worked

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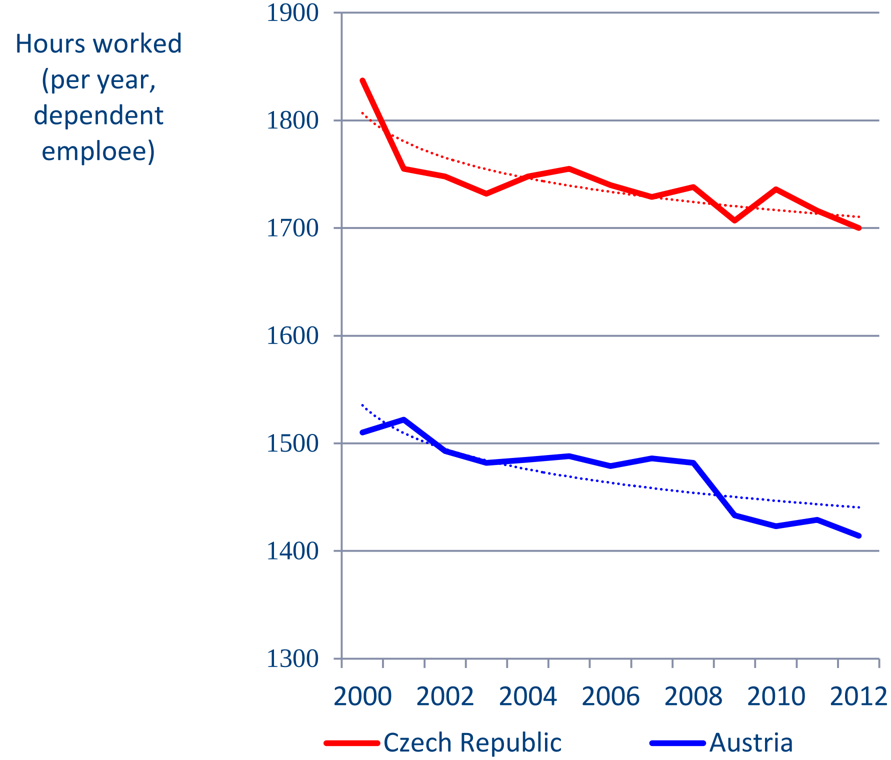
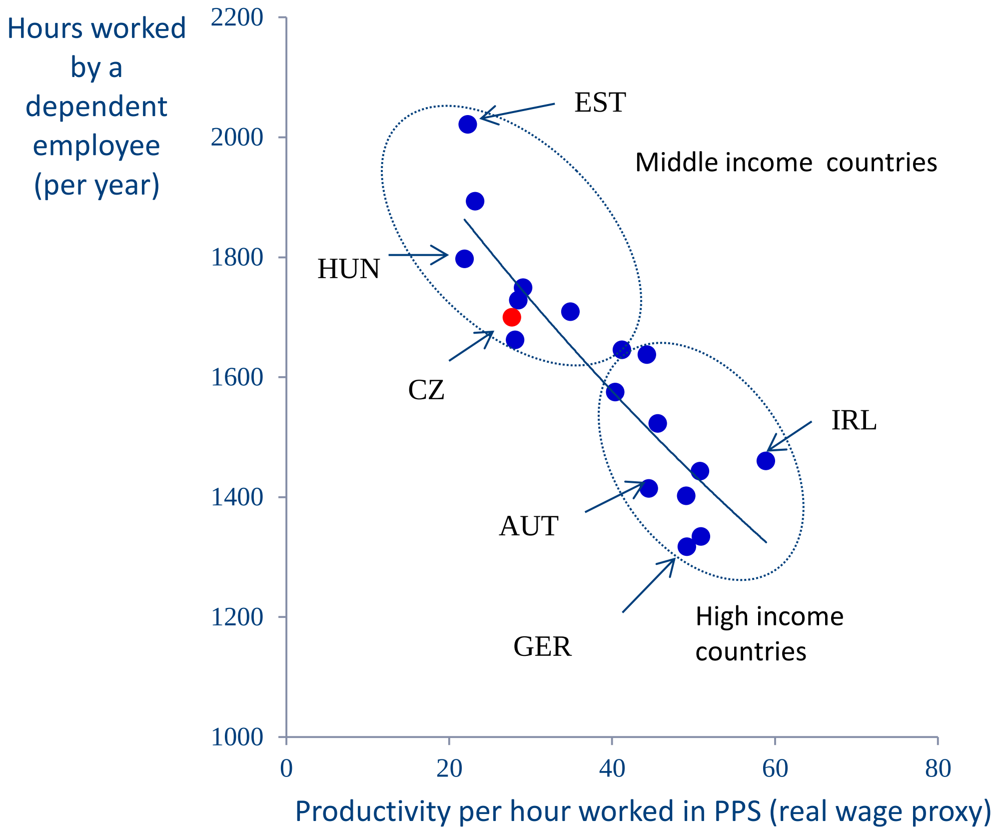
Change in total employment in % 1995-2012

EU15	15,8
Czech Republic	**-1,5**
Germany	12,1
Hungary	5,4
Austria	13,3
Poland	4,4
Slovakia	7,5



- Employment in the Czech Republic declined
- Active population will stagnate or decline in future
- Number of hours worked gradually declined

Source: OECD and EUROSTAT



- Number of hours worked per worker higher than in Austria or Germany in line with the long-term supply of labour BUT it declines
- <u>Further decline of hours worked in future, policy will not make much difference – a drag on per capita growth that we must be prepared for</u>

Source: OECD

Country	Output per hour in 2012 (PPS dollars)	Year when productivity was comparable to Czech productivity in 2012
Austria	44,5	n.a.
Belgium	50,8	1976
Czech Republic	**27,7**	**-**
France	49,1	1980
Germany	**49,2**	**1980**
Hungary	21,9	-
Italy	37,1	1983
Japan	35,8	1995
Korea	26,2	comparable
Poland	23,2	-
Slovak Republic	29,1	2010
Spain	41,2	1983
Sweden	44,3	1985
United Kingdom	42,3	1991
United States	56,2	1970 (!)

- Current productivity per hour in the Czech Republic approx. corresponds to productivity in W. Germany in 1980 or in the US in 1970 (!)
- Growth of productivity (output per hour worked) is the key for future convergence

Source: OECD

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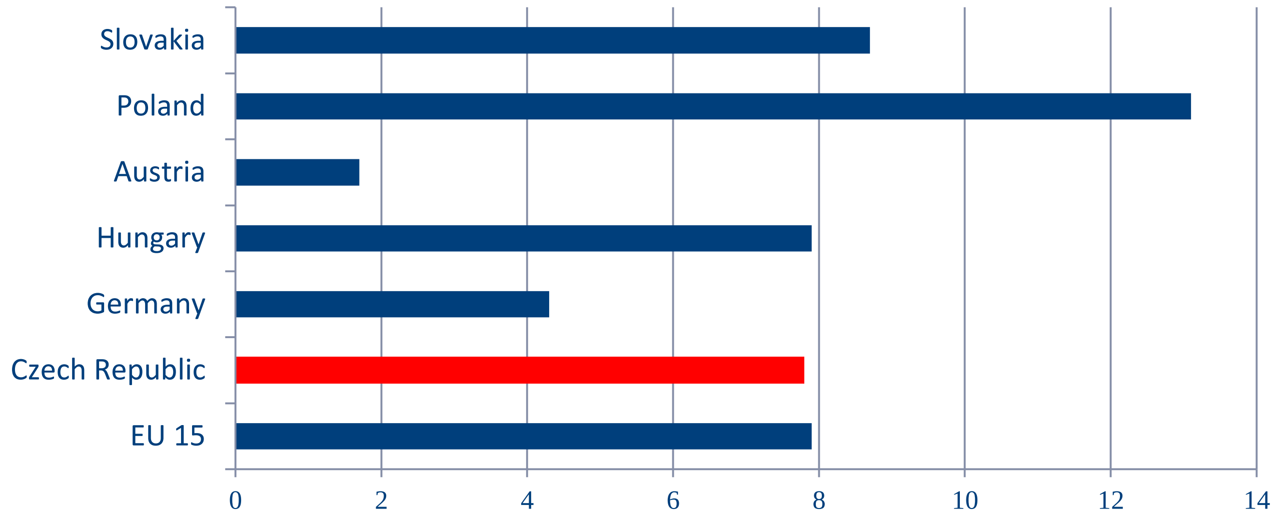
How to promote productivity?

Change in the percentage of people aged 25-64 with tertiary education (2000-2012)



- The educational attainment in the V4 is already comaparable to Austria or even higher (!)
- Growth of education attainment will continue but should it be further accelerated?
- Structure and quality of secondary and tertiary education is more important (not more education, but better education)

Source: EUROSTAT

The slow pace of real convergence of the Czech economy is not due to any fundamental flaw in Czech monetary, fiscal or other policies. It can be explained by a complex of factors:

- Initial position
- Relative price of capital goods
- Demographic changes and reduction in the number of hours worked

Monetary policy aiming at stable inflation rate promotes long-term growth by supporting stability of the business environment.

Thank you for your attention.

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