Czech Republic

Issues Related to Long-run Growth

Jan Švejnar
Vilem Semerak

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Outline

1. Caveat emptor
2. Economic theory and long run growth
3. Stylized facts on Czech growth
4. Determinants of Czech performance
5. Growth policies: options
Analysis of LR Convergence: Caveat Emptor

- Available data imperfect
  - New member states -- sizeable, possibly fluctuating unofficial sector
  - Growth accounting depends on one’s ability to measure
    - Capital – issue of valuation
    - Labor – cross-country variation in reliability of data on hours worked
- LR convergence depends on sustainable real appreciation -- linked to qualitative changes in output
  - Statisticians – problem with enumerate contributions of qualitative changes
Theory: Convergence or Divergence?

- Solow (1956) model – conditional (β) convergence a probable outcome
  - Sufficient for government not to commit major errors – Czech Republic should converge to the EU levels “automatically”
    - As a richer country among the NMS it can have lower relative rates of growth than the poorer ones

- In practice
  - Original convergence tests perhaps too simple
  - Newer (endogenous) growth models allow for richer combinations of results
Economic Theory and Growth: Institutions Matter

- Mancur Olson (1996):
  - “... large differences in per capita income across countries cannot be explained by differences in access to the world’s stock of productive knowledge or to its capital markets, by differences in the ratio of population to land or natural resources, or by differences in the quality of marketable human capital or personal culture.

  - The only remaining plausible explanation is that the great differences in the wealth of nations are mainly due to differences in the quality of their institutions and economic policies.”
Easterly & Levine (2001): It is not factor accumulation!

- The “residual” (TFP) rather than the factor accumulation accounts for most of the income and growth differences across countries.
- Economic activity is highly concentrated, with all factors of production flowing to the richest areas.
- National policies are closely associated with long-run economic growth rates.
New Economic Geography (NEG)

- Czech case -- specific character of achieved integration of factor and output markets?
- NEG (Fujita, Krugman, Venables) perspective
  - Elimination of trade barriers and barriers to mobility changes motivation for location of industries
    - Small initial differences enhanced by cumulative causation
  - Models allow for extreme differentiation (center-periphery pattern)
  - Country plagued in the short run by inefficient policies – may be forever locked in at a lower level of growth
Krugman – Differentiation in the Racetrack NEG Model with 12 Regions
Visegrad v. Austria: Historical Trends

Table 15. Historical comparison with Austria

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>(Austria’s GDP per capita = 100)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>62%</td>
<td>60%</td>
<td>91%</td>
<td>94%</td>
<td>58%</td>
<td>54%</td>
<td>43%</td>
</tr>
<tr>
<td>Hungary</td>
<td>59%</td>
<td>61%</td>
<td>81%</td>
<td>67%</td>
<td>46%</td>
<td>42%</td>
<td>36%</td>
</tr>
<tr>
<td>Poland</td>
<td>51%</td>
<td>50%</td>
<td>61%</td>
<td>66%</td>
<td>42%</td>
<td>35%</td>
<td>36%</td>
</tr>
</tbody>
</table>

*Note:* Czechoslovakia in 2000 is weighted average of the Czech and Slovak Republics.

*Source:* Calculated from the OECD database accompanying Maddison (2003).
Empirical Data: Czech Convergence to Austria
Austria = 100 in every of the years

- GNI per capita, PPP (current international $)
- GDP per person employed (constant 1990 PPP $)
- GDP per capita, PPP (current international $)
Which measure of Output?

- Czech performance is better with measures based on GDP (not too surprising for a net recipient of FDI)

- However, measures based on GNP/GNI may be more relevant for convergence of standards of living
How Rapid Convergence: Czech Rep. v. Austria? 
Example Based on GNI p.c.

<table>
<thead>
<tr>
<th>Period</th>
<th>Initial Level (Austria = 100)</th>
<th>Total Reduction of the Gap (in perc. points)</th>
<th>How Many Years Needed to Catch up with Austria?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993 - 2012</td>
<td>55.5</td>
<td>1.47</td>
<td>428</td>
</tr>
<tr>
<td>2002 – 2007</td>
<td>56.2</td>
<td>6.55</td>
<td>26</td>
</tr>
<tr>
<td>2007 - 2012</td>
<td>62.8</td>
<td>-5.81</td>
<td>∞</td>
</tr>
</tbody>
</table>

- Question #1: Did the Czech Republic do something better during 2002-2007?
- Question #2: How good was 2002-2007 in comparison with other NMS?
Even the performance during 2002-2007 was only sufficient for 8th position among the CEE NMS.

Note: the calculations are approximate: based on World Bank data on the Euro Area.
Czech Growth Data: Stylized Facts (1)

- Czech Republic displays many prerequisites for fast growth
  - High rate of savings (#1 among NMS)
  - Relatively high inflow of capital (#2 among NMS)
  - Educated labor force
  - Relative macroeconomic stability
  - Good geographic location + proximity to a reliable growth engine and role model (Germany)
  - Liberalized foreign trade
  - Healthy and stable banking sector (at least since 2000s)
  - Minor problems with deleveraging and private sector debt
  - Social stability
  - Infrastructure not worse than in other NMS
  - In spite of gradual decline, still among top 3 CEE in competitiveness (IMD WCY)
Average Rate of Savings 1995-2011
Gross domestic savings (% of GDP)

Source of data: WDI database
Role of Savings: Probably not Too Important

Average growth 1995-2012

Average Rate of Savings 1995-2011

Source of data: WDI database
FDI Stock per Capita (EUR) in 2012

Source: WIIW Handbook 2013
Average R&D Expenditures 2005-2011
Research and development expenditure (% of GDP)

Source of data: WDI database

* Data for 2005-2010
** Data for 2005-2007
Czech Growth Data: Stylized Facts (2)

- Czech Rep. seems to have what is needed to grow fast
- But Czech growth in terms of real GDP is lackluster
  - Better performance than many EU countries (including those in the fabled Nordic model), but
  - Slow growth of both actual and potential output
  - Financial crisis not responsible for the difference in performance
Average Rate of Real GDP Growth 1995-2012

Source of data: WDI database
Direct Contribution of the Financial Crisis
Maximum decline of quarterly GDP (fixed prices, seas. adjusted) compared to average quarter of 2008

<table>
<thead>
<tr>
<th>Country</th>
<th>Trough</th>
<th>Reached in</th>
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</thead>
<tbody>
<tr>
<td>Poland</td>
<td>0.0</td>
<td>n.a.</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>-4.1</td>
<td>2009Q2</td>
</tr>
<tr>
<td>Slovakia</td>
<td>-5.0</td>
<td>2009Q1</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>-6.1</td>
<td>2009Q4</td>
</tr>
<tr>
<td>Croatia</td>
<td>-7.2</td>
<td>2011Q1</td>
</tr>
<tr>
<td>Romania</td>
<td>-7.4</td>
<td>2010Q3</td>
</tr>
<tr>
<td>Hungary</td>
<td>-8.4</td>
<td>2009Q3</td>
</tr>
<tr>
<td>Slovenia</td>
<td>-8.4</td>
<td>2009Q2</td>
</tr>
<tr>
<td>Lithuania</td>
<td>-16.6</td>
<td>2009Q4</td>
</tr>
<tr>
<td>Estonia</td>
<td>-17.8</td>
<td>2009Q3</td>
</tr>
<tr>
<td>Latvia</td>
<td>-23.3</td>
<td>2009Q3</td>
</tr>
</tbody>
</table>

Source: own calculations based on Eurostat data
Effects of the Financial Crisis and Subsequent Recovery

2012 GDP per capita in constant LCU (2007 = 100)

Source of data: WDI database
Czech Growth Data: Stylized Facts (3)

- Relative performance better once take into account long run appreciation of Czech currency
  - But primarily for GDP
  - **Real convergence** performance in GNI (p.c., PPP) is about the worst among the NMS over the 1995-2012 period
Average Rate of Growth of GDP per Capita in USD
Annual average for 1995-2012

Source of data: WDI database
Determinants of Czech Performance

- Are there problems in the following areas?
  - Efficiency of allocation in factor markets and product markets
    - Problems with inefficient public sector, corruption, possibly corporate governance in local firms
  - Investment into R&D and innovations
    - Can Czech R. be more sensitive to low investment into R&D than poorer new member countries?
  - Value system and motivation
- Dependence on Western Europe does not explain lower growth rates achieved in the past
  - Czech products as inputs into German exports
Is it the Corruption?

Source: EU Anti-Corruption Report 2014
Czechia: Competitiveness Map 2013 (IMD)
Or Value System and Motivation Factors?

**IMD: Does the Value System in Your Society support Competitiveness?**

Source: IMD Competitiveness Yearbook, 2013
Can we Explain the Performance by Labor Markets?

- Availability of labor not a constraint
  - Job related migration between Czech Republic, Poland, Slovakia and other countries
    - Supplements Czech “overheated” labor market in 2006-2007
  - Lack of growth after 2009 more similar to a traditional demand-driven recession with excess capacities
    - Data on dynamics of employment (inflows and outflows, new jobs) -- labor market not a constraint
Growth Policies for the Czech Republic?

- Likely ingredients for faster growth:
  1. Improve efficiency of decision-making in public sector and use of public funds
  2. Increase attractiveness for foreign and domestic investors – especially for sophisticated products and services
    1. Simplify tax system and reduce taxes on labor
    2. Improve quality of education and R&D
    3. Invest in transportation infrastructure
  3. Focus on values and motivation?
How to achieve this?

- Fight against corruption
- Efficiency and quality of implementation of public policies
- Focus on education: not just educational attainments but also values
- Business-friendly regulation of immigration
- Adoption of Euro?
Thanks for Your Attention!
References

- OECD: Economic Survey of the Czech Republic
- Worldbank World Development Indicators Database