

Skills, Innovation and TFP growth

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Markets, skills, and productivity growth

Globalisation and technological progress result in job polarization

- Investment in skills is crucial not only for productivity growth
... but also for political sustainability of globalisation and growth
- But how do we know which skills to invest in?
 - How to avoid “skills mismatch”?
... and inefficient use of skills?
- Need market incentives to guide skills acquisition

What are the EBRD/CESEE-specific issues?

- "Innovation-light" growth and slowdown in TFP growth
- The urgent need to restart productivity growth
- Key role of openness
 - Industries' integration in global economy results in TFP convergence
... and job creation



Growth requires skills rather than education years

Quality rather than quantity of education matters for growth

	Average annual GDP per capita growth rate, 1960-2000		
Cognitive skills		2.02*** (10.7)	1.98*** (9.1)
Years of schooling	0.37*** (3.2)		0.026 (0.3)
Initial GDP per capita	-0.38*** (4.2)	-0.29*** (9.2)	-0.30*** (5.5)
No. of countries	50	50	50
Adj. R2	0.252	0.733	0.728

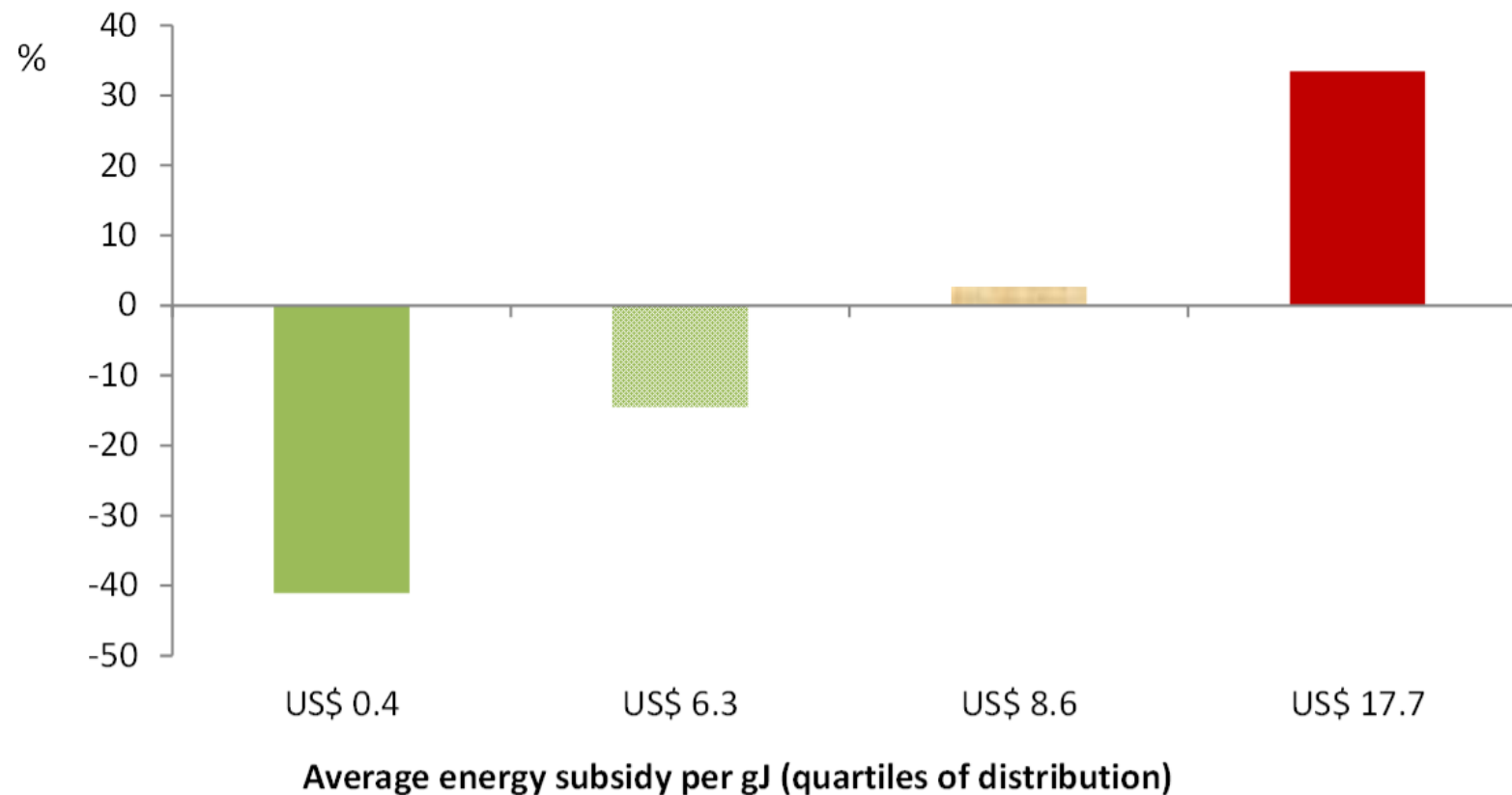
Source: Hanushek and Woessman (2012). t-stats in parentheses



Distorted incentives result in inefficient use of skills

Example: When energy subsidies are high, better-managed firms are *more* energy intensive

Change in energy use in response to better management practices

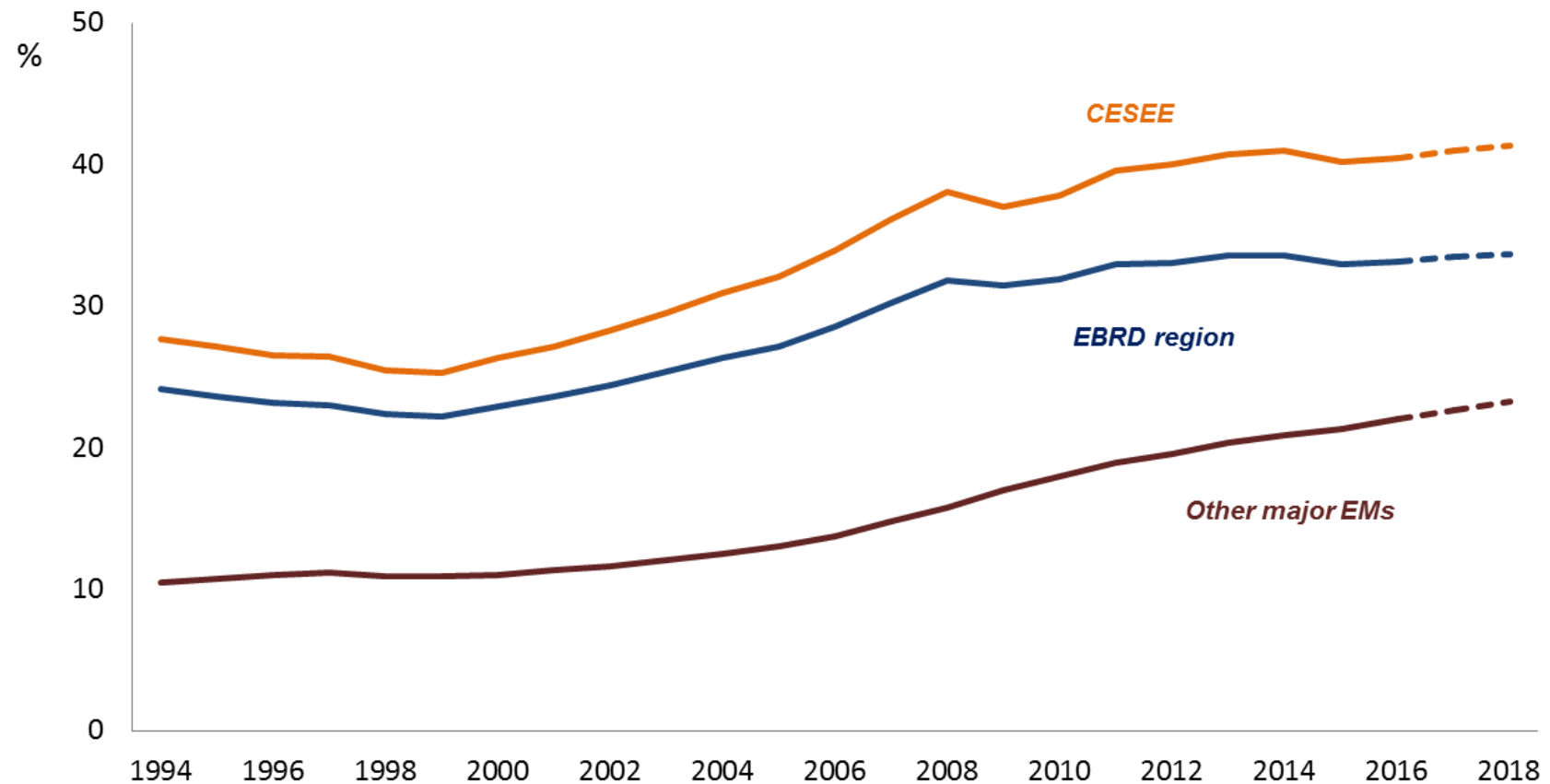


Sources: IMF, BEEPS V, MENA ES and authors' calculations. Solid bars = significant at the 10% level.



Post-crisis slowdown in convergence in EBRD countries

Average GDP per capita at PPP, in % of US



Sources: IMF and authors' calculations. Weighted by population.

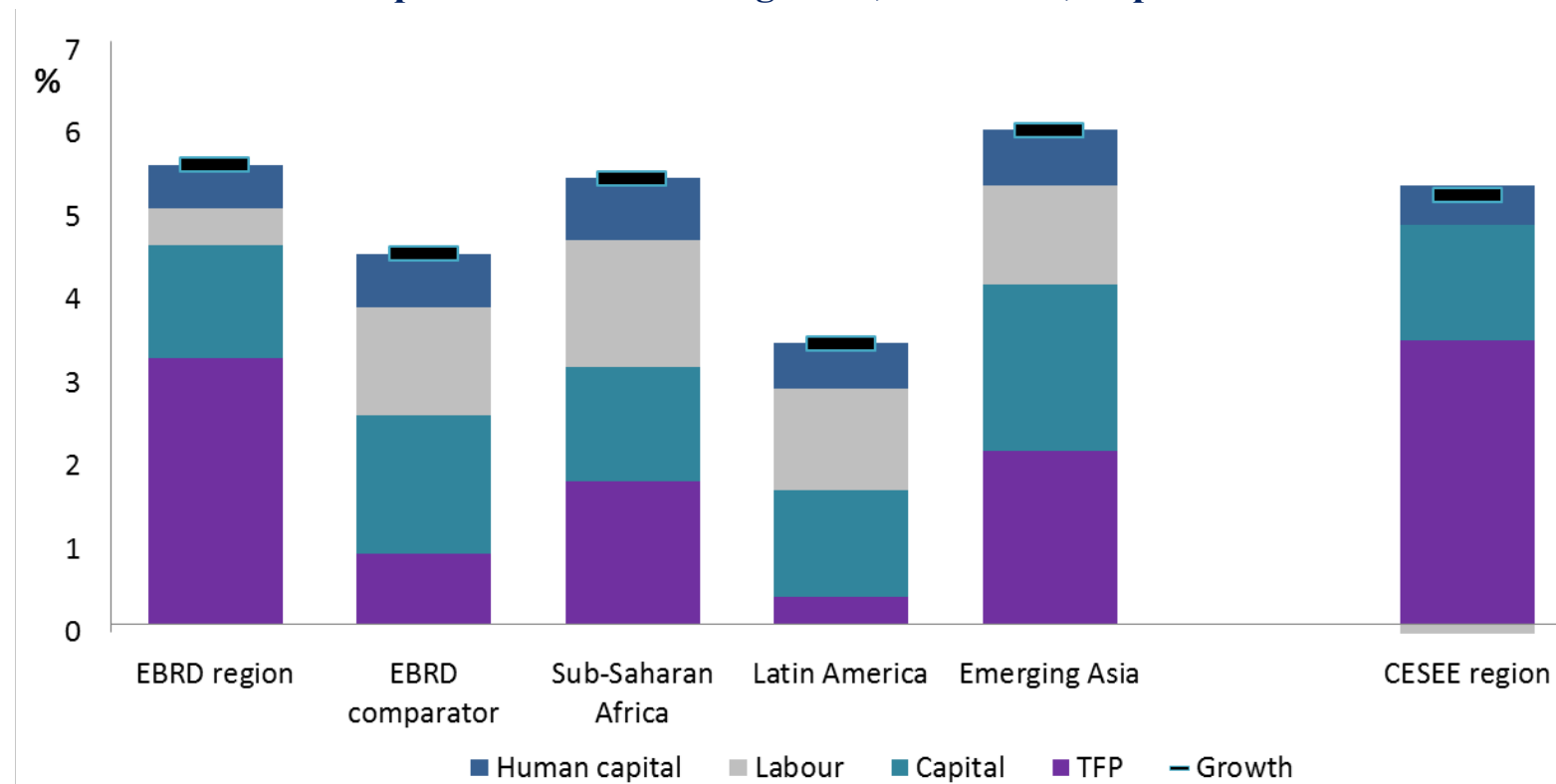


Growth in 1998-2008 driven by total factor productivity which supported fast income convergence

High levels of education, urbanisation and industrial development but factors of production had been combined inefficiently under central planning

Market reforms helped to improve efficiency of factor use, boost productivity and close TFP gap

Decomposition of sources of growth, 1998-2008, % per annum



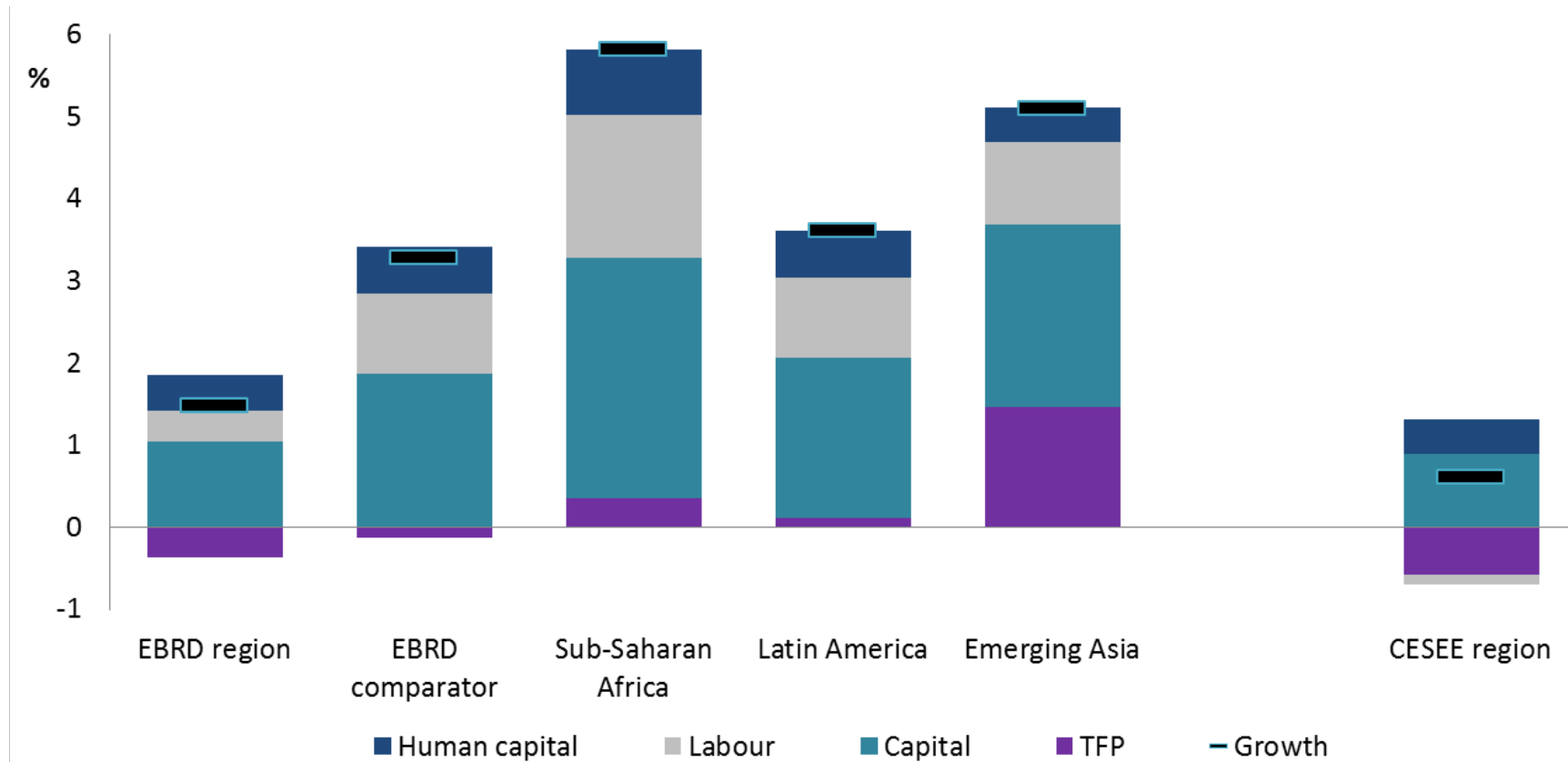
Sources: Penn World Tables, IMF, World Bank and authors' calculations.



Growth since 2009 driven by capital accumulation; TFP growth slow

TFP slowdown also in (small) part reflects lower capacity utilisation (limited data)
Growth now driven by capital accumulation (as in most EMs)

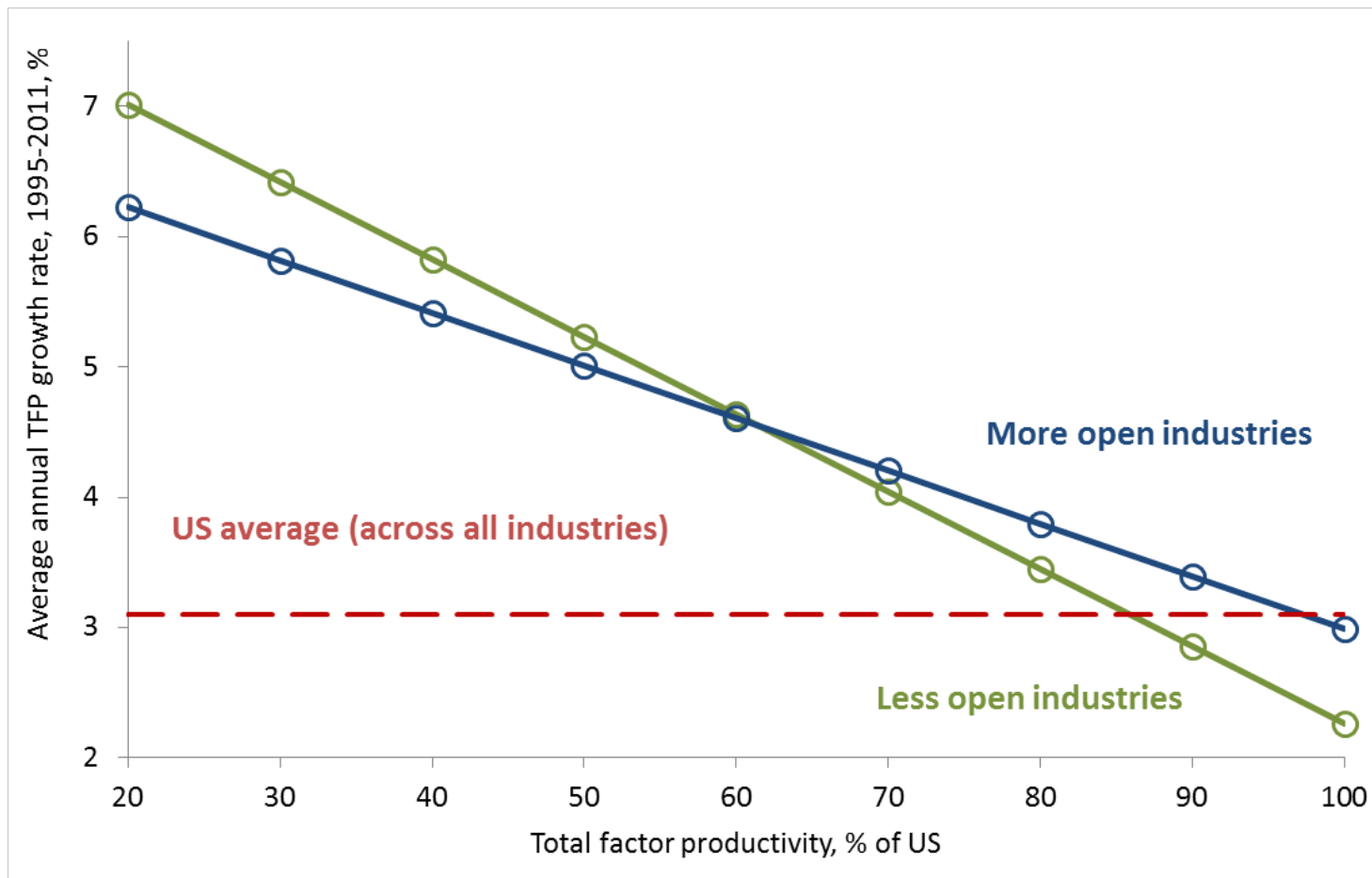
Decomposition of sources of growth, 2008-14, % per annum



Sources: Penn World Tables, IMF, World Bank and authors' calculations.

Greater trade openness helps avoiding the slowdown in productivity convergence

Average annual TFP growth, 1995-2011, depending on initial TFP

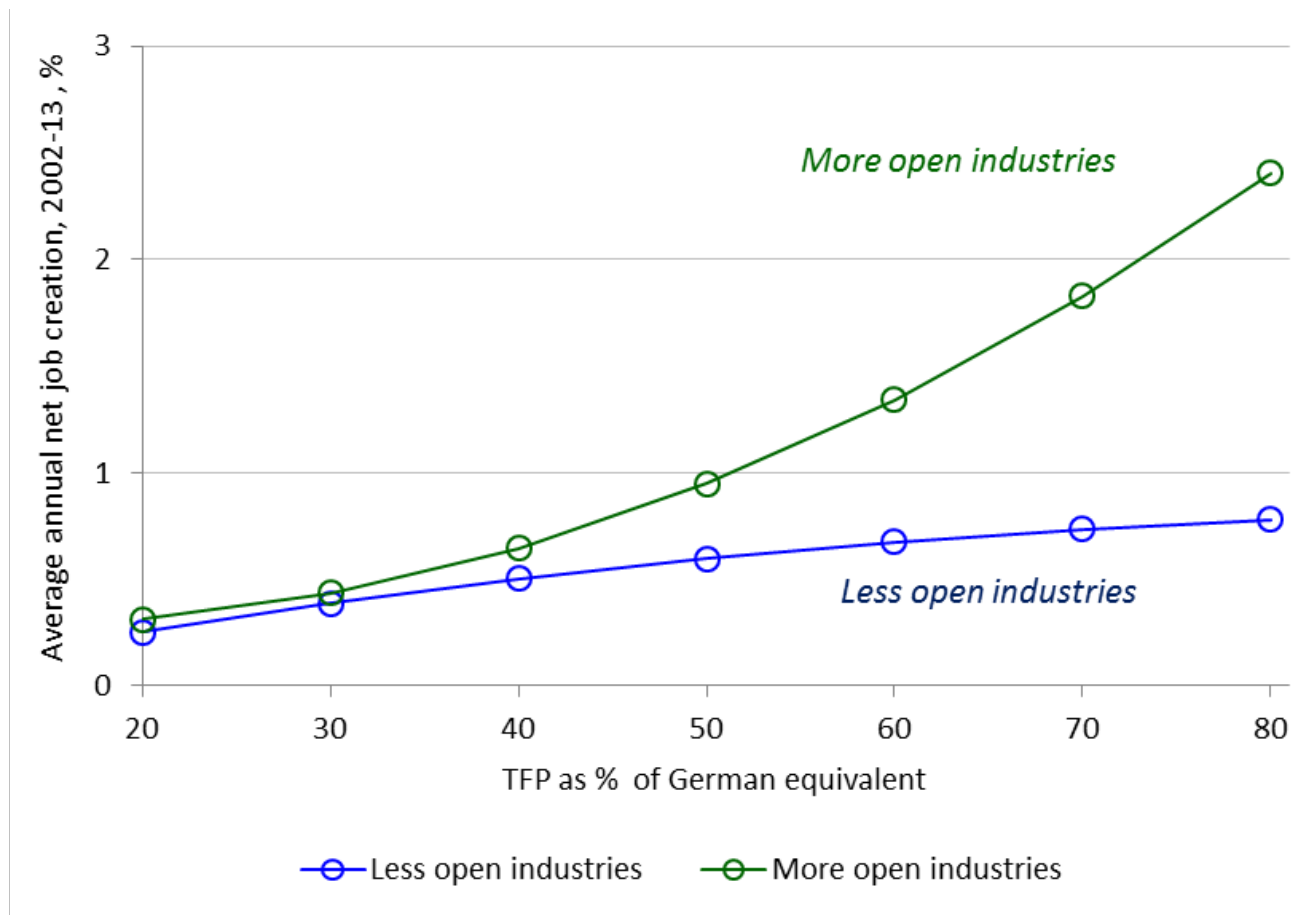


Sources: WIOD. “Less open” = exports + imports < 10% of output; “more open” > 110%



Openness to trade help to relocate jobs to more productive industries

Average annual job creation, 2002-2013, depending on initial TFP



Sources: CompNet. Regressions control for country, industry and year fixed effects.



Concluding remarks

Investment in skills is key for inclusive growth in advanced economies and middle-income countries

- **But need to provide market incentives for skills' acquisition and application**

In EBRD's (middle-income) countries, integration into global economy helps TFP growth

- **Globalisation brings productivity growth and creates jobs**



Background slides

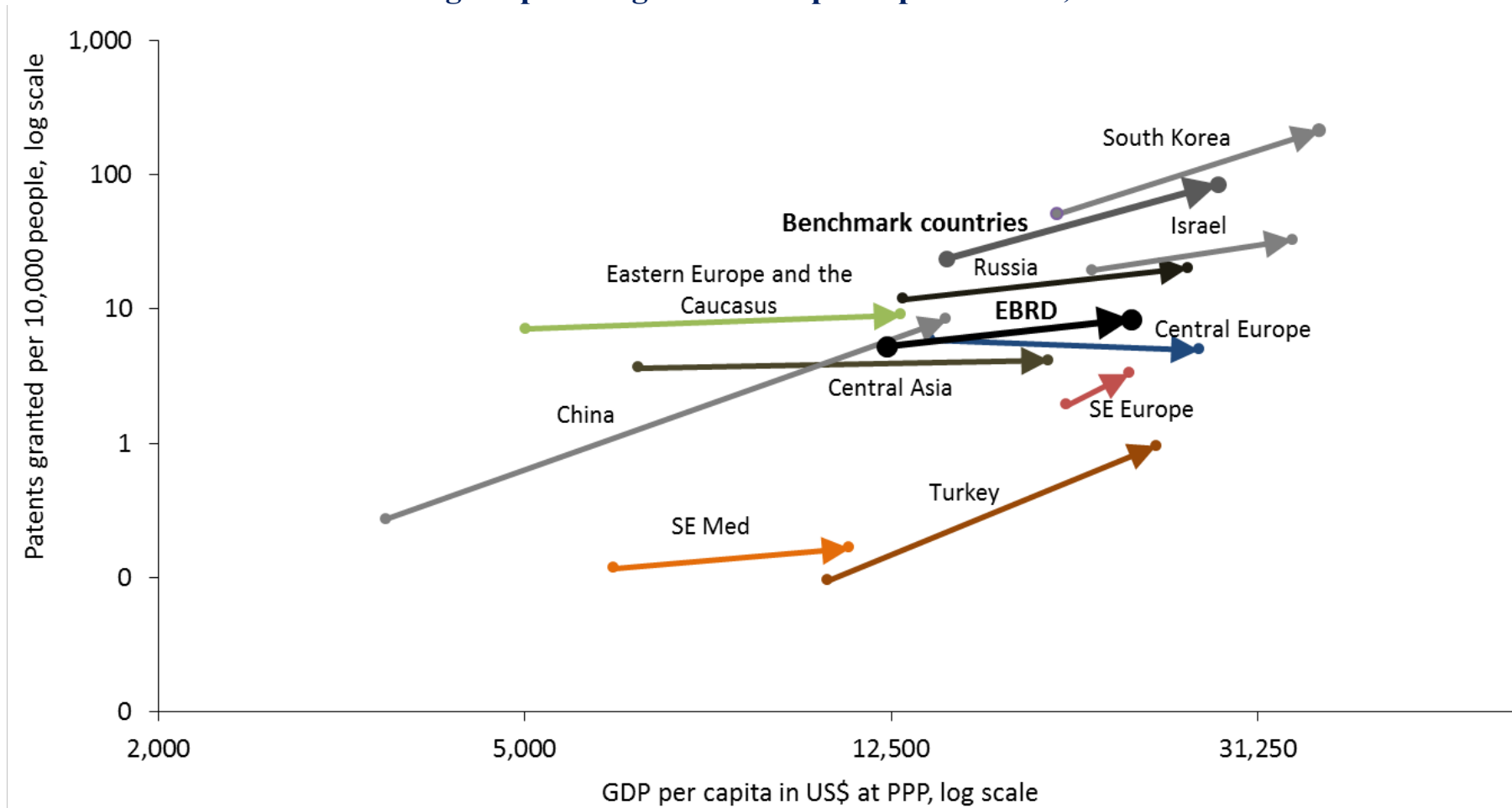


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Growth in EBRD countries has been "innovation-light"

<1% of firms introduce a product that is new to the world

Change in patents granted and per capita income, 2002-15



Sources: Penn World Tables, IMF and authors' calculations.

