BELARUSIAN ECONOMIC GROWTH DECOMPOSITION

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Belarusian growth miracle

Stylized facts about Belarus

- Lagger in EBRD transition indices
- State ownership dominates
- The government traditionally intervenes in the economy through direct and indirect subsidies, price controls in goods and factors markets
- Centralized allocation of resources

However, Belarus has displayed remarkable growth rate during the last decade:

- In 2001-2010 an average growth rate of GDP was 7.4%
- In “fat years” 2003-2008 an average growth rate amounted to 9.4%
- Since 2011 the growth has weakened significantly

What we want to know about growth in Belarus?

- What was the engine of Belarusian growth, i.e. either factor accumulation or productivity (TFP) growth?
- Which industries are the leaders in productivity growth?
- How big is the productivity gap between Belarus and transition leaders (Czech Republic as the benchmark); between Belarus and developed countries (Sweden as the benchmark)?
- What should be the growth strategy in order to provide growth sustainability?

Data challenge: capital series

- Official data on capital stock displays 'unnatural stability', i.e. through last 20 years the growth rate is fluctuating around 2%

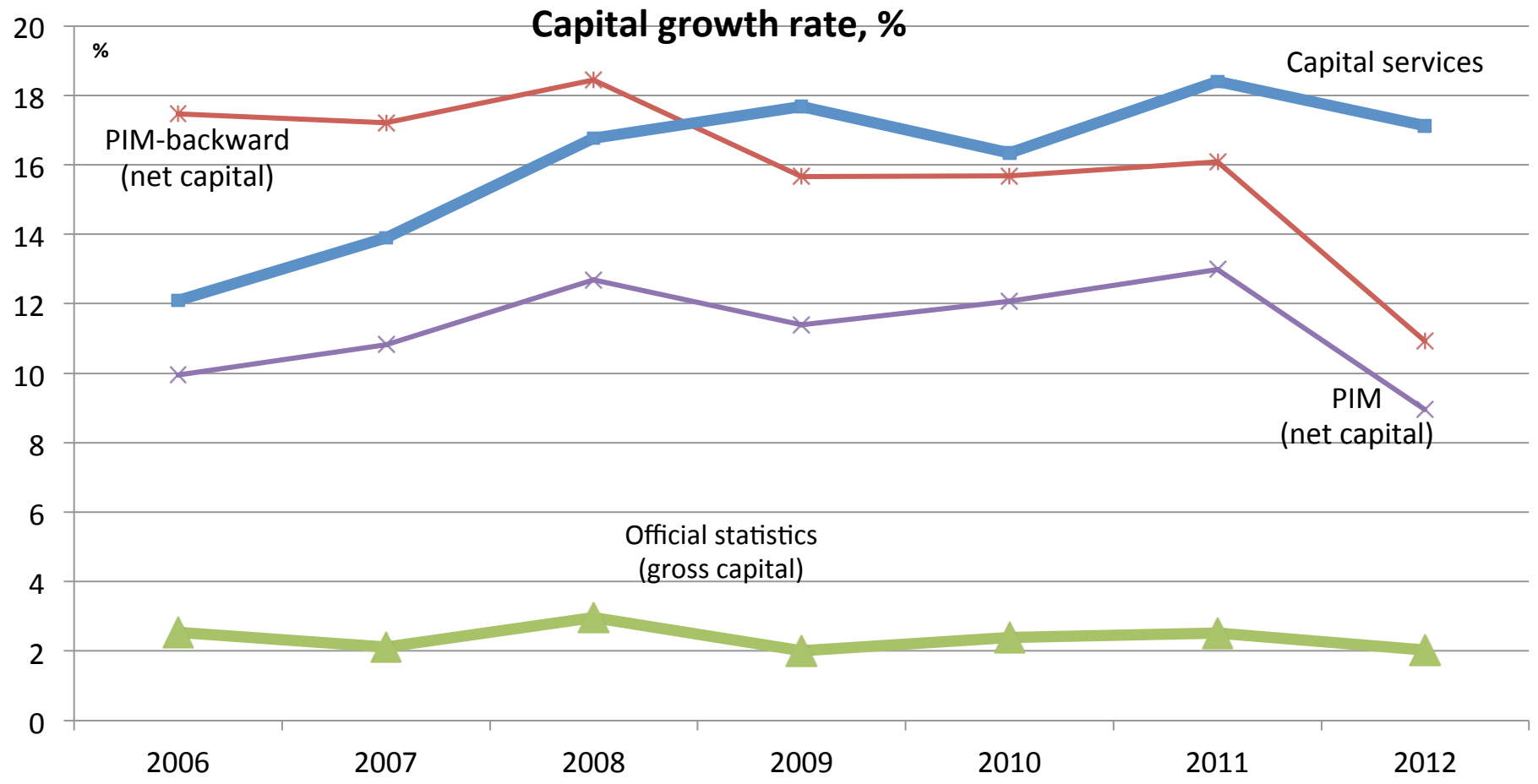
- The studies that use official capital stock data find that growth in Belarus was mainly driven by productivity (World bank, 2012; Demidenko, Kuznetsov , 2010)

- Bessonov and Voskoboynikov (2008): The same problem in Russian data is due to biased investment deflators

Options to solve the challenge with capital data

- Standard PIM approach. Subject to bias in terms of both levels and growth rates if at least one observation with biased investment deflator is within the sample
- PIM approach with adjustments to computational technique (PIM-backward). It reconstructs true level and growth rate of the series during the periods with bias in the deflators. Sensitive to assumptions about depreciation rate
- Capital services approach.
  - Use of disaggregated (by industries and capital assets) deflators (based on the data of capital assets revaluation)
  - individual depreciation rates
  - provides reasonable aggregation

Different measures of capital display vastly different dynamics



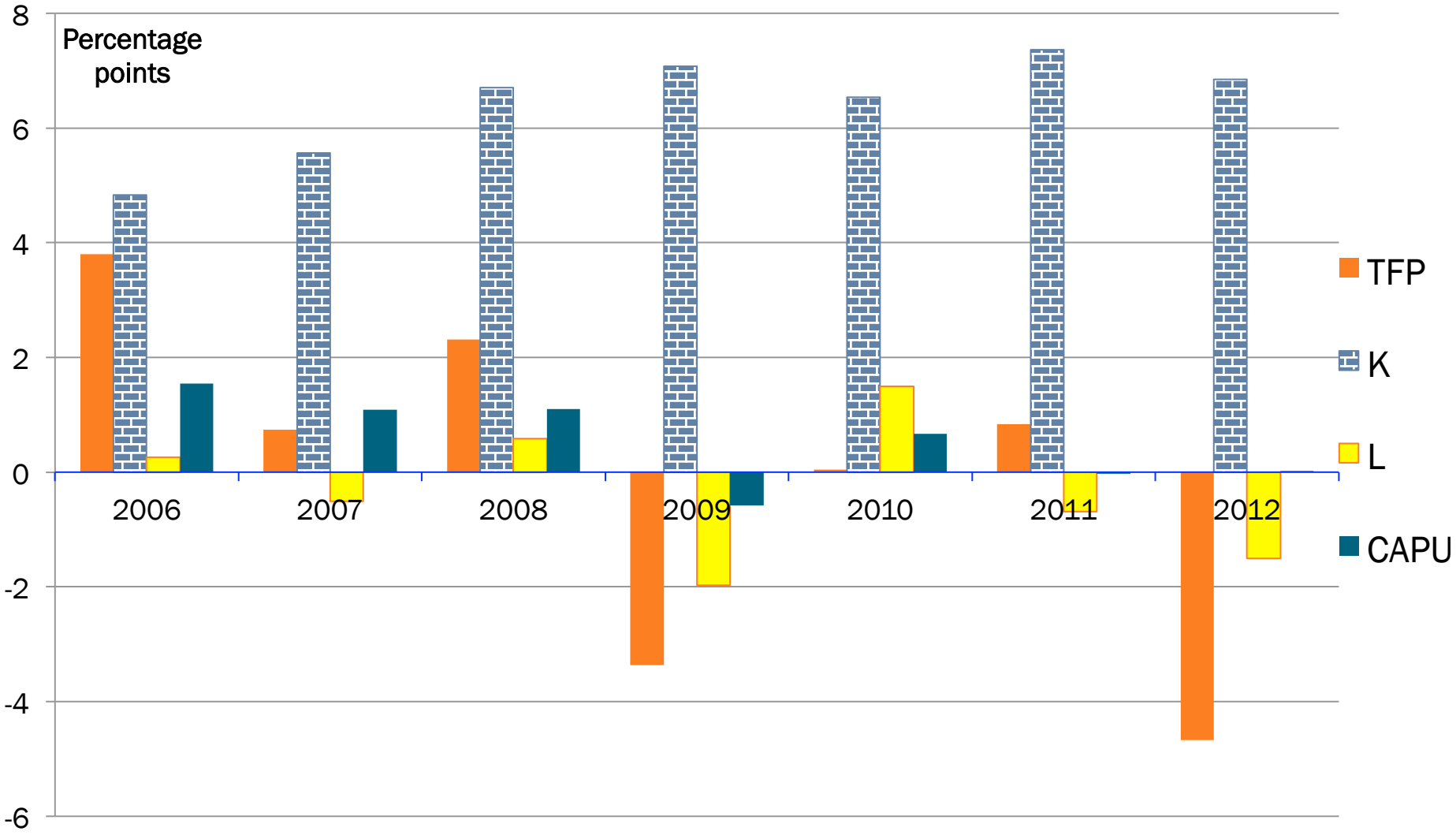
The mechanics of the exercise

1. We adopt capital services approach for measuring capital (in terms of growth rates)
2. For measuring initial stock and levels of the capital series we use the data of net capital
3. We run growth accounting procedure and compute TFP levels based on Cobb-Douglas production function:

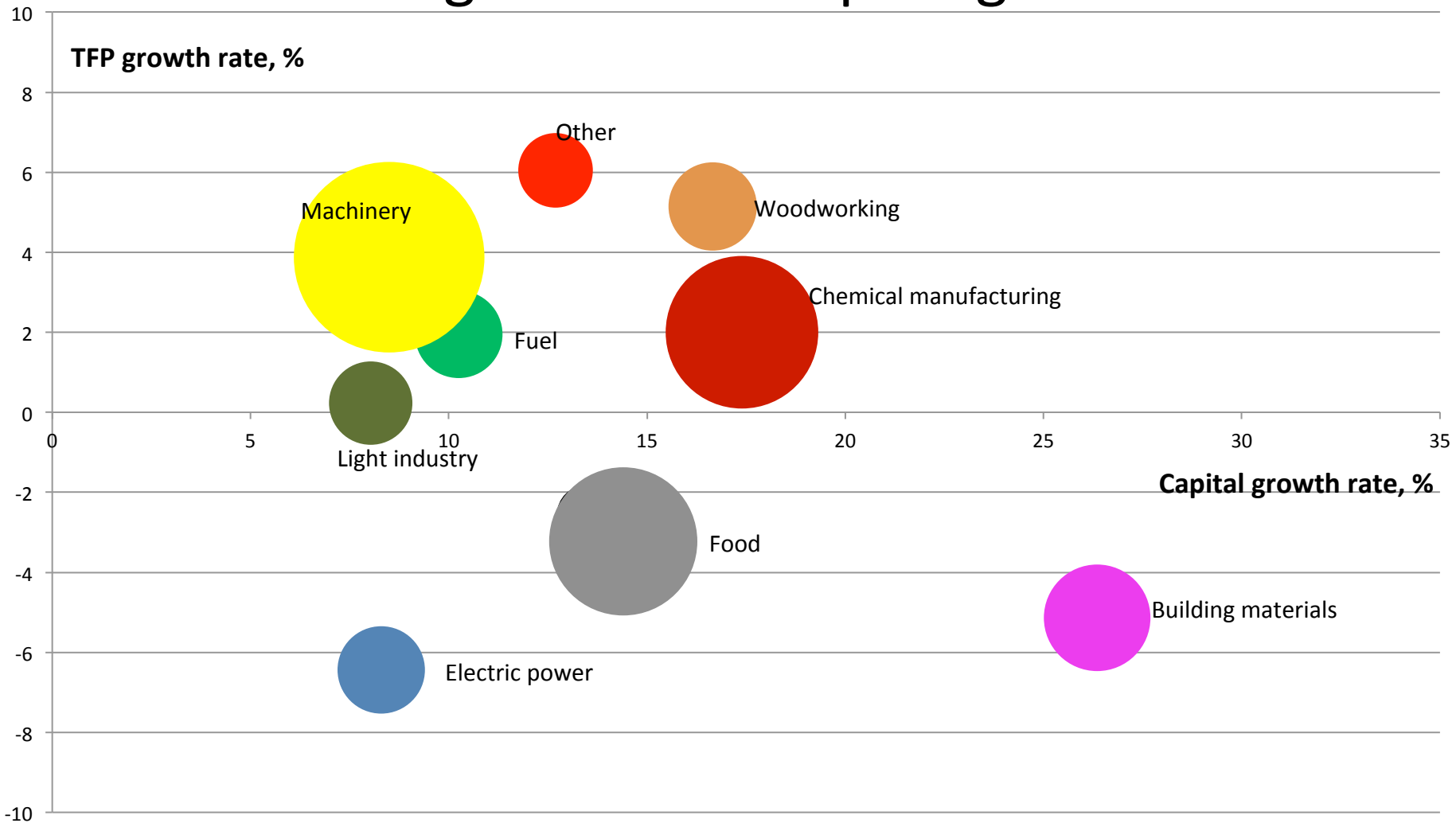
$$Y\downarrow i = A\downarrow i \times K\downarrow i\uparrow \alpha\downarrow i \times CAPU\downarrow i\uparrow \alpha\downarrow i \times L\downarrow i\uparrow 1-\alpha\downarrow i$$

- where *Y* is output, *A* is TFP, *K* and *L* are capital and labor, *CAPU* is capacity utilization ratio, α is capital share, and *i* is the industry index

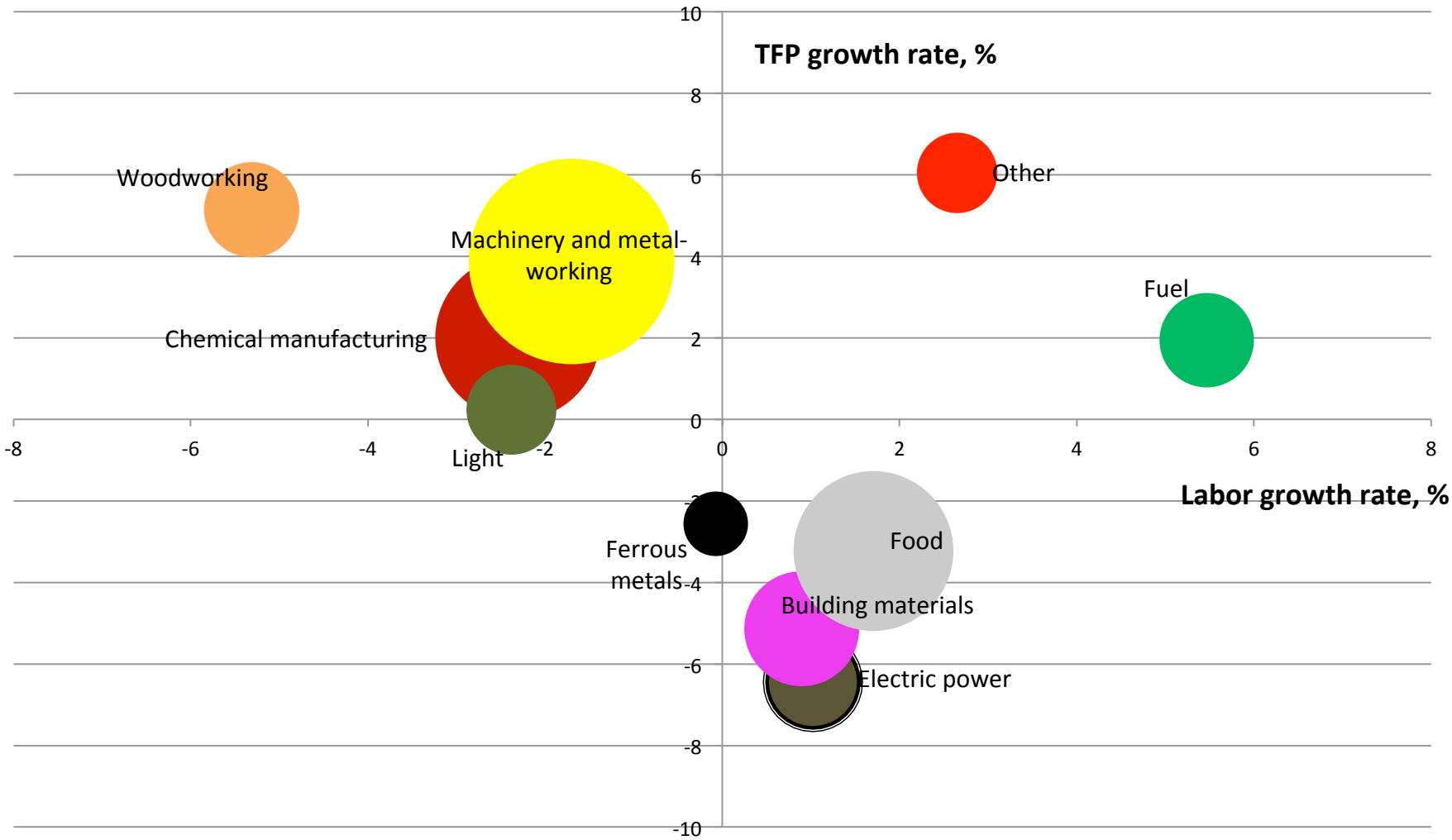
Contribution to growth



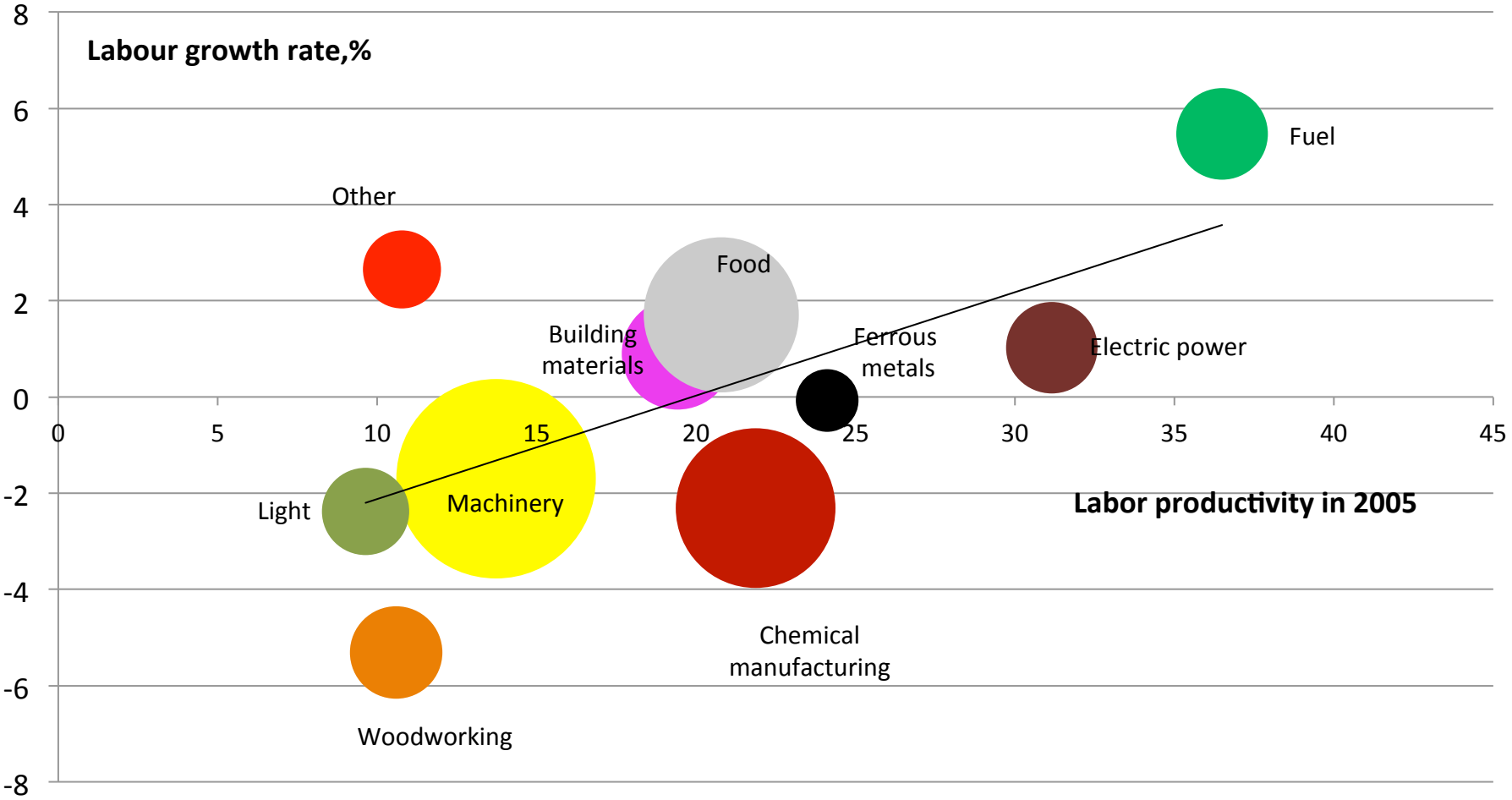
Lack of positive relationship between TFP growth and capital growth



TFP growth and labour growth

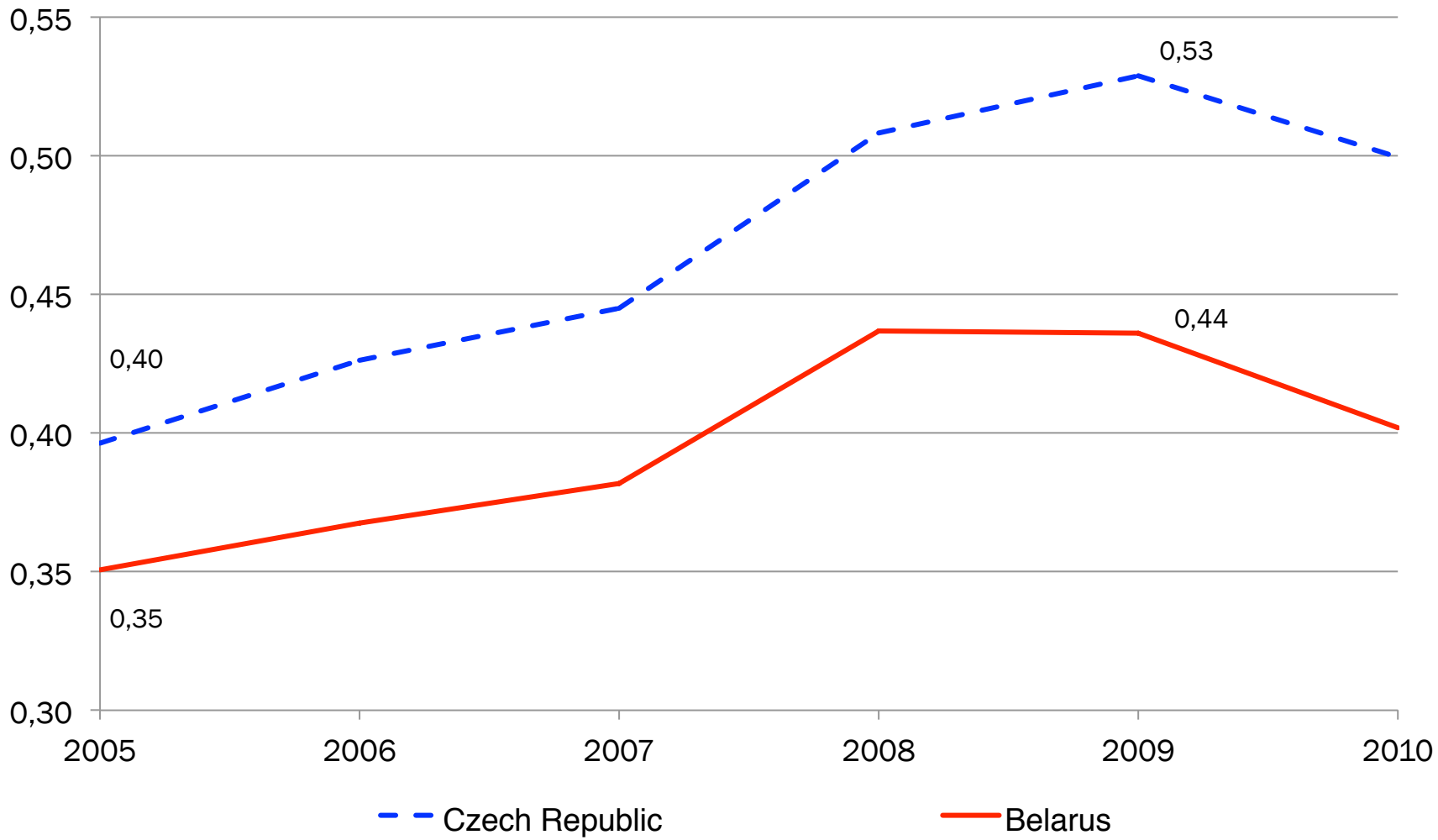


but labor allocation is improving – it is undoing initial distortions



Closing the gap?

TFP in Belarus and Czech Republic as the share of Swedish TFP



Industries: Leaders and Laggers

Relative productivities of industries in Belarus, 2010

	Czech Rep.	Sweden
Winners		
Trade and repair	2.12	1.09
Chemicals	2.02	
Mining and quarrying	1.35	1.01
Food, beverages and tobacco	1.24	0.57
Basic metals	1.20	0.61
Financial activities	1.15	0.81
Losers		
Textiles and leather	0.73	0.27
Machinery and equipment	0.71	0.34
Wood	0.68	0.29
Electrical, electronic and optical equipment	0.65	0.22
Transport vehicles and equipment	0.63	0.58
Electricity, gas and water	0.25	0.27

Conclusions

- Growth in Belarus is mainly due to capital accumulation, while the productivity is stagnating. This regime is likely to result in weakening long-term growth rate.

- There are large losses in output due to misallocation of capital (about 10% of actual output).

- Capital accumulation through artificial tools like directed lending (Kruk&Haiduk, 2013) may lead to losses in productivity

- A huge gap in productivity between Belarus and neighboring countries is contracting slowly