

SciencesPo



NOMINAL CONVERGENCE AND DIVERGENCE IN THE CEECs

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OUTLINE

1. Motivations

- A puzzle related to real exchange rate developments of CEECs
- The BS effect is inoperant since 2008

2. Theoretical foundations of the Balassa-Samuelson effect

- Assumptions
- Different steps

3. Empirical analysis for CEECs and EU-15

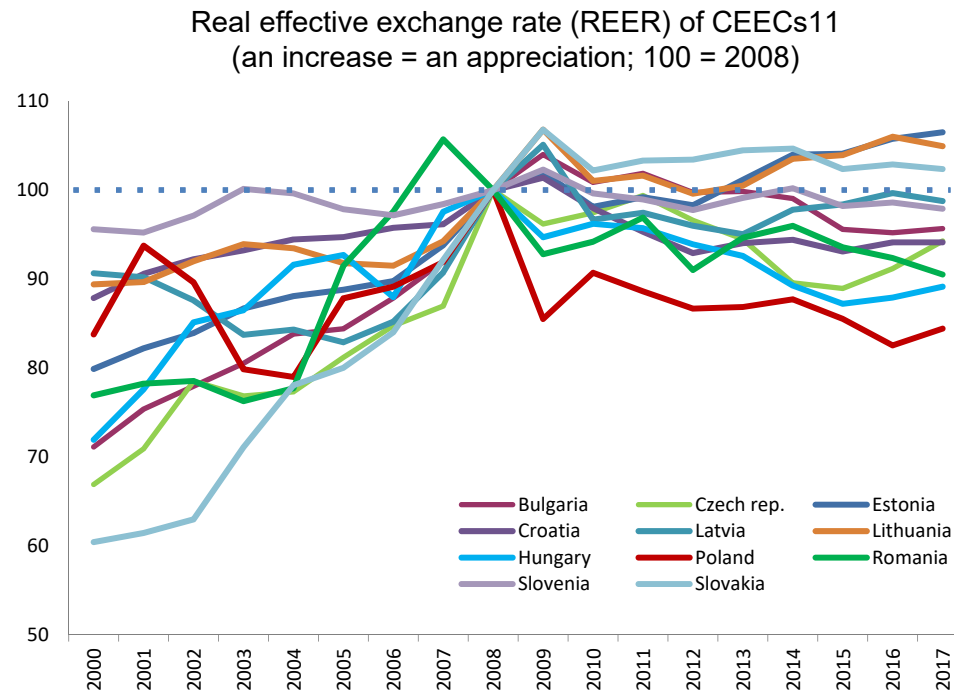
- Descriptive analysis

4. Policy recommendations

- Room of manoeuvre for wage increases

1. MOTIVATIONS

Puzzling developments in the real exchange rate of CEECs since 2008



2.THEORETICAL FOUNDATIONS OF THE BALASSA-SAMUELSON

□ Two sectors

- Tradable sector (e.g. manufacturing)
- Non tradable sector (e.g. haircuts)

□ Productivity

- Higher in T sector than in NT sector ($\Delta a^T > \Delta a^{NT}$)

□ Wages

- Initially $\Delta w^T > \Delta w^{NT}$ \Rightarrow free mobility of workers $\Rightarrow \Delta w^T = \Delta w^{NT} = \Delta w$

□ Prices

- Higher price increases in NT than in T sector ($\Delta p^{NT} > \Delta p^T$)

- ❑ **Similar steps in advanced economies than in catching up economies**
 - ... but to a lower extent in advanced economies (due to lower productivity gains)
- ❑ **Consequences**
 - Inflation higher in catching up economies than in advanced countries
 - Real exchange rate appreciation of catching up countries v.a.v advanced countries
- ❑ **The empirical work will assess the different steps of the BS effect**
 - In particular, if $\Delta a^T > \Delta a^{NT}$
 - $\Delta w^T = \Delta w^{NT} = \Delta w$
 - $\Delta p^{NT} > \Delta p^T$

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- ❑ **The empirical work will assess the different steps of the BS effect**

 - In particular, if $\Delta a^T > \Delta a^{NT}$
 - $\Delta w^T = \Delta w^{NT} = \Delta w$
 - $\Delta p^{NT} > \Delta p^T$

<ul style="list-style-type: none"> • $\Delta a^T > \Delta a^{*T}$ • $\Delta w > \Delta w^*$ • $\Delta P > \Delta P^*$ and so on
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3. EMPIRICAL ANALYSIS

- ❑ **8 CEECs = aggregate of catching up EU countries**
 - OECD data (Bulgaria, Romania and Croatia excluded)

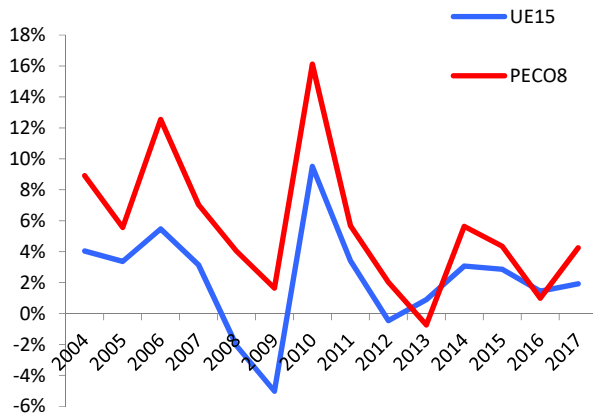
- ❑ **15 « old » EU members = aggregate of advanced EU countries**

- ❑ **Tradable Sector**
 - Proxied by manufacturing

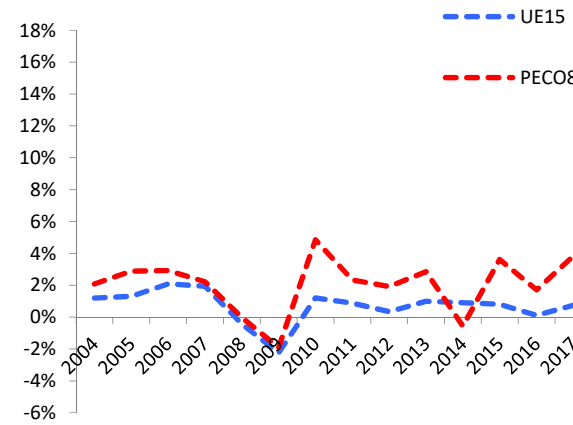
- ❑ **Non tradable sector**
 - Proxied by market services (excluding real estate services)

Result 1: For a given sector, productivity growth is higher in CEECs-8 than in EU-15

Productivity growth in TRADABLE SECTOR

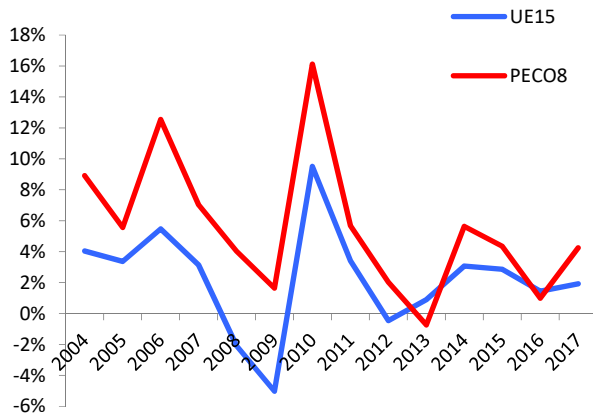


Productivity growth in NON TRADABLE SECTOR

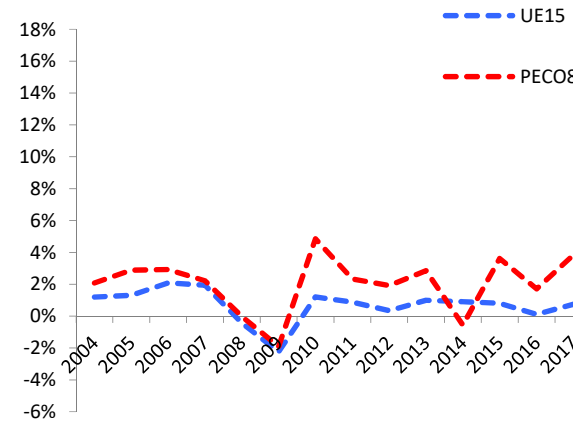


- Result 1: For a given sector, productivity growth is higher in CEECs-8 than in EU-15**
- Result 2: For a given country aggregate, productivity growth is higher in T sector than in NT sector**

Productivity growth in TRADABLE SECTOR



Productivity growth in NON TRADABLE SECTOR

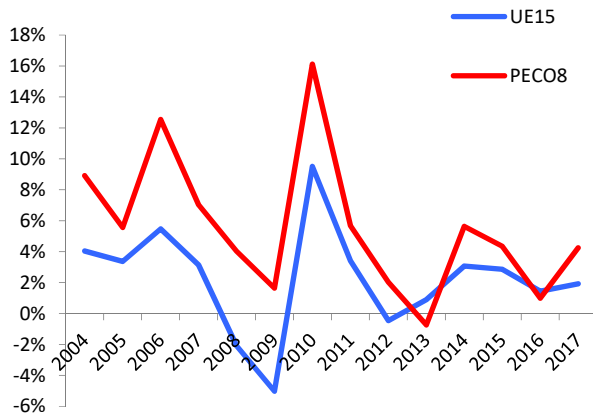


Result 1: For a given sector, productivity growth is higher in CEECs-8 than in EU-15

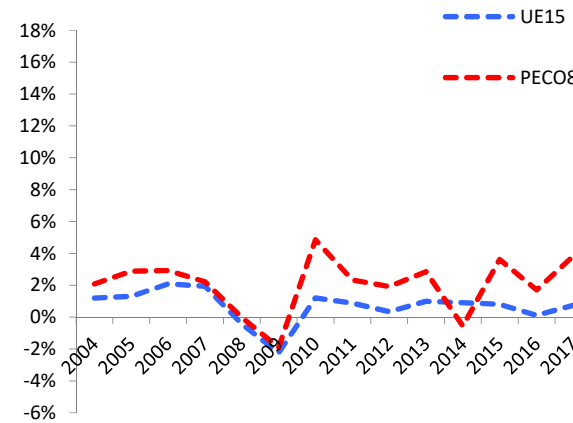
Result 2: For a given country aggregate, productivity growth is higher in T sector than in NT sector

fulfilled ➔ **CONCLUSION Step 1 of the Balassa-Samuelson effect is fulfilled**

Productivity growth in **TRADABLE SECTOR**



Productivity growth in **NON TRADABLE SECTOR**

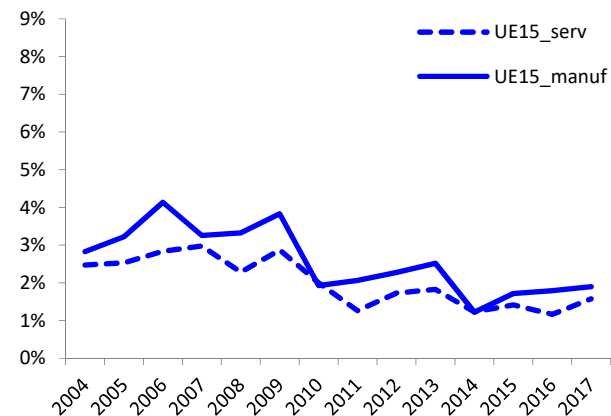


Result 3: For a given country aggregate, developments in wages are quite correlated

Wages growth in CEECs



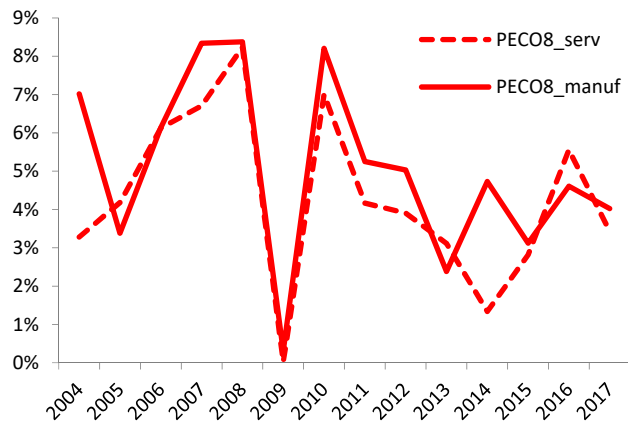
Wages growth in EU-15



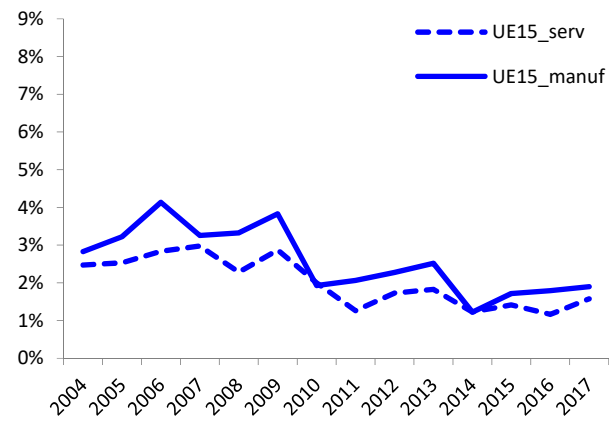
Result 3: For a given country aggregate, developments in wages are quite correlated

Result 4: For a given sector, wages growth is higher in CEECs than in EU15

Wages growth in CEECs



Wages growth in EU-15

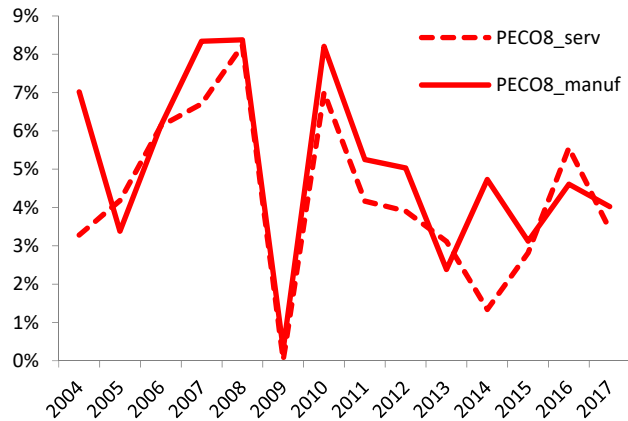


Result 3: For a given country aggregate, developments in wages are quite correlated

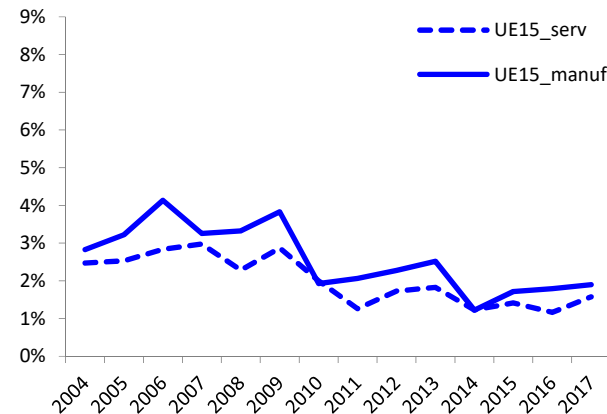
Result 4: For a given sector, wages growth is higher in CEECs than in EU15

➡ CONCLUSION: Step 2 of the Balassa-samuelson is fulfilled

Wages growth in CEECs

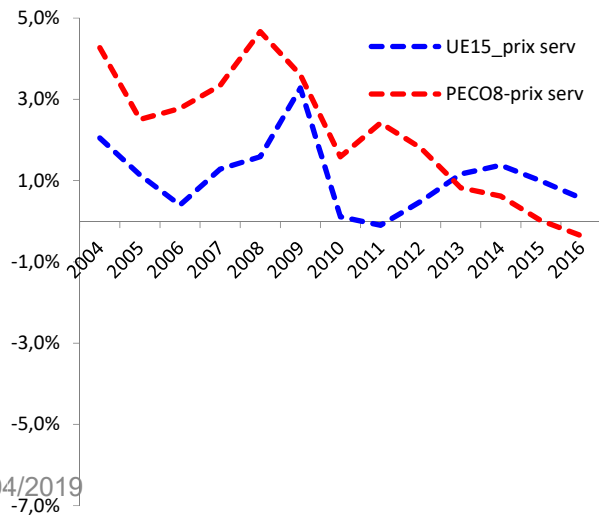


Wages growth in EU-15

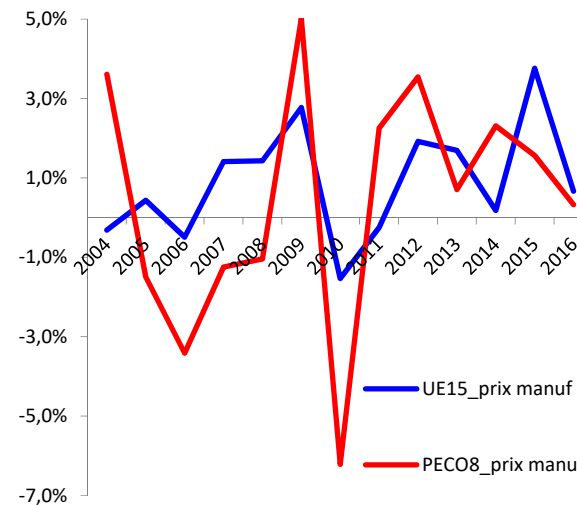


Result 5: Since 2013, the inflation in NT sector is lower in CEECs than in EU-15

Inflation in NT sector

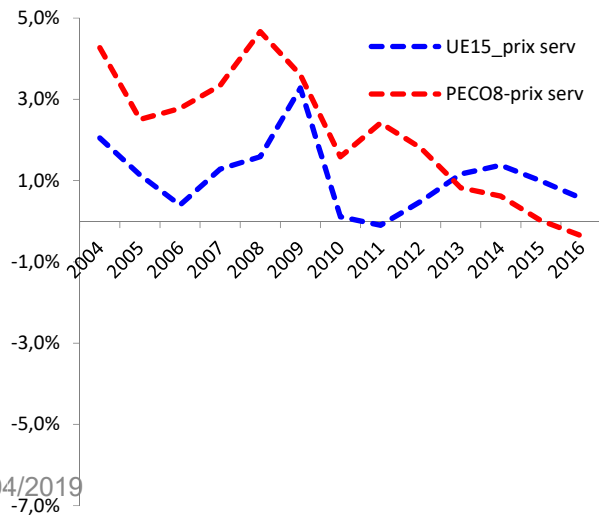


Inflation in T sector

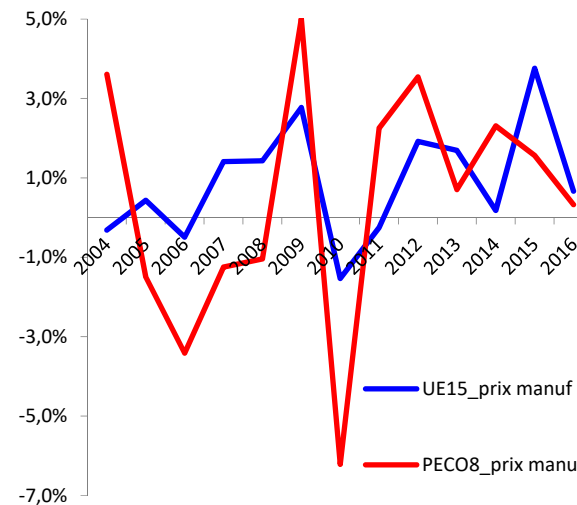


Result 5: Since 2013, the inflation in NT sector is lower in CEECs than in EU-15
Result 6: Inflation in T sector is poorly correlated between CEECs and EU-15

Inflation in NT sector



Inflation in T sector

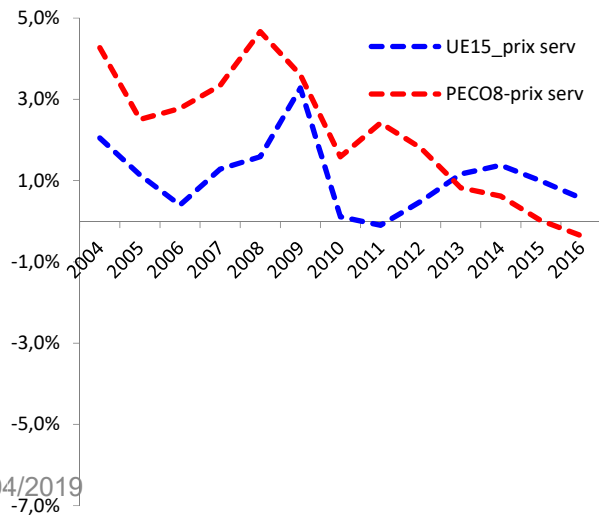


Result 5: Since 2013, the inflation in NT sector is lower in CEECs than in EU-15

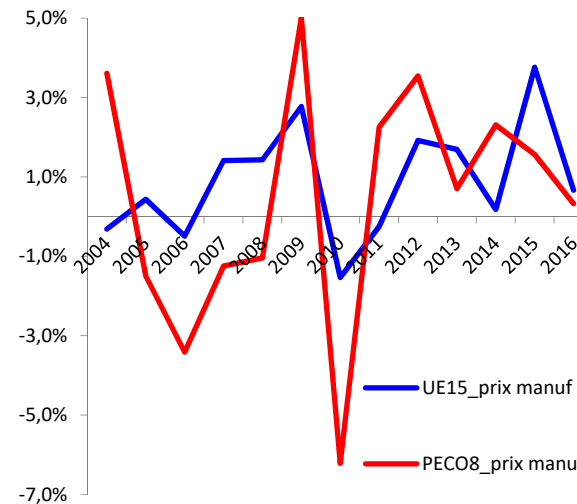
Result 6: Inflation in T sector is poorly correlated between CEECs and EU-15

➡ CONCLUSION: There is anomalies related to the developments in prices

Inflation in NT sector



Inflation in T sector



Main explanations for anomalies

- ❑ **Pricing-to-market**
 - e.g. incomplete pass-through (Balaz, 2010)
- ❑ **Measurement problems**
 - e.g. related to quality of goods and services (Cincibuch et Podpiera, 2006)
- ❑ **Aggregation problems**
- ❑ **NT are included in T**
- ❑ **Growth in wages lower than growth in productivity** ($\Delta w < \Delta a$)
 - ... this helps enterprises maintain their profitability while lowering prices

**Growth differential between productivity and real wages by sector
(cumulative over the period)**

	2004-2016	<i>Of which</i>	2004-2007	2008-2016
Manufacturing (T sector)				
EU-15	7.2%		3.6%	3.6%
CEECs-8	12.8%		6.6%	6.1%
Services (NT sector)				
EU-15	-3.1%		0.6%	-3.7%
CEECs-8	-3.5%		2.7%	-6.2%

Source : OECD, computation of the author.

4. Policy recommendations

□ Room of manoeuvre for wage increases

- especially in manufacturing sector

□ Better evaluated by considering *LEVELS* rather than *CHANGES*

- See Galgoczi (2017) for a similar statement

Manufacturing (T sector)	Apparent productivity of labour (in €, per hour)		Labour cost (in €, per hour)		Productivity of labour adjusted of labour cost (in %)	
	2004	2016	2004	2016	2004	2016
	Czech republic	11.1	19.9	5.3	9.3	209
Estonia	5.7	13.3	3.5	8.7	164	153
Hungary	18.4	26.2	5.7	7.7	322	340
Latvia	4.4	12.6	2.1	6.8	207	185
Poland	13.6	24.9	3.0	5.5	455	453
Slovakia	12.8	21.7	5.5	9.9	232	219
Slovenia	15.7	27.2	9.5	16	165	170
Lithuania	7.1	17.1	3.4	7.7	210	222
CEECs8	13.0	23.3	4.2	7.2	311	325
UE15	38.5	55.4	23.1	30.9	166	179

Services (NT sector)	Apparent productivity of labour (in €, per hour)		Labour cost (in €, per hour)		Productivity of labour adjusted of labour cost (in %)	
	2004	2016	2004	2016	2004	2016
Czech republic	13.1	19.4	5.5	9.0	238	216
Estonia	10.4	19.1	4.9	10.3	212	185
Hungary	10.3	12.6	5.9	7.0	175	180
Latvia	7.4	14.9	2.9	8.4	255	177
Poland	10.8	17.5	3.6	6.4	300	273
Slovakia	15.0	19.8	6.0	9.1	250	218
Slovenia	18.3	26.6	10.8	15.9	169	167
Lithuania	9.2	17.3	3.5	8.2	263	211
CEECs8	11.4	17.4	4.7	7.6	245	229
UE15	39.9	46.3	21.5	26.4	186	175

Source: OECD, own computations. Similar computation can be found in Gagoczi (2017)

5. Conclusion

- Room of manoeuvre for wage increases
- especially in manufacturing sector
- ... especially in some CEECs (e.g Poland)

- New model of growth (less based on low labour cost)
- Higher purchasing power for workers
- Brake to large outflows of workers towards Western Europe

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