EU-CEE value chain integration: Where to drive from here?

(with a special focus on the automotive industry)

Conference on

„Automotive industry: (e[x]ternal) force of the Czech economy?“

Prague, 03/10/2010

Robert Stehrer

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Overview

- Convergence of EU-CEE region
- Manufacturing is (has been?) key
- European value chains and manufacturing core
  - Role of automotive industry
- Specialization: Efficiency versus lock-in
- Future challenges

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Come on, catch-up!

- Convergence

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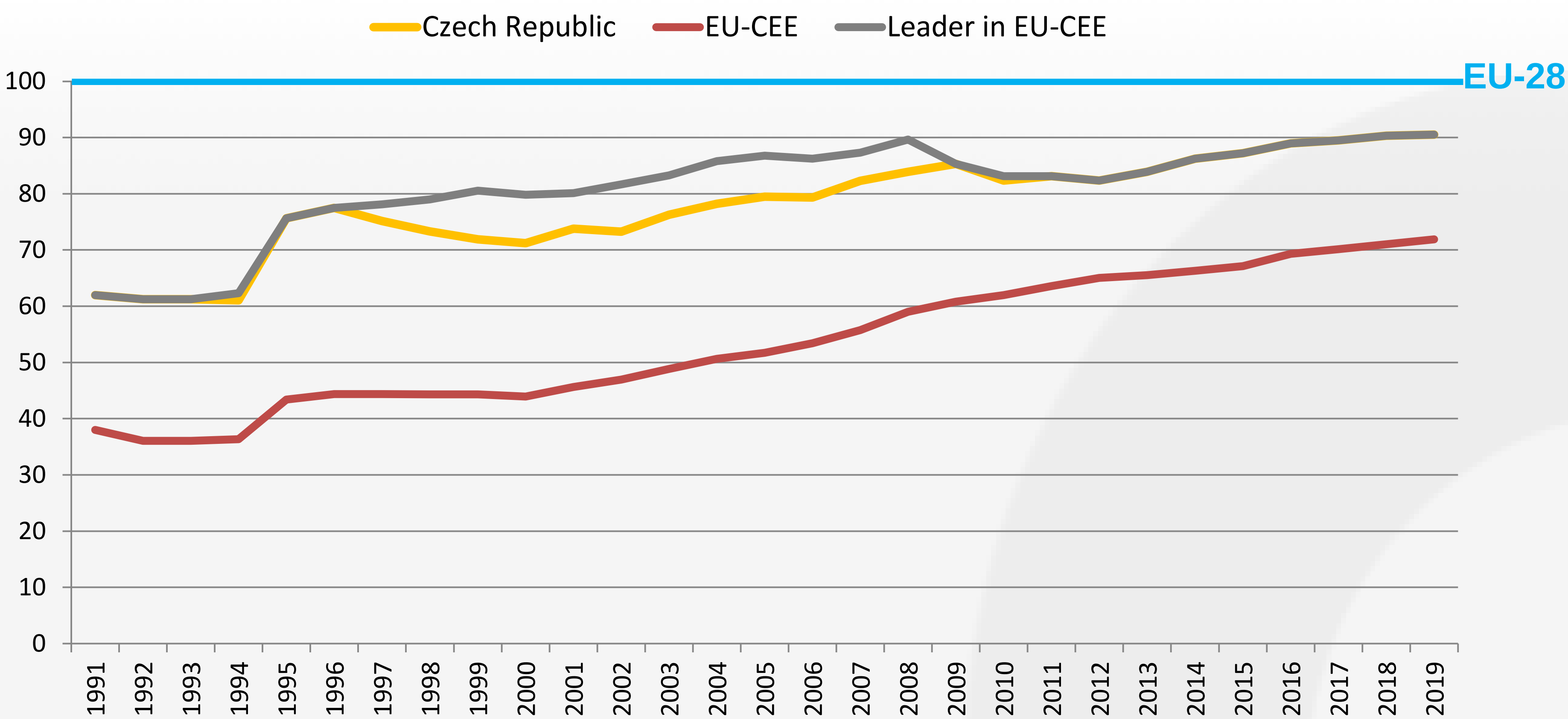
Running faster than the EU-28

GDP per capita at PPP, EU28=100



Sources: wiiw Annual Database incorporating national and Eurostat statistics, wiiw estimates, Eurostat, EC - Winter Report 2017.

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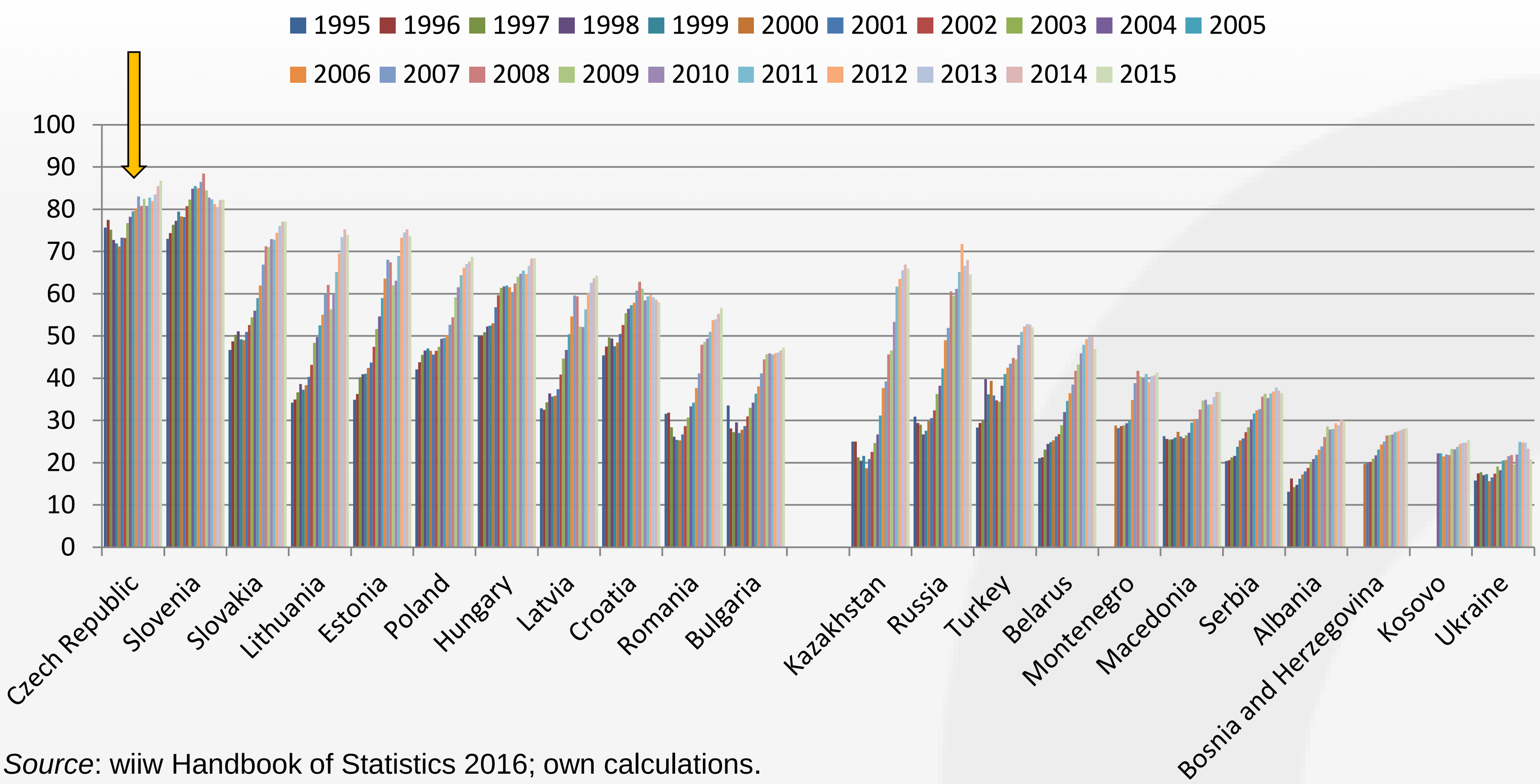
Common pattern across EU-CEE and beyond

(GDP per capita (PPP) in % of EU-28)



Source: wiiw Handbook of Statistics 2016; own calculations.

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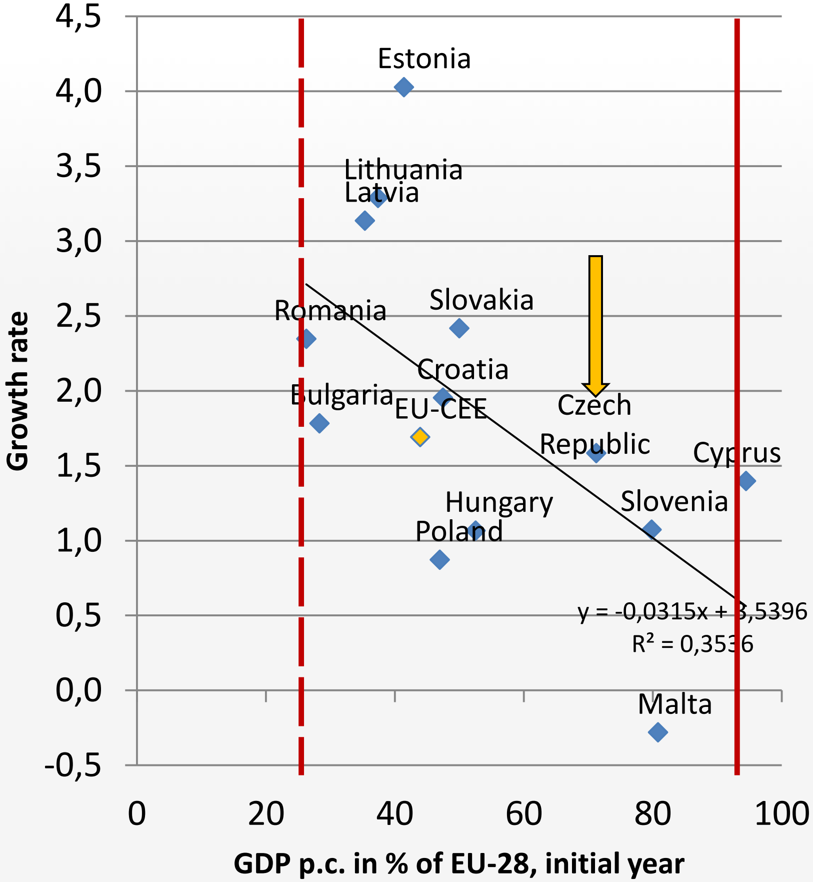
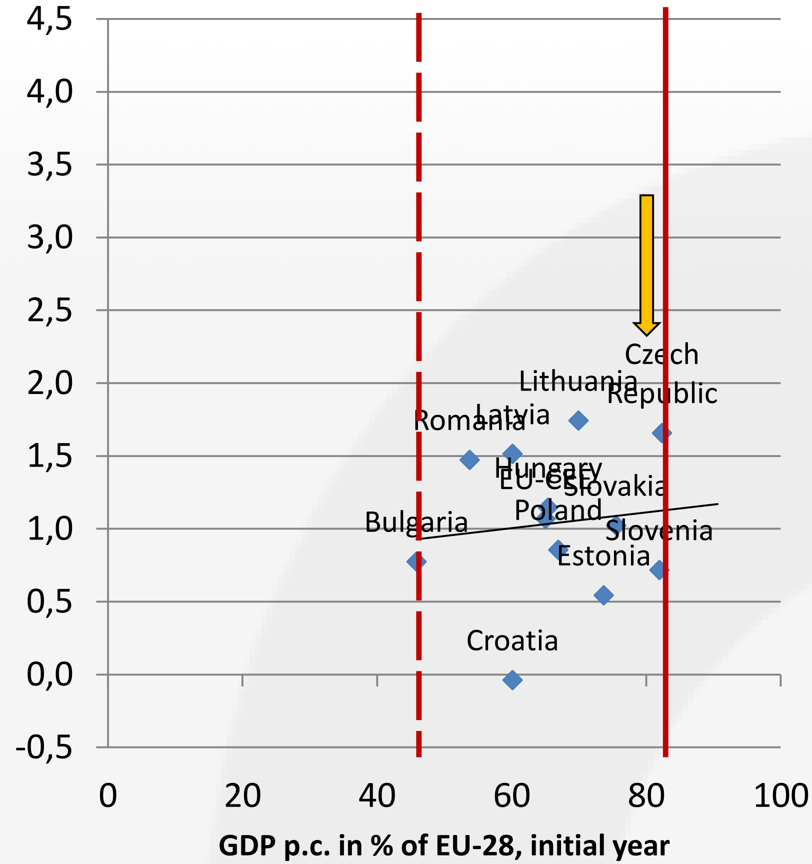
Convergence process derailed?

2000-2007



2012-2016



Sources: wiiw Annual Database incorporating national and Eurostat statistics, wiiw estimates, Eurostat, EC - Winter Report 2017.

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Convergence process derailed?

- Macro-economic turbulences in EU-28 (Eurozone) and individual countries
- Gains from specialisation dynamics exploited?
- Potential of ‚conditional convergence' exploited:
    - Other factors becoming more important (Middle-income trap?)
    - Pre-crisis growth model changed
        - FDI inflow/integration -> technology transfer/ capital accumulation -> export led growth
        - Less FDI, higher importance of domestic demand components; ‚catching-up potential' exploited
        - Sluggish demand in Europe implies that competing in non-European markets becomes more important
- Re-think the role of catch-up driving industries and activities
    - In manufacturing
    - Business-related services

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You never walk alone ...

- Production networks

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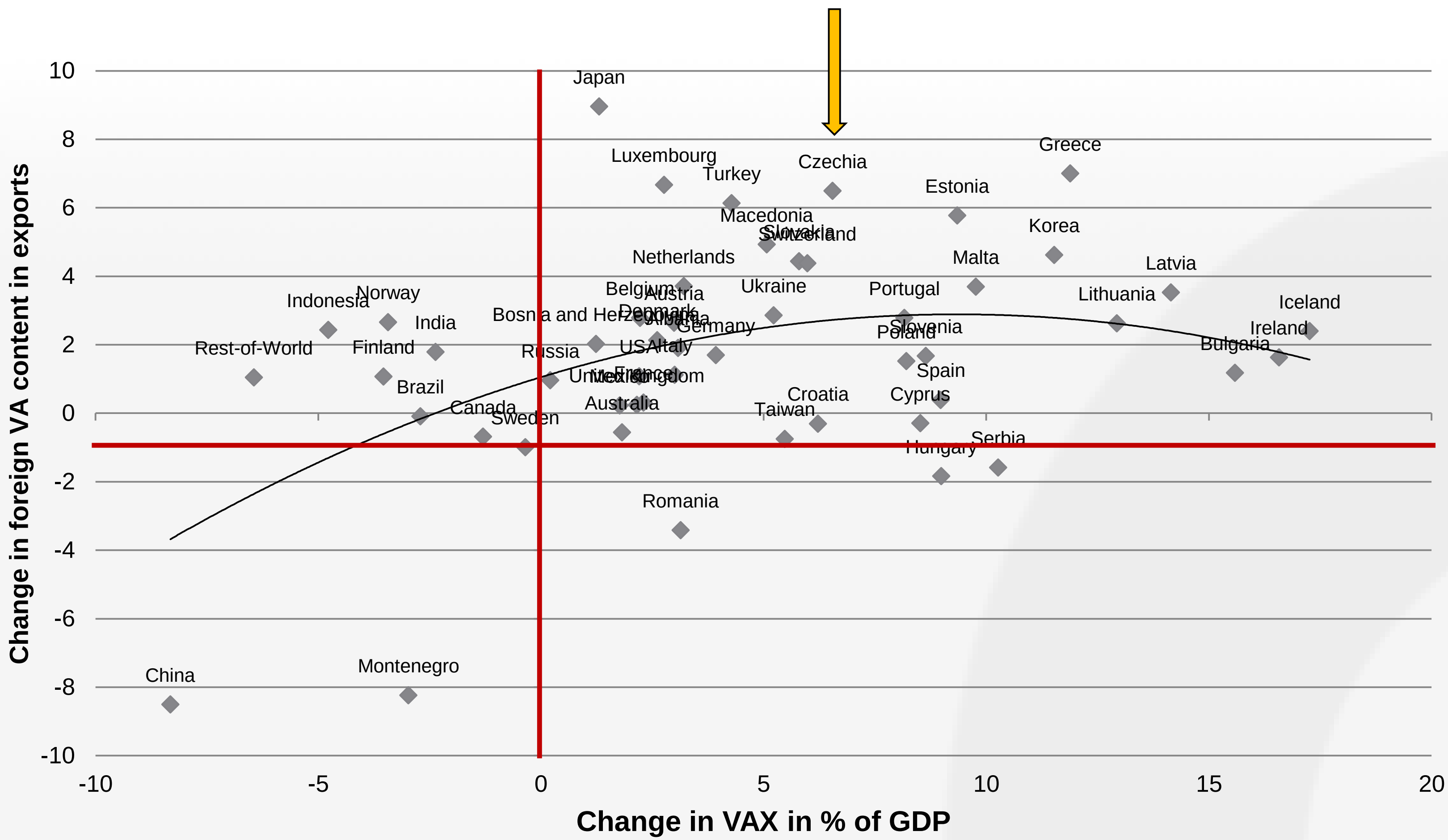
Changes in backward and forward integration (2000-2014)



Source: wiiw Wider Europe IO Database.

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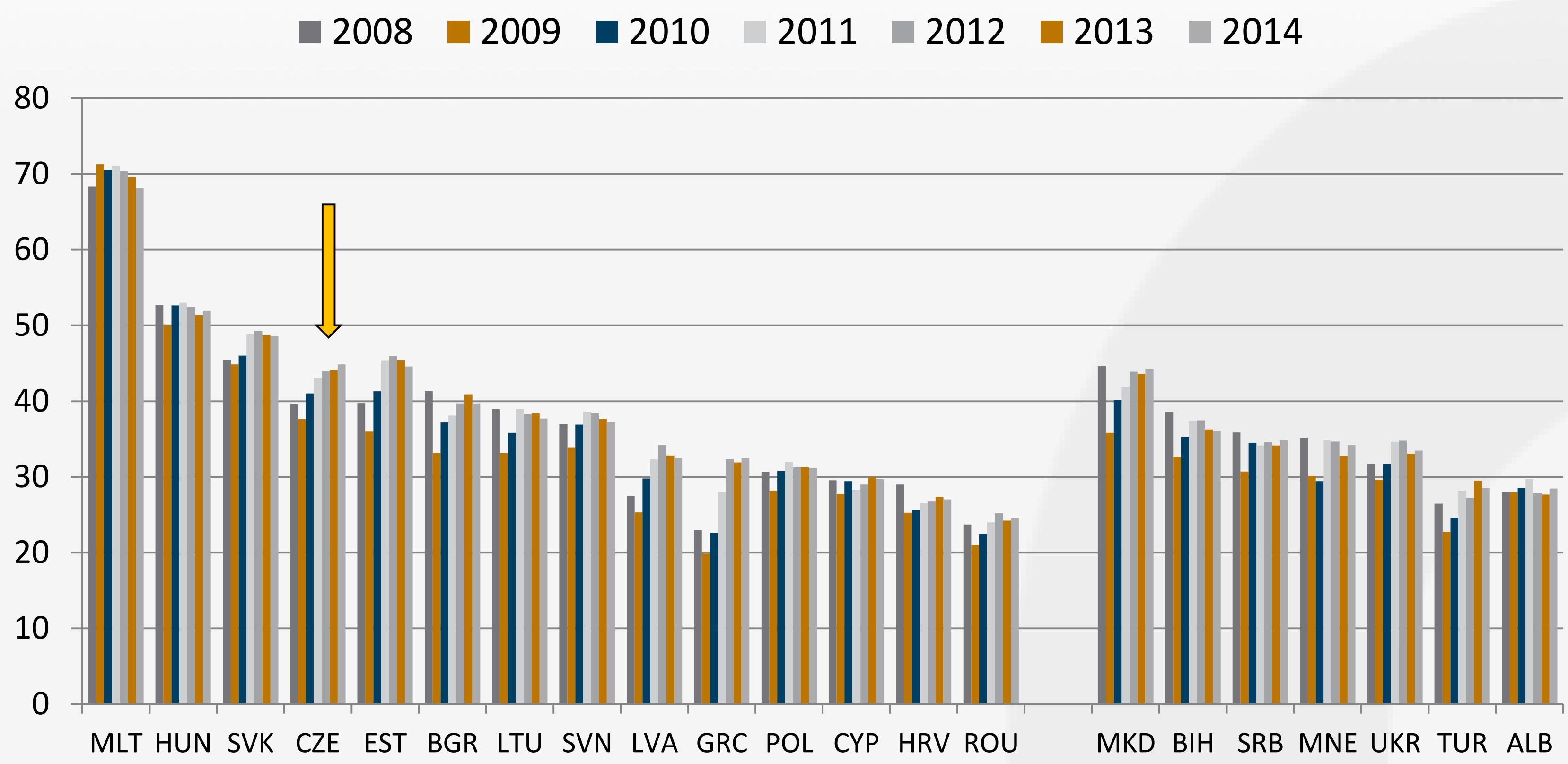
EU-CEE highly integrated in (EU) value chains
BUT: Value chain dynamics derailed?

Share of foreign value added in exports, in %



Source: wiiw Wider Europe IO Database; wiiw calculations.

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What is expected/challenging from value chain integration?

- Specialisation
  - Allows countries to participate in international value chains without having to produce the whole product (finer grained specialisation patterns, ‘trade in tasks’, ‘smart specialisation’)
  - Imports drive exports ...
- Technology transfers and spillovers
  - via FDI, intermediate inputs
  - Business function offshoring / onshoring
  - Spillovers to domestic production and productivity
- ➢ Functioning of the whole economy is important
- Business cycle synchronization
  - Bull-whip effects
  - Industry level synchronisation
- Loose of domestic control

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Show me the way to the next ...

- Industrial specialisation is key

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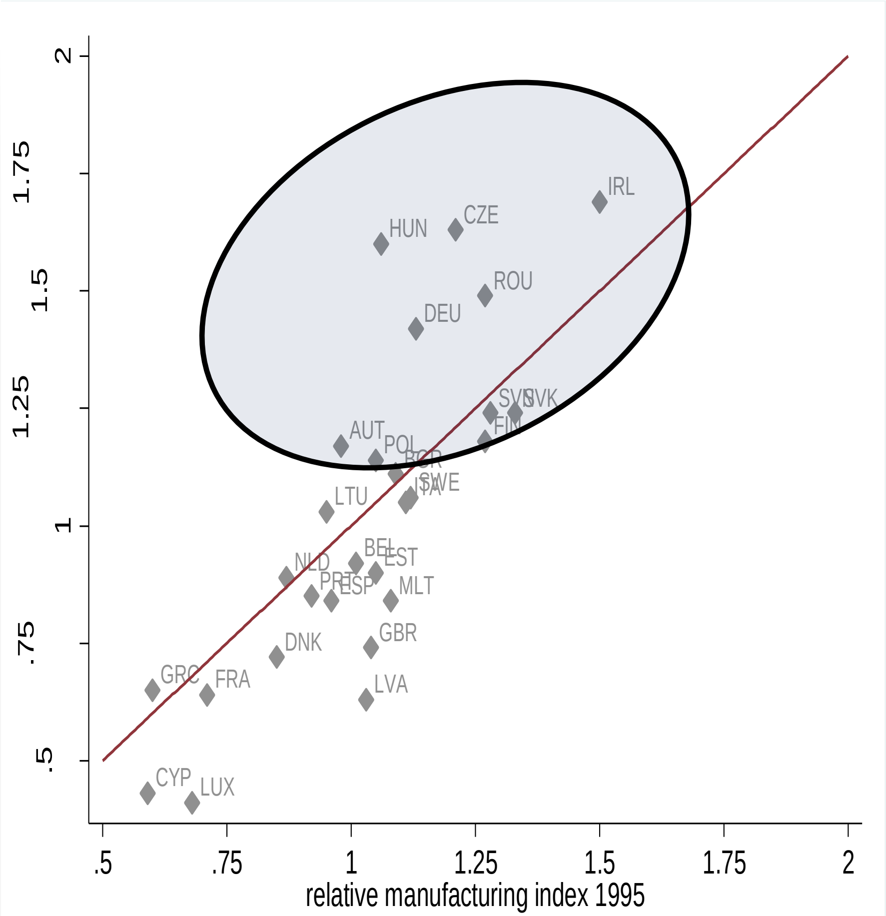
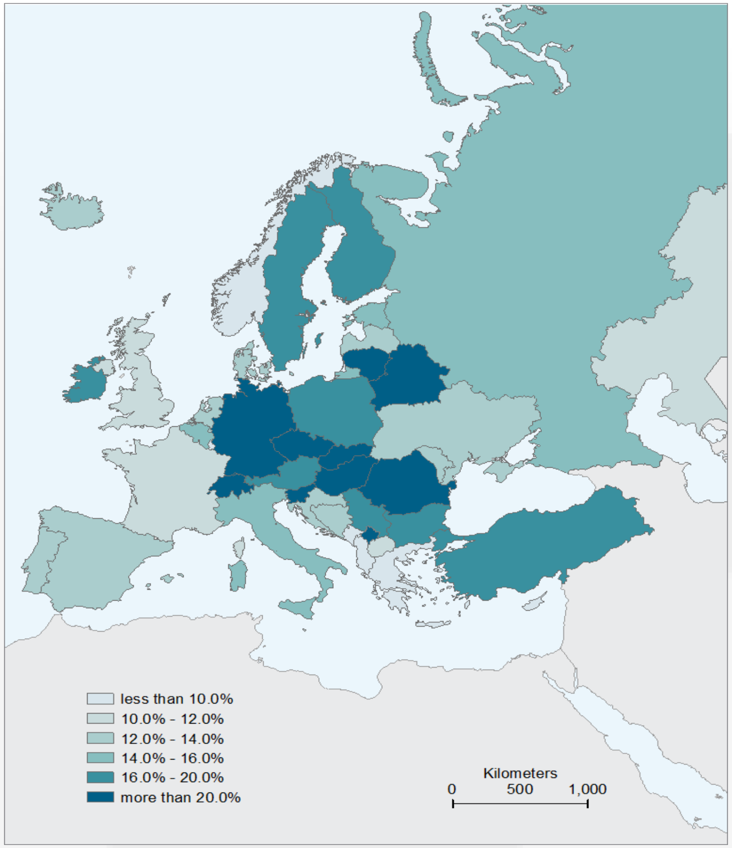
The ‘manufacturing imperative’

The Central European Manufacturing Core





Source: wiiw Handbook, 2014

Source: WIOD, wiiw-calculations (FIW Research Report 2014: The Central European Manufacturing Core)
Note: The relative manufacturing specialisation index is the ratio of Member State’ share in EU wide manufacturing value added over their share in EU GDP. A higher index value indicates stronger specialisation in manufacturing.

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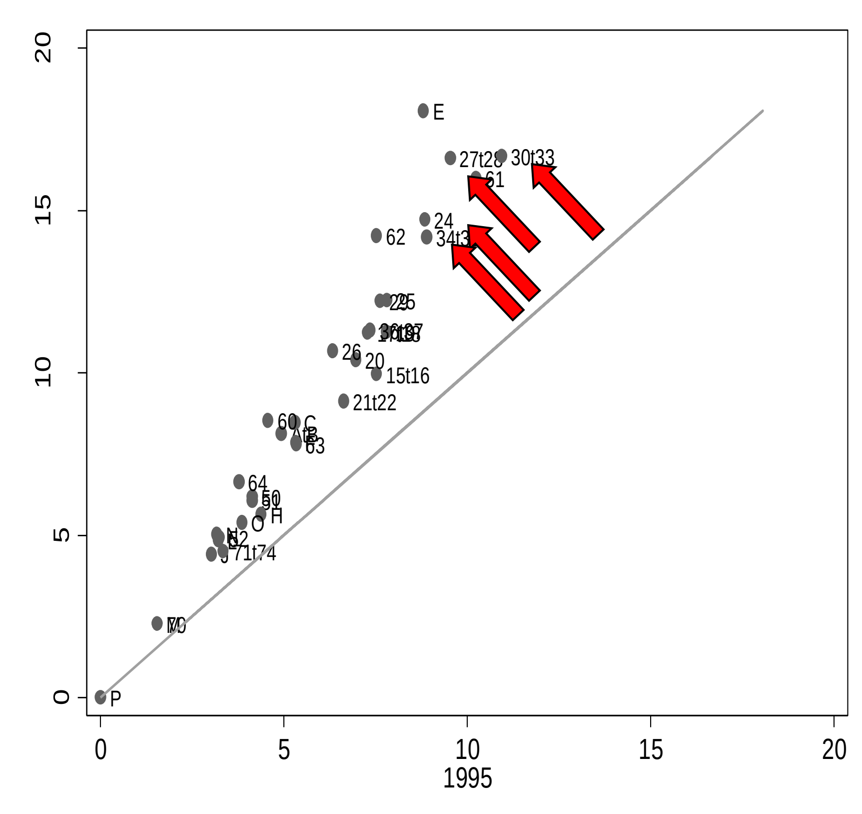
Higher-tech industries drive value chain integration ...

Production integration by industry in EU-27
1995-2007



Source: WIOD, wiiw calculations.

Production integration is – amongst others – particularly strong in

- **Machinery**
- **Electrical engineering**
- **Transport equipment**
- **Chemicals**

These are the industries which account for almost 2/3 of EU-27 exports

Similar pattern holds when considering only European production integration!

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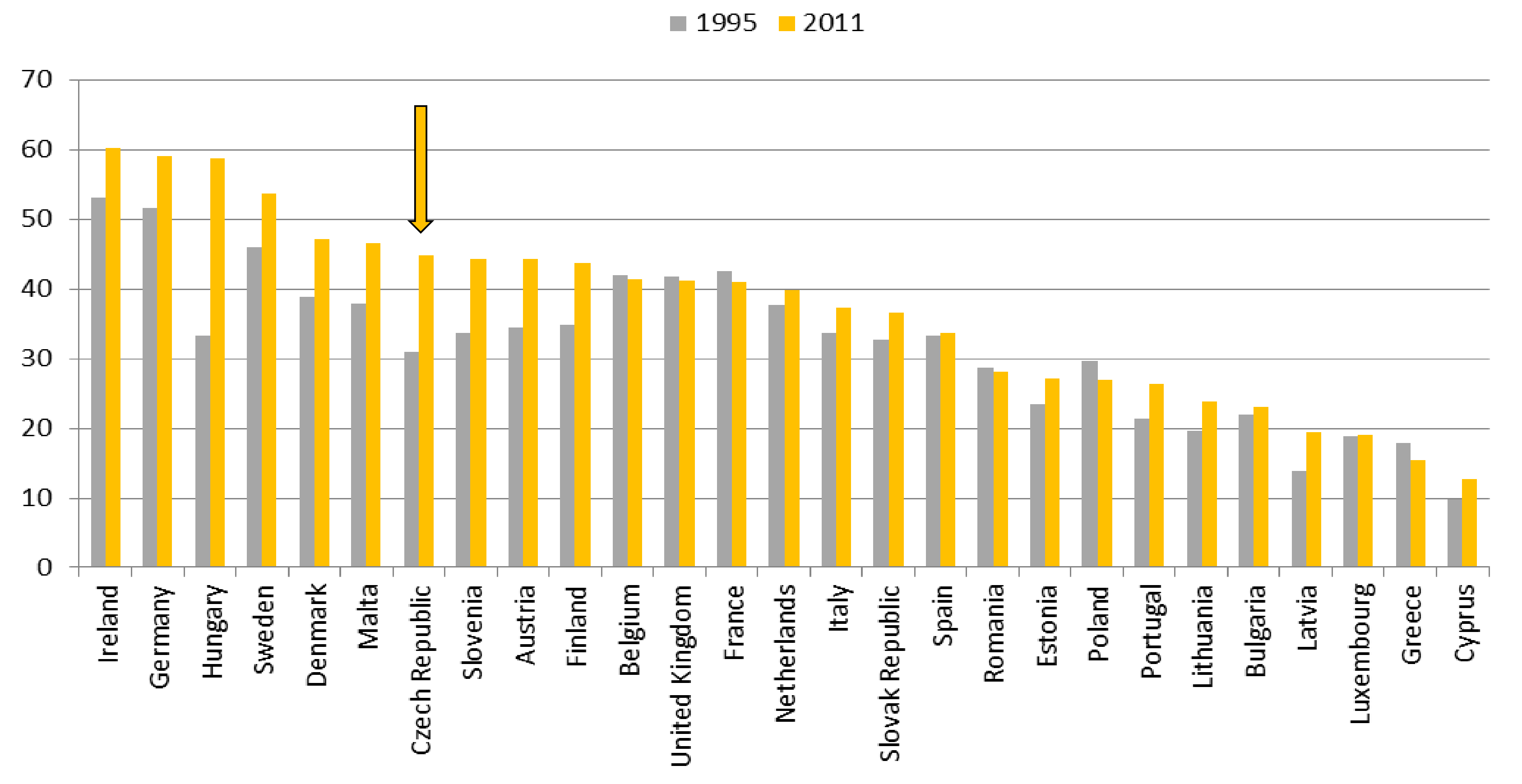
... and specialisation (for some!)

Share of high-tech manufacturing value added in % of manufacturing GDP



Note: Countries ranked according to shares in 2011
Source: WIOD Release 2013, wiiw calculations.

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Explanations for the European 'Manufacturing core'

- Historical patterns (pre WW I) emerging again
- Export specialisation (on capital goods) meeting demand from fast-growing emerging markets together with appropriate capabilities
- Efficiency gains from regional production integration following EU enlargement
- Skilled/trained work-force attracting FDI
- Improved cost competitiveness through productivity improvements together with wage moderation (DEU, AUT)

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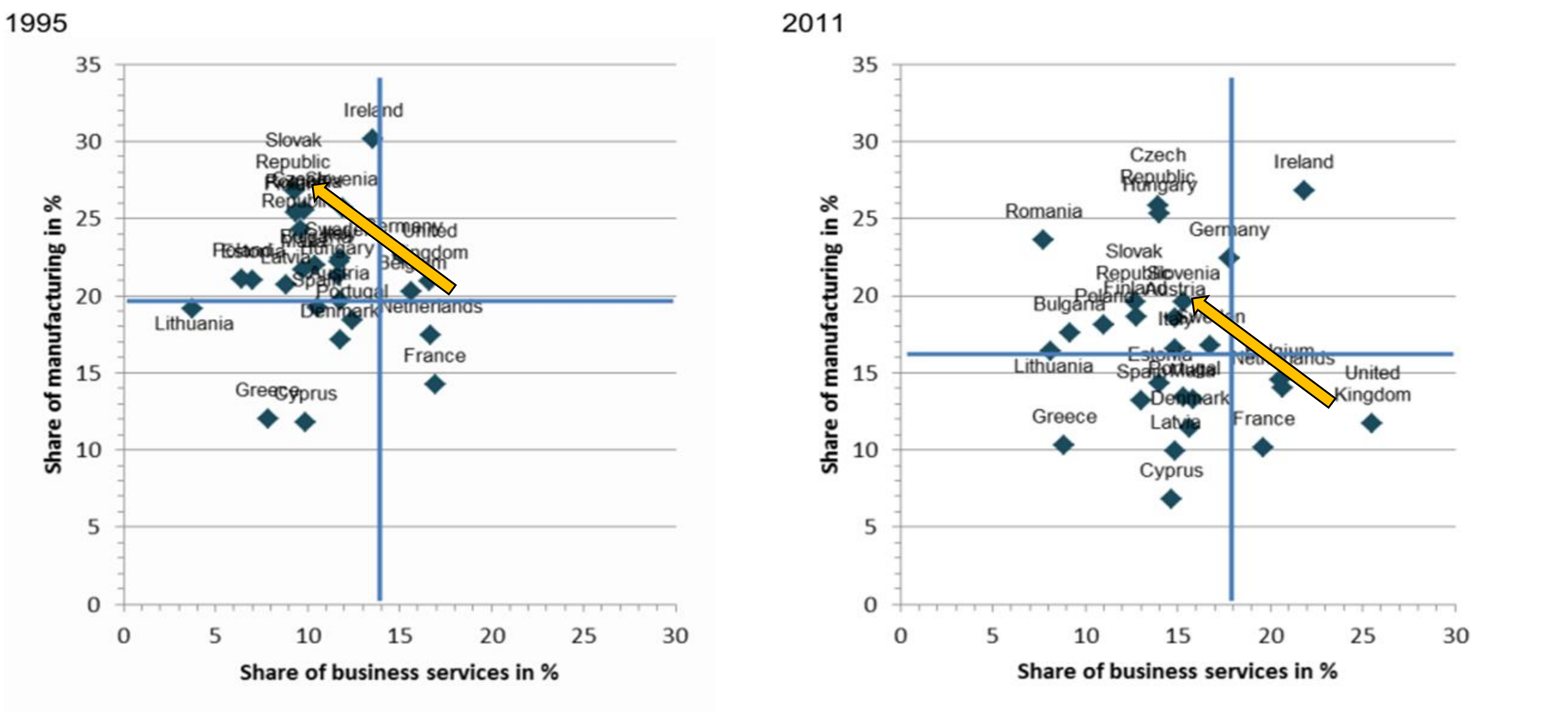
Europe has become more diversified ...

Figure 2.2 – Emergence of a manufacturing and a business services core in Europe



Note: Blue lines indicate EU-27 shares.

Source: WIOD; wiiw calculations.

Source: Stehrer et al. (2014), Study on the relation between industry and services in terms of productivity and value creation, Study for the Directorate-General for Enterprise and Industry, 2nd interim report.

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Automotive industry: Role model or lock-in?

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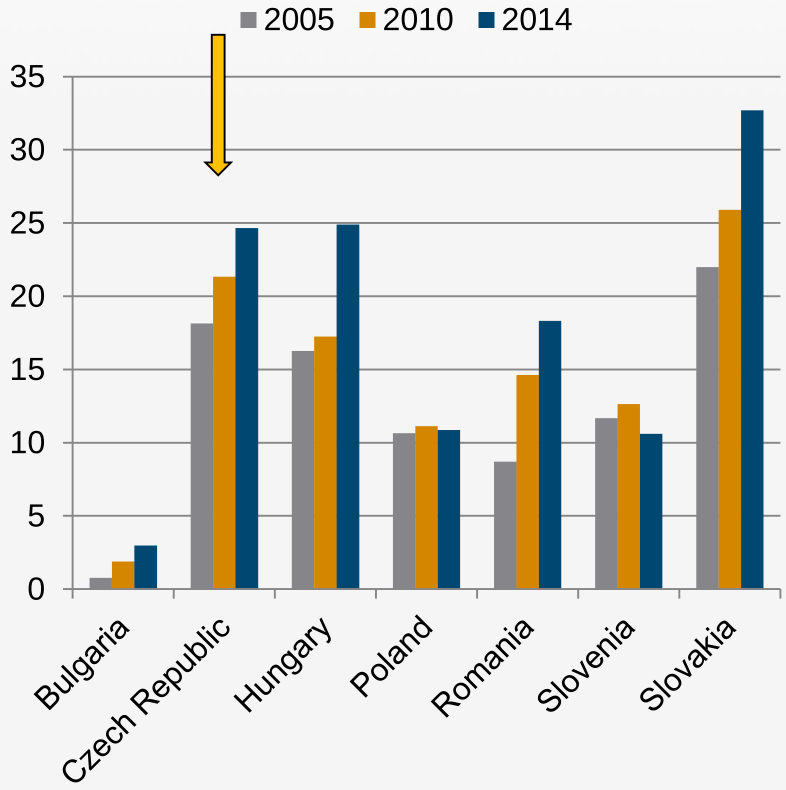
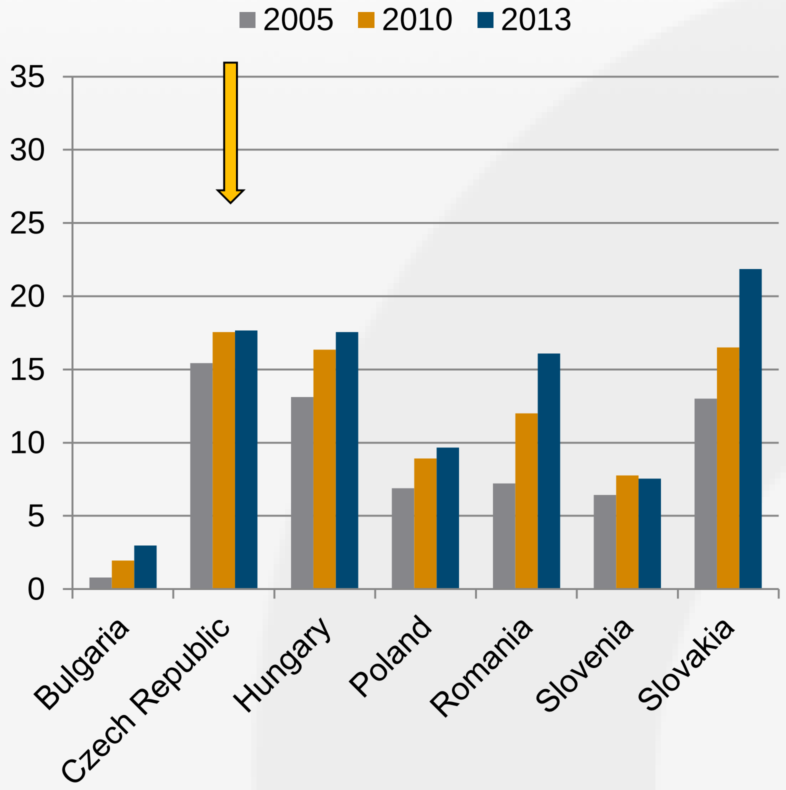
Automotive industry: main sector and growth driver

Share of automotive industry (NACE Rev.2 29) in manufacturing

Production shares



Value added shares



Source: Eurostat SBS.

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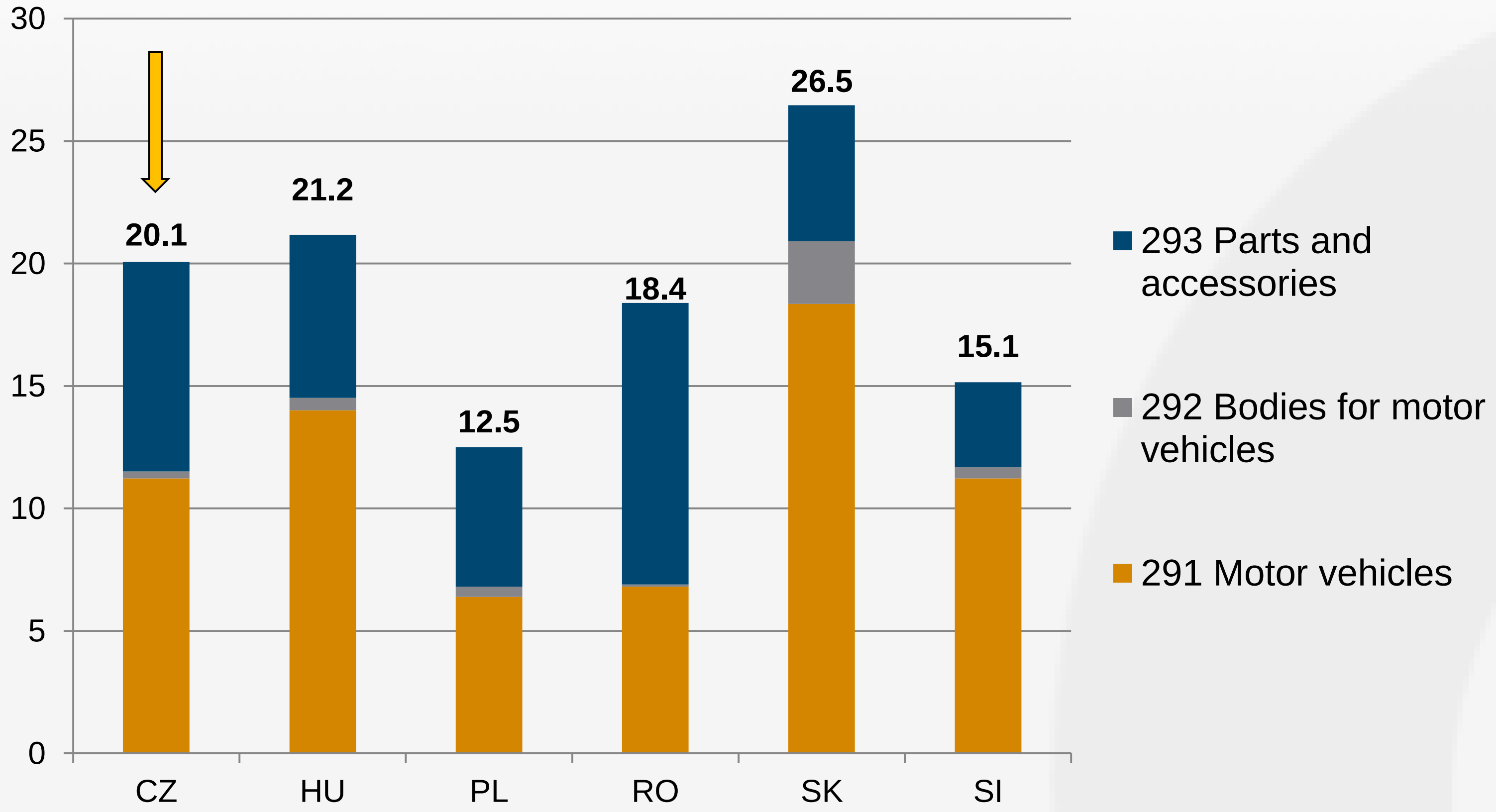
The automotive industry as the main exporter

Automotive industry exports (NACE Rev.2 29), 2014, in % of total exports and by product groups



Source: Eurostat COMEXT.

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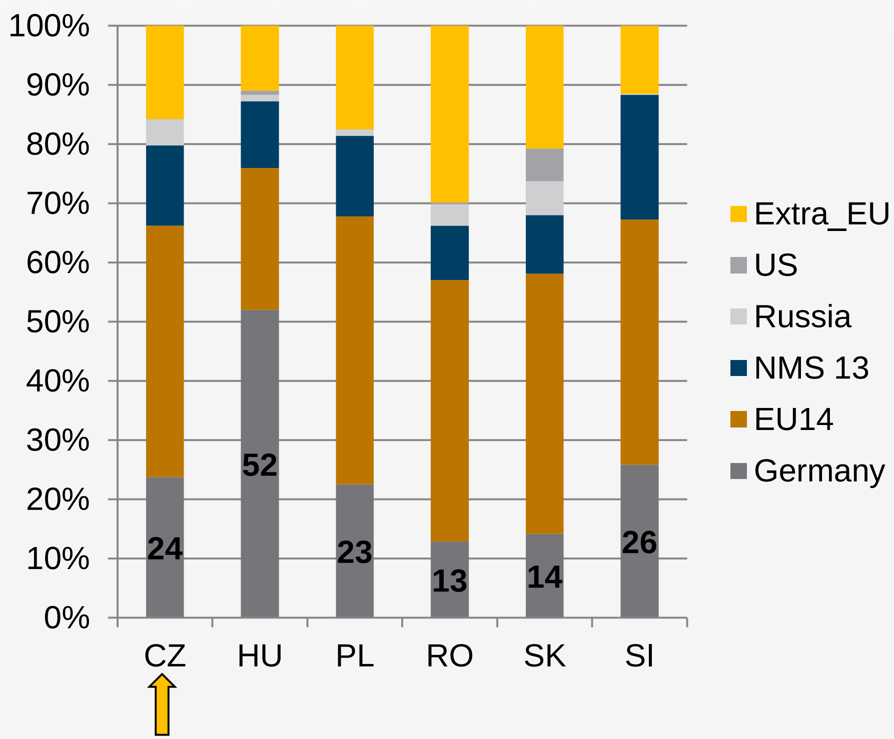
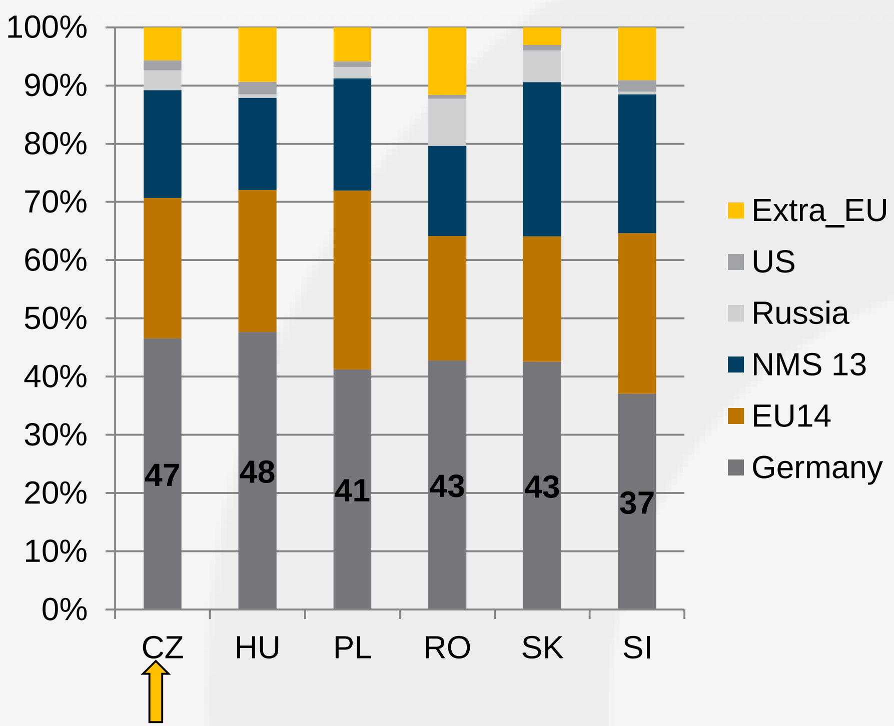
Strong export orientation towards the EU and Germany

Automotive industry exports, 2014, by region

291 Motor vehicles



293 Parts and accessories



Notes: EU-14 (Western Europe); NMS 13 (New Member States) without the respective country.

Source: Eurostat COMEXT.

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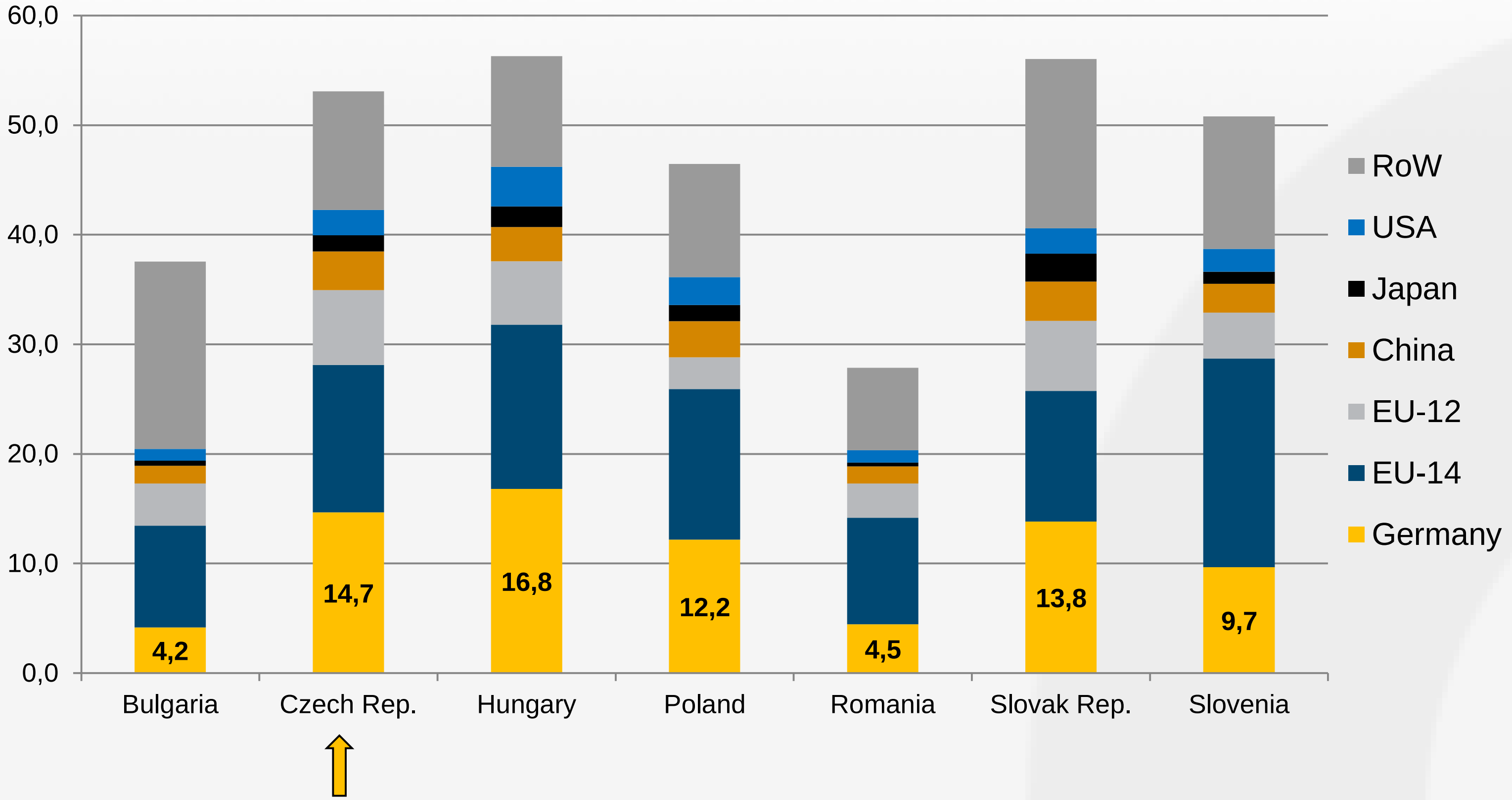
…. but German imports also important

Foreign value added content of transport equipment exports, 2011, in % of gross exports



Notes: EU-14 is EU-15 (Western Europe) without Germany; EU-12 means EU-12 (New Member States) without the respective country.

Source: WIOD.

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Automotive industry: Driven by Foreign Direct Investment

Automotive industry overview (NACE Rev.2 29), 2014

	Production		**Employment** [1)]		**Foreign direct investment** [2)]	
	in mn EUR	in % of manuf.	ths. Persons	in % of manuf.	in mn EUR	in % of manuf.
Bulgaria	794.3	3.0	12,736	2.5	n.a.	n.a
Czech Republic	35,371.5	24.7	140,746	13.2	9,418	30.0[3)]
Hungary	21,625.4	24.9	74,204	11.6	3,799	18.7
Poland	27,510.6	10.9	161,792	7.5	9,222	18.3
Romania	12,023.6	18.3	137,374	11.9	3,244	16.8
Slovakia	20,812.0	32.7	61,758	16.0	3,323	24.4[3)]
Slovenia	2,378.8	10.6	12,189	6.9	495	15.0

Notes: 1) Employment defined as number of employees, 2013.
2) Inward FDI stock for CL " Manufacture of transport equipment". 3) 2013.

Source: Eurostat SBS; wiiw FDI Database.

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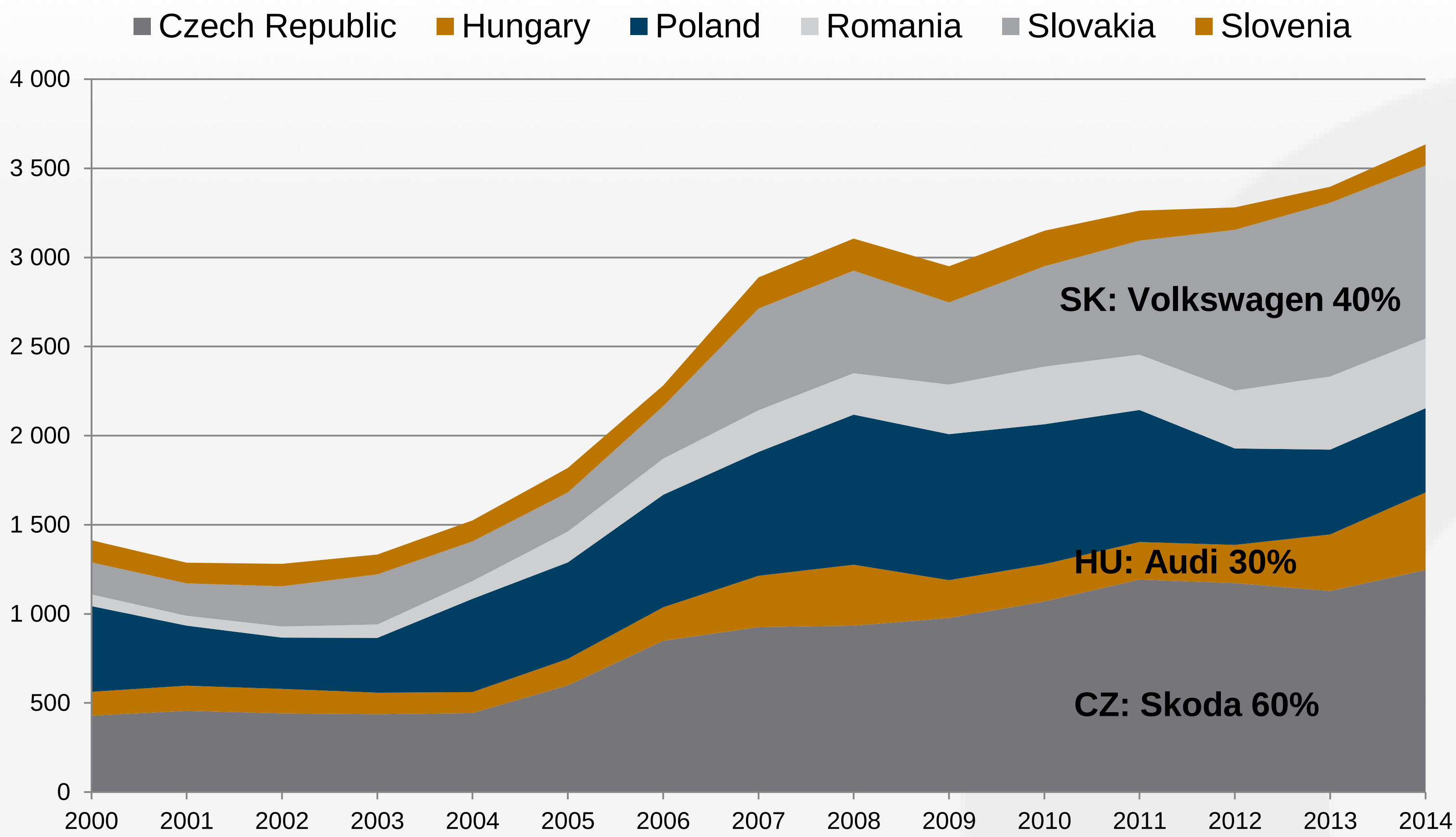
Producers in the CEE

Passenger car production, in thousands and share of VW production



Source: OICA – International Organization of Motor Vehicle Manufacturers, www.oica.net.

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Lock in? The only way is up the value chain ...!

- Specialisation within industries or value chains
- Functional specialisation
- Climbing up the value chain

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„Assembled in ...“

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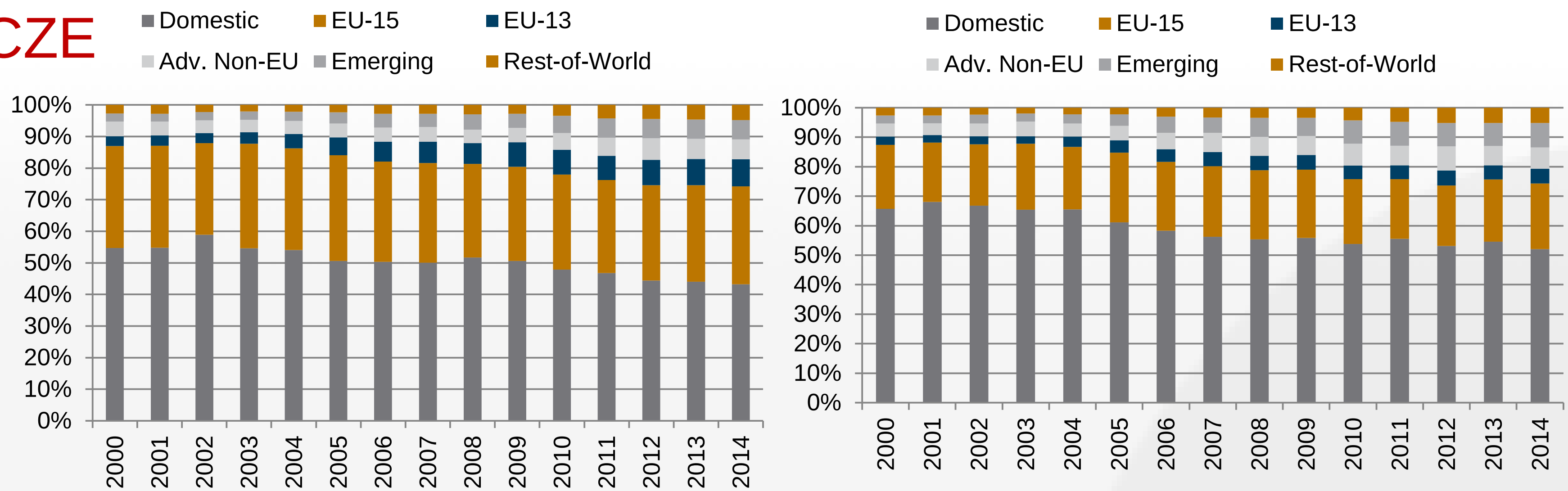
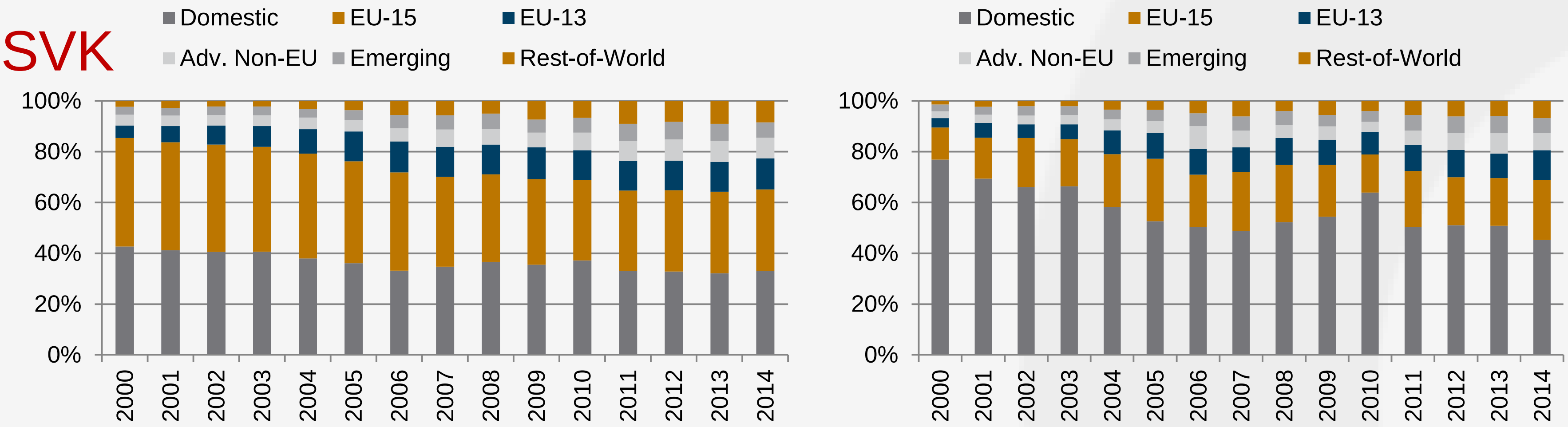
Value added structure of automotive and transport equipment exports, in % of gross exports

CZE



SVK



Source: WIOD Release 2016.

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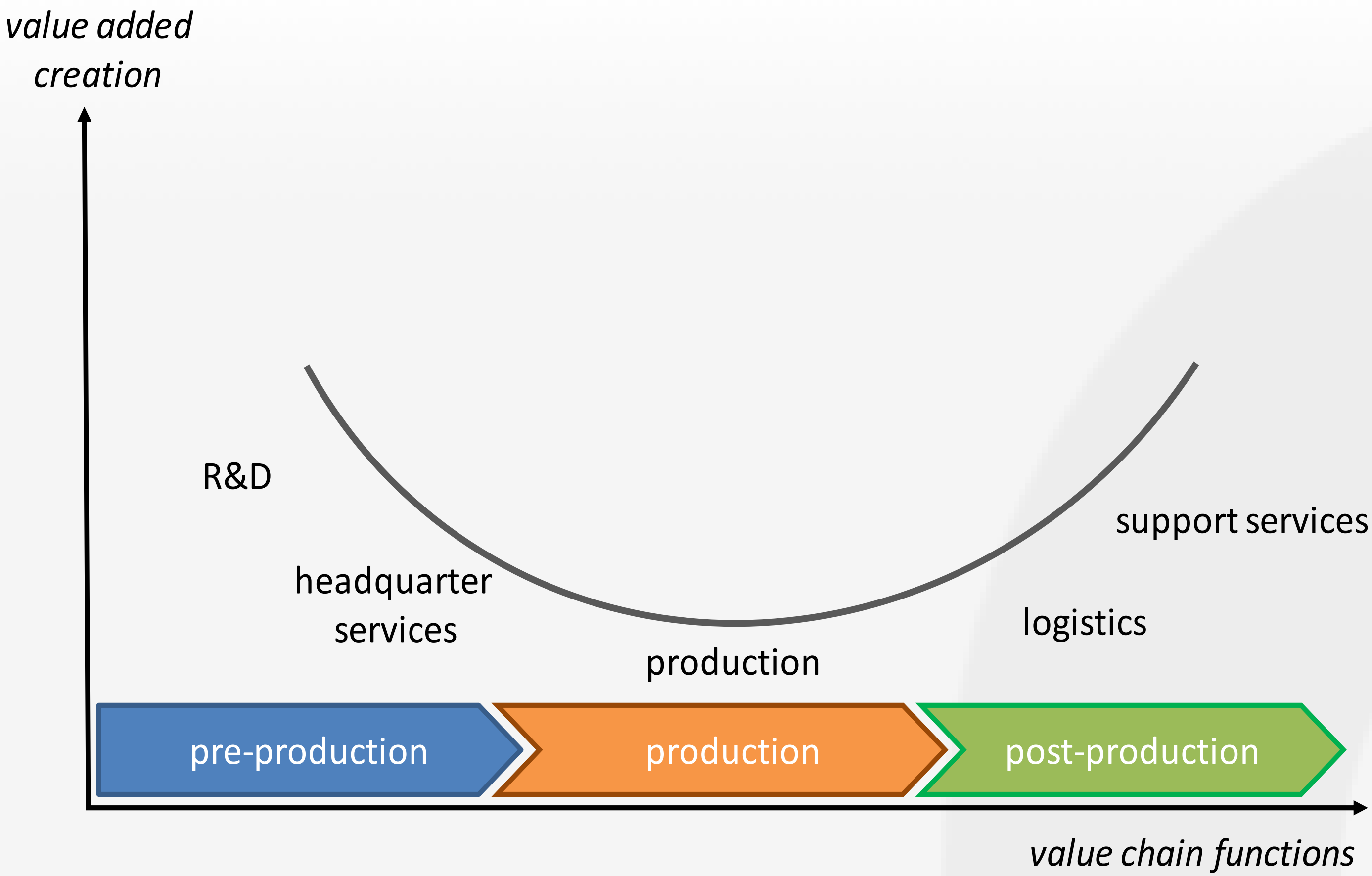
Climbing up the value chain – the Smile curve



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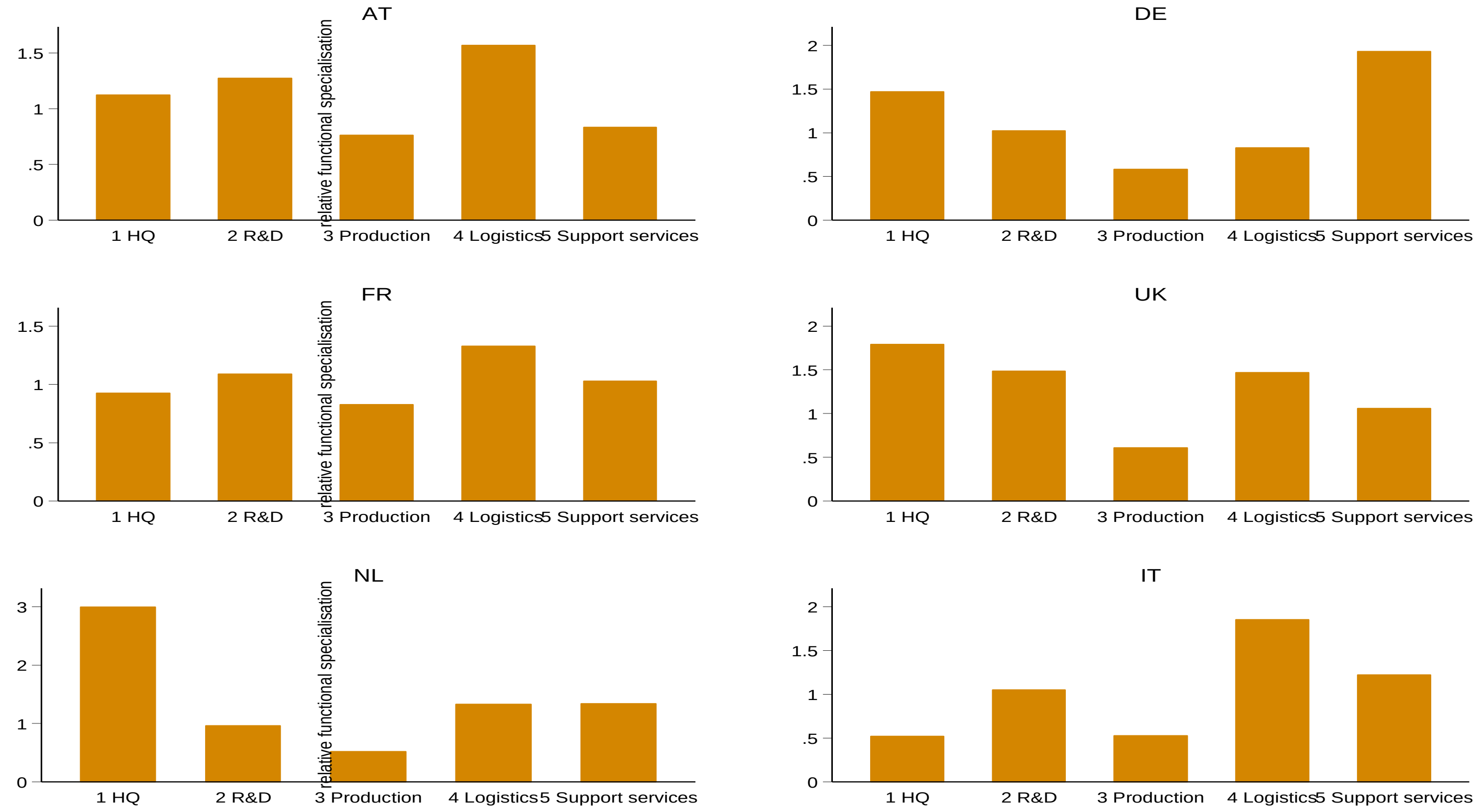
To smile ...

Functional specialisation in selected Western EU core countries, averages 2003-2015



Source: R. Stöllinger, work in progress

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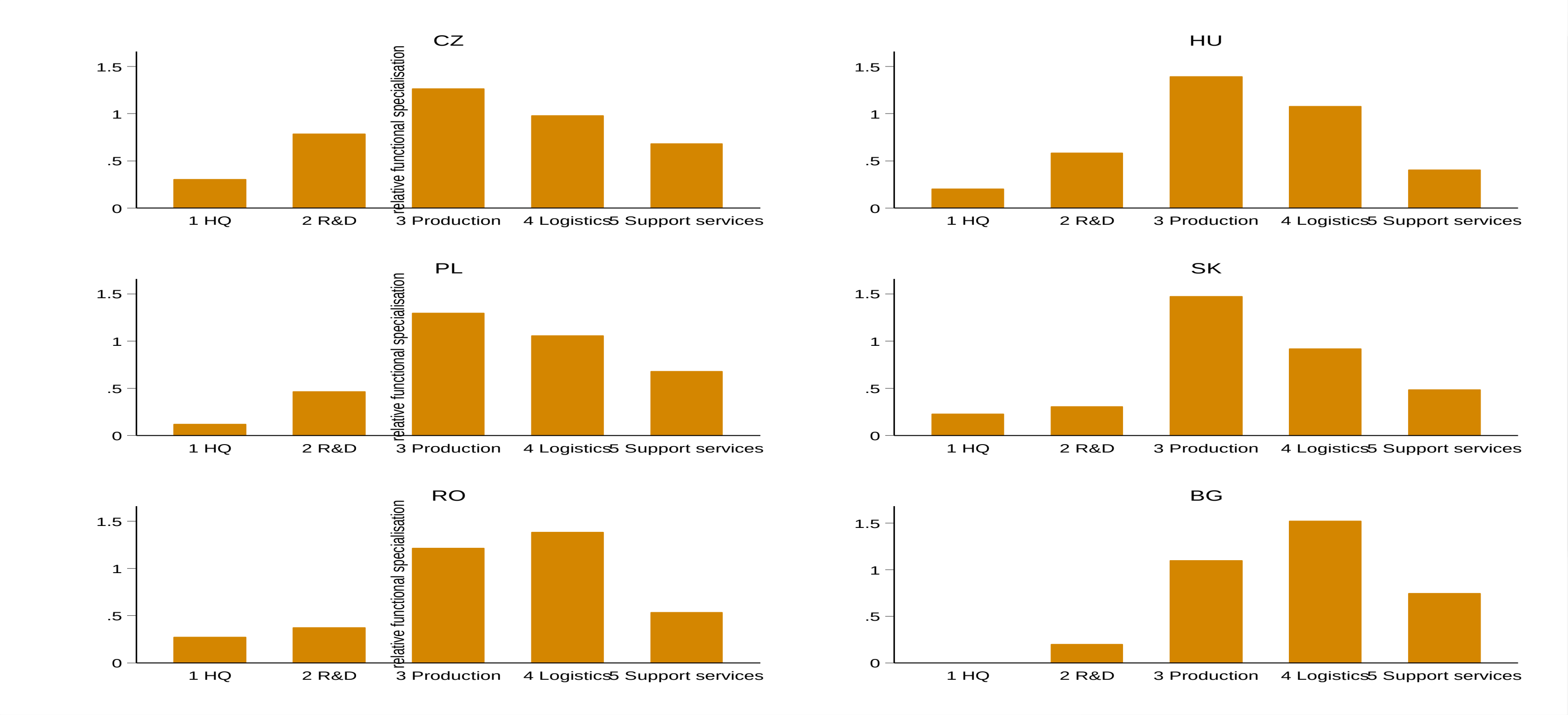
... or not to smile?

Functional specialisation in Visegrad-4 countries, Romania and Bulgaria, averages 2003-2015



Source: R. Stöllinger, wiiw; work in progress

How to escape the ‚functional specialisation trap‘?

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Future trends and challenges

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Future global trends and challenges*

- Global shift towards Asia will continue
  - 2016: EU-CEE: 3.7% of global production (3.4 mn cars)
  - 2023: EU-CEE 3.5% of global production (3.9 mn cars)
- Demographic challenge and labour shortages (particularly in EU-CEE)
  - Wage pressure, competitiveness, skill shortage
- Technological developments
  - Electrified cars (hybrid cars) 5-10%, autonomous driving, car-sharing, connected driving
  - Robotisation of production
- Other (global): Urbanisation; climate change and resources

*Based on WKÖ, 2017.(based on study by PwC)

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Conclusions

- Convergence process derailed but maybe re-emerging -but less strong and less ‘automatic’
- Position in European (global) value chains and division of labour matters (e.g. EU manufacturing core)
  - Spillover effects from international integration matter
  - However, the speed of specialisation dynamics slowed down (static allocative efficiency across Europe exploited)
- ‚Allocative efficiency‘ must be seen as a dynamic concept
  - Due to strong specialisation (lock-in): position in value chains and upgrading potentials)
  - as a dynamic concept (technology and knowledge upgrading, patterns of specialisation within value chains)
  - Role of domestic factors becoming more important

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Thanks for attention!

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Add on 1: How devastating would be a trade war?

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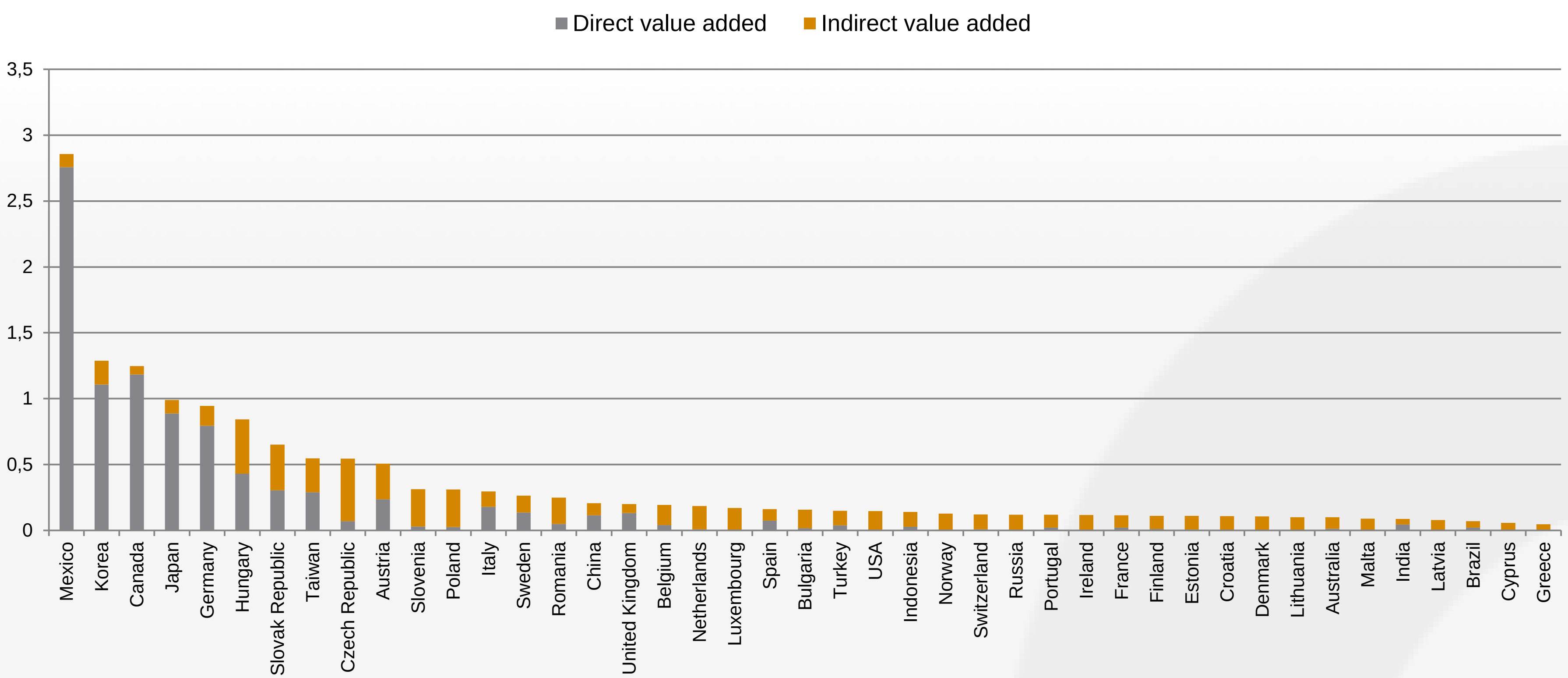
Share of GDP due to ‚car consumption in US‘



Source: WIOD Release 2016; own calculations.

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