

Automotive industry of East-Central Europe: Dependent growth and truncated development in the integrated periphery

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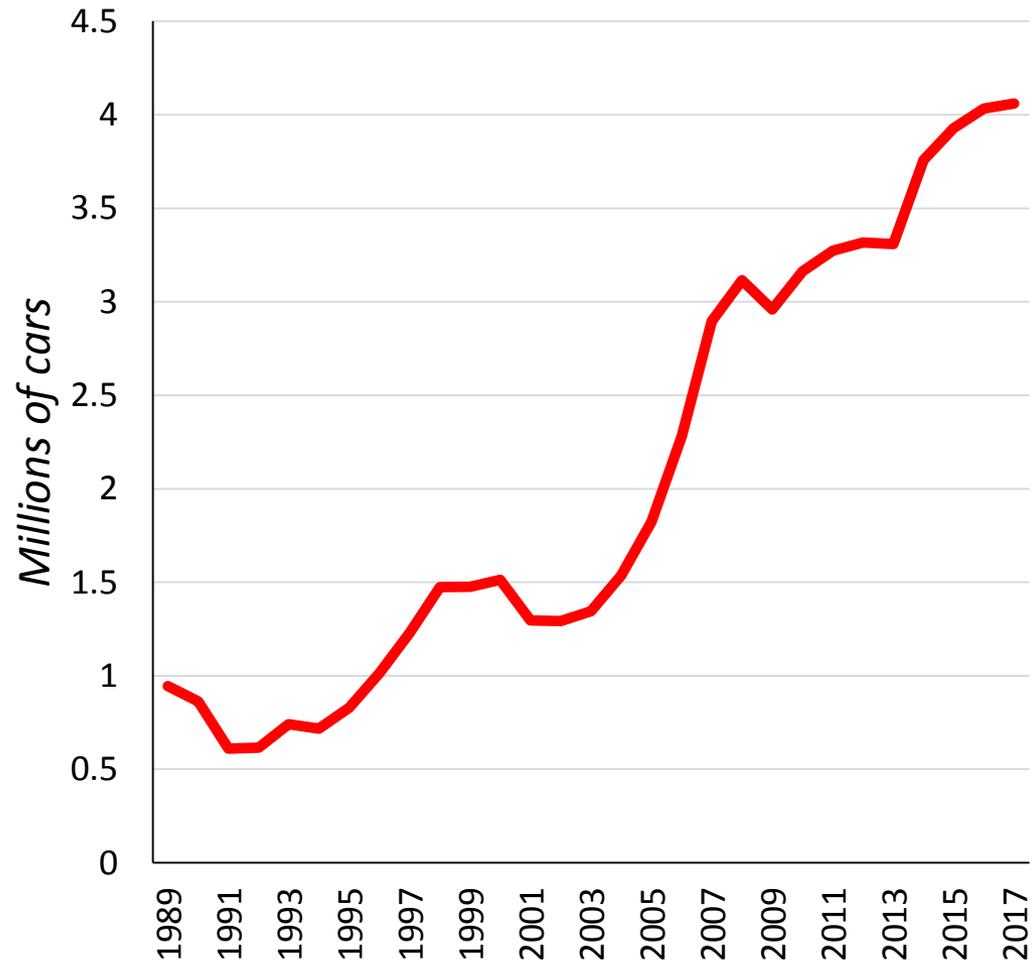
PRESENTATION OUTLINE

- East-Central Europe: the integrated periphery of the European automotive industry
- Reasons behind the growth of the automotive industry in ECE
- FDI-dependent and truncated development
- Regional development and long-term effects of the growth of the automotive industry in ECE
- Whose success?

ECE AUTOMOTIVE INDUSTRY AFTER 1990

- FDI-based export-oriented growth
 - Low production costs (low wages and corporate taxes)
 - Geographic proximity to Western Europe
 - EU membership
 - FDI-friendly state policies: investment incentives

Car production in ECE, 1989-2017



THE INTEGRATED PERIPHERY OF MACRO-REGIONAL PRODUCTION NETWORK

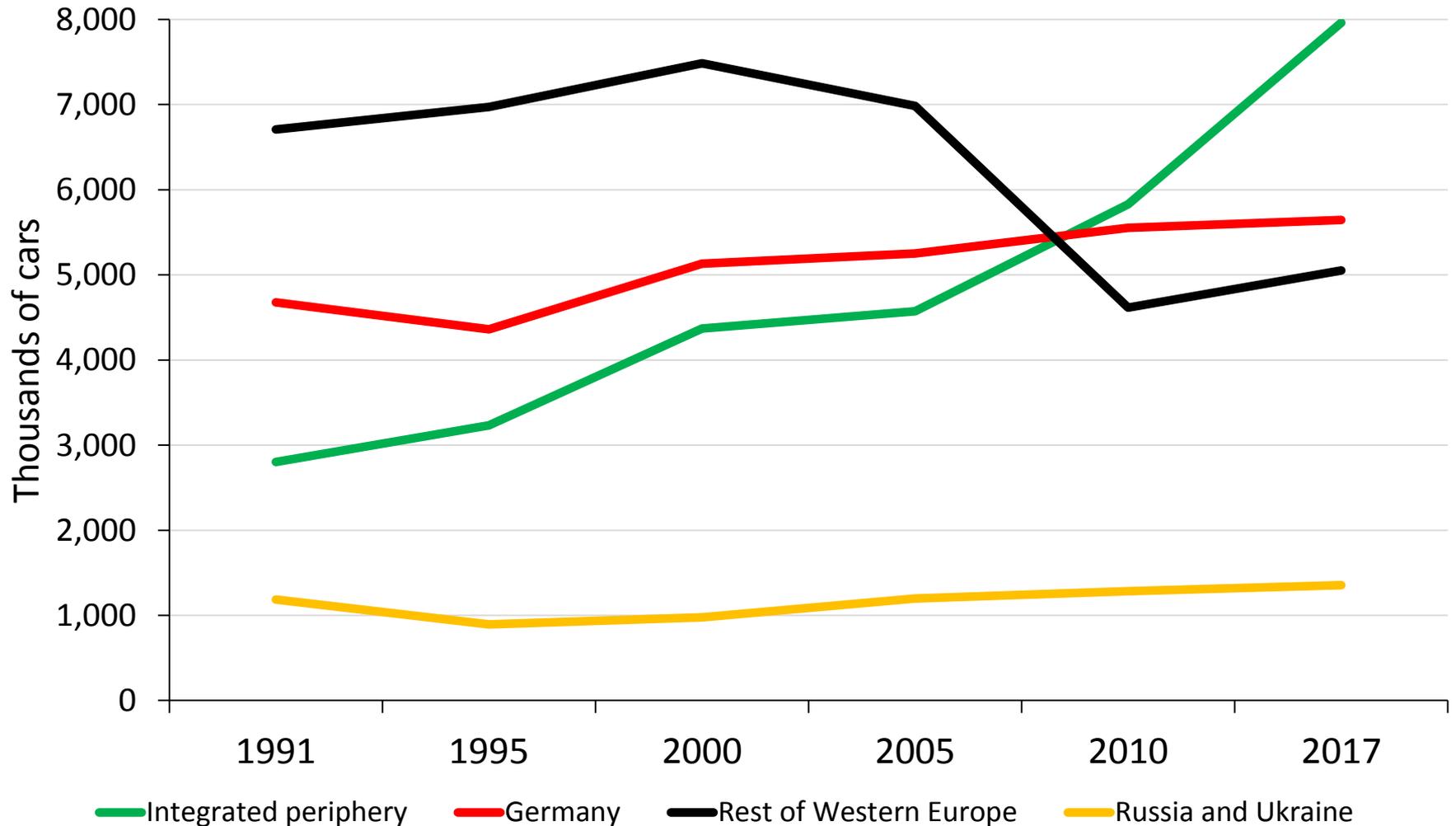
■ Selective integration of the periphery into the core area of the European automotive production system through massive FDI

■ More than €35 billion invested between 1990 and 2015

■ More than 1,200 new supplier plant built between 1997 and 2015



CAR PRODUCTION TRENDS IN EUROPE, INCLUDING TURKEY AND MOROCCO, 1991-2017



Integrated periphery: ECE, Spain, Portugal, Turkey and Morocco

SPATIAL ZONES IN CORE-BASED AUTOMOTIVE INDUSTRY MACRO-REGIONAL PRODUCTION NETWORKS

	Core	Semi-periphery	Integrated periphery
Foreign ownership and control	Low to medium	High	Very high
Domestic global assembly firms	Yes	No	No
Number of domestic suppliers in the global top 100	High	Low	None or very low
Structure of automotive FDI	Outflows predominate	Mixed	Inflows predominate
R&D: spending, number of R&D workers, patent applications	High	Medium	Low
Structure of assembled vehicles	High share of expensive vehicles	Mixed	High share of cheap/small vehicles
Structure of produced components	Higher share of technologically advanced components	Mixed	High share of generic and labor-intensive components
Capabilities of domestic suppliers	High	Mixed	Low
Supplier linkages	Predominantly developmental	Mixed	Predominantly dependent
Labor costs per employee	High	Medium to high	Low
Wage adjusted labor productivity	Low	Low to medium	High
Examples	Germany, USA	Britain, Canada	ECE, Turkey, Mexico

PERIPHERAL POSITION OF ECE

- Attributes of the peripheral position of ECE in the European automotive production system
 - Specialization of in the high-volume production of small cars
 - The low-volume assembly of special models
 - The manufacturing of low-value-added, labor-intensive parts and accessories
 - A limited development of R&D and other non-production functions
 - The overwhelming foreign ownership
 - Dependence on the transfer of foreign technology, management systems and R&D from abroad
 - Weak domestic firms
 - Predominantly dependent supplier linkages of domestic firms

Index of foreign
control

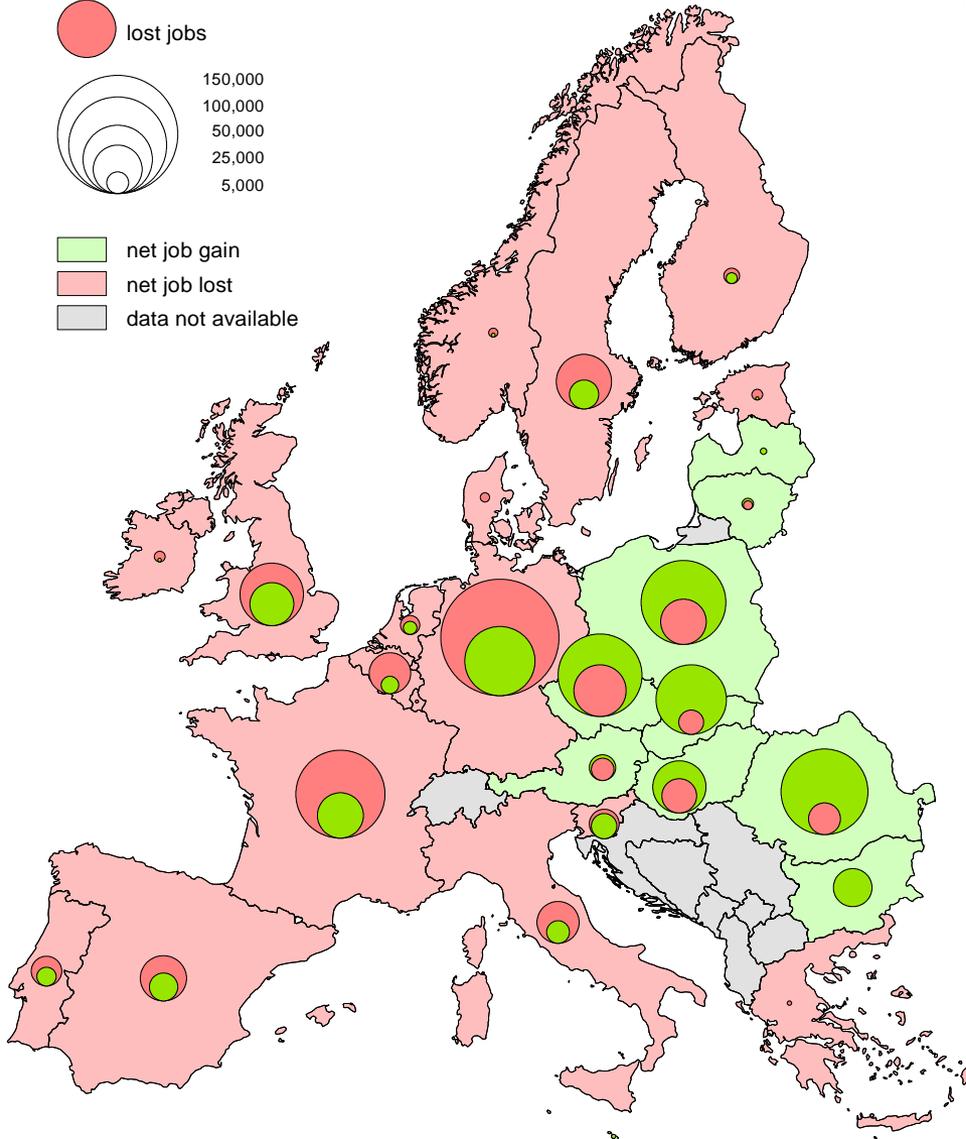
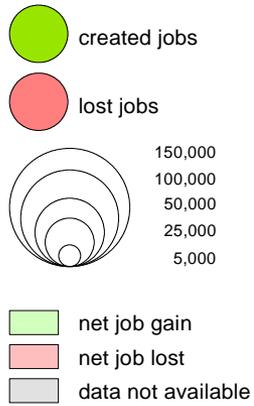
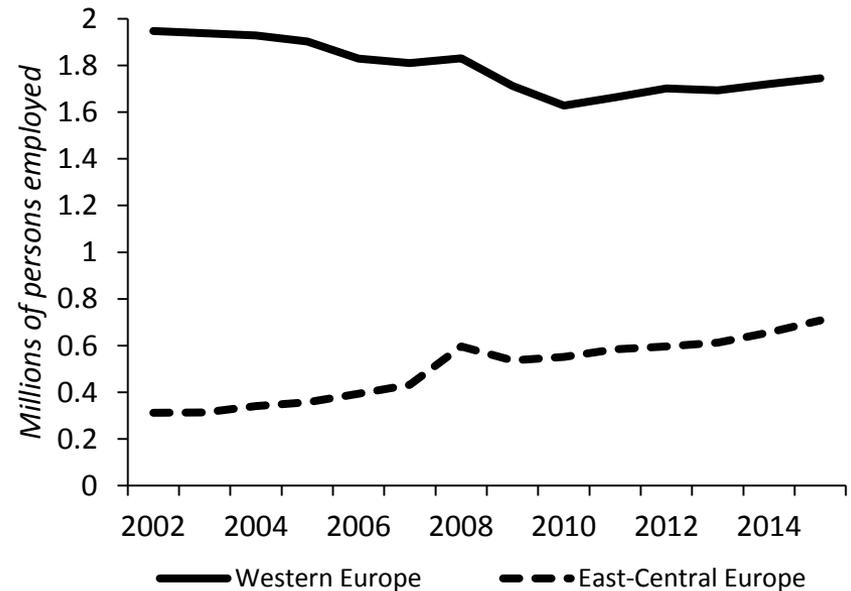
Slovakia	97.1
Hungary	94.9
Czechia	91.4
Romania	90.7
Spain	86.5
Bulgaria	86.5
Poland	86.3
Latvia	86.3
Britain	84.0
Austria	80.0
Portugal	79.7
Lithuania	78.0
Belgium	76.2
Estonia	67.8
Sweden	65.9
Netherlands	65.2
Croatia	61.4
Ireland	61.0
Slovenia	59.3
Finland	35.6
Norway	34.9
Denmark	34.1
France	22.5
Italy	20.9
Germany	14.6

INTEGRATED PERIPHERY: DEPENDENCE ON FOREIGN CAPITAL

- The index of foreign control in the European automotive industry in 2015
 - The index is the average value of the share of foreign controlled enterprises of five indicators in the manufacture of motor vehicles, trailers and semi-trailers (NACE_R2) in 2015: production value, value added at factor cost, gross investment in tangible goods, number of persons employed, and turnover or gross premiums written (Data: Eurostat, 2017).

JOB CREATION AND JOB LOSS BY LARGE FIRMS IN THE EUROPEAN AUTOMOTIVE INDUSTRY, 2005-2016

- Job gains in the integrated periphery of ECE (except for Estonia)
- Job losses in the rest of Europe (except for Austria)



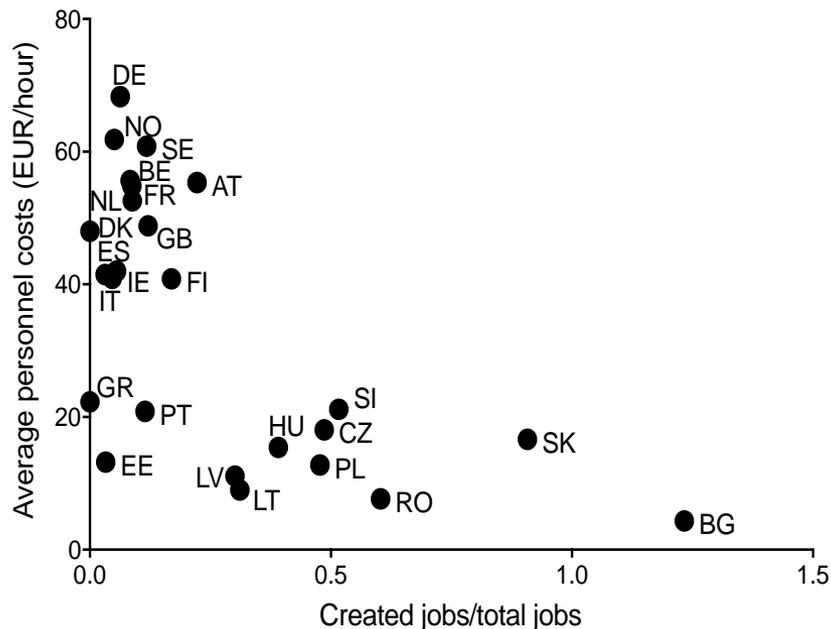
Data: ERM (2017)

Data: Eurostat (2017)

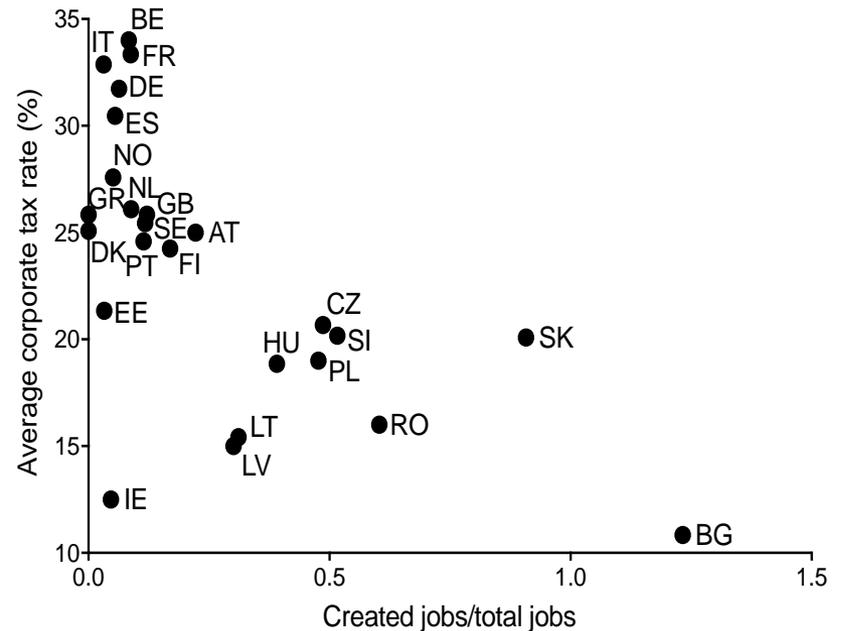
THE GROWTH IN ECE DRIVEN BY LOW WAGES AND LOW CORPORATE TAXES

- The negative correlation between average personnel costs and job creation is statistically highly significant at the 95% confidence interval

The relationship between 2005-2015 average personnel costs in the automotive industry and 2005-2016 jobs created in the automotive industry

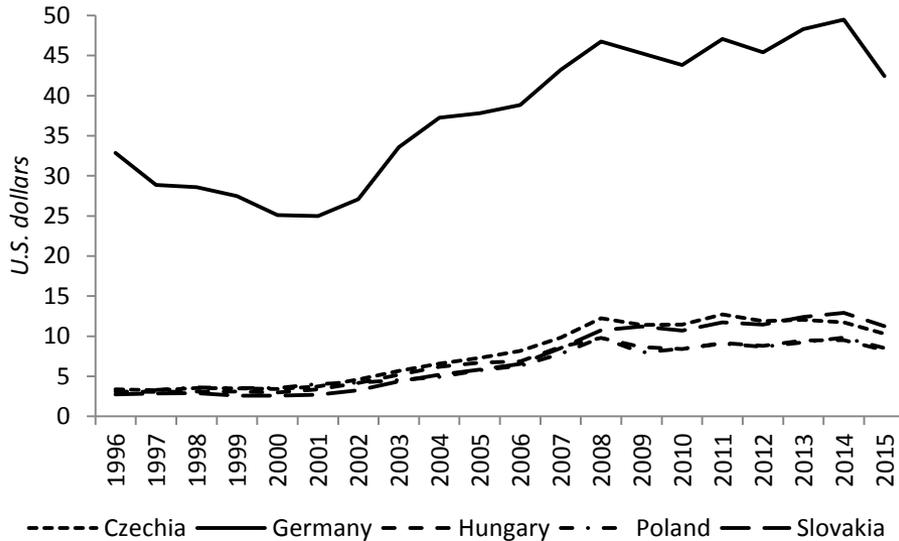


The relationship between 2005-2016 average corporate tax rates and 2005-2016 jobs created in the automotive industry

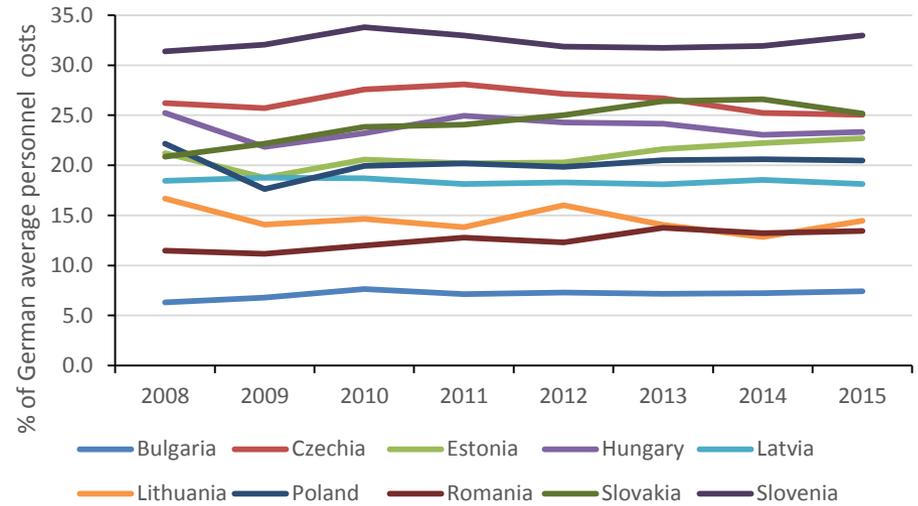


PERSISTENT WAGE GAP BETWEEN GERMANY AND EAST-CENTRAL EUROPE

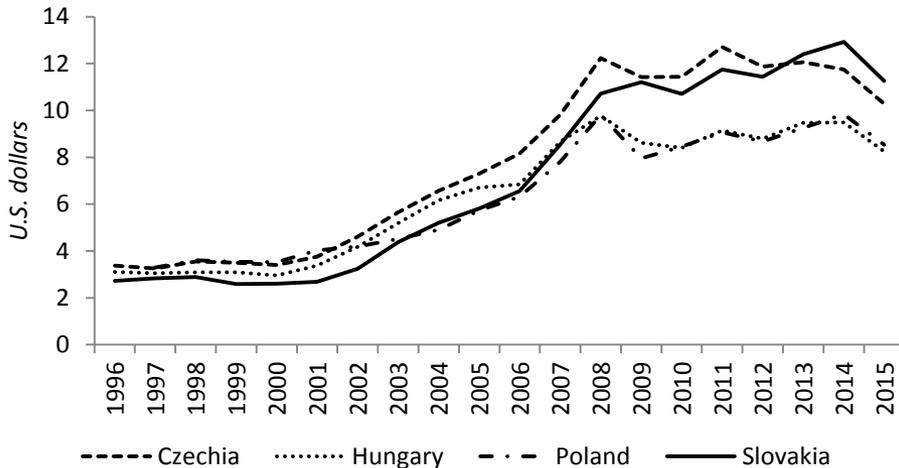
Hourly manufacturing wages



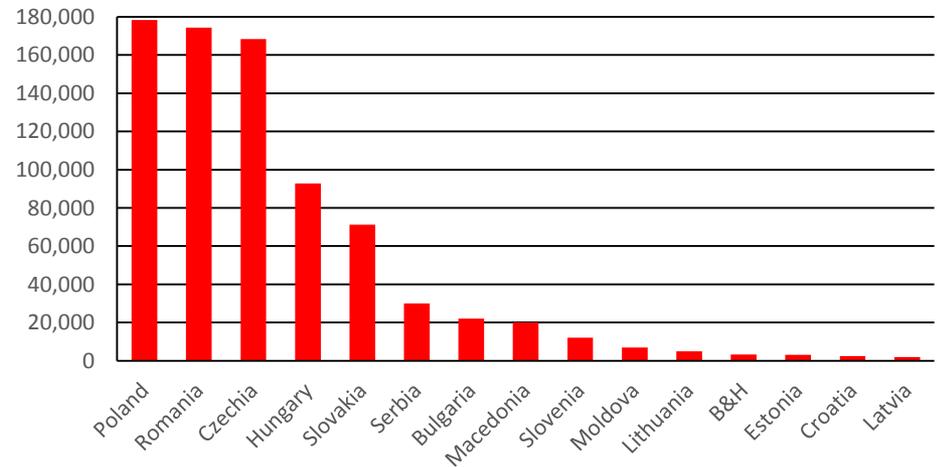
ECE average personnel costs, NACE 29



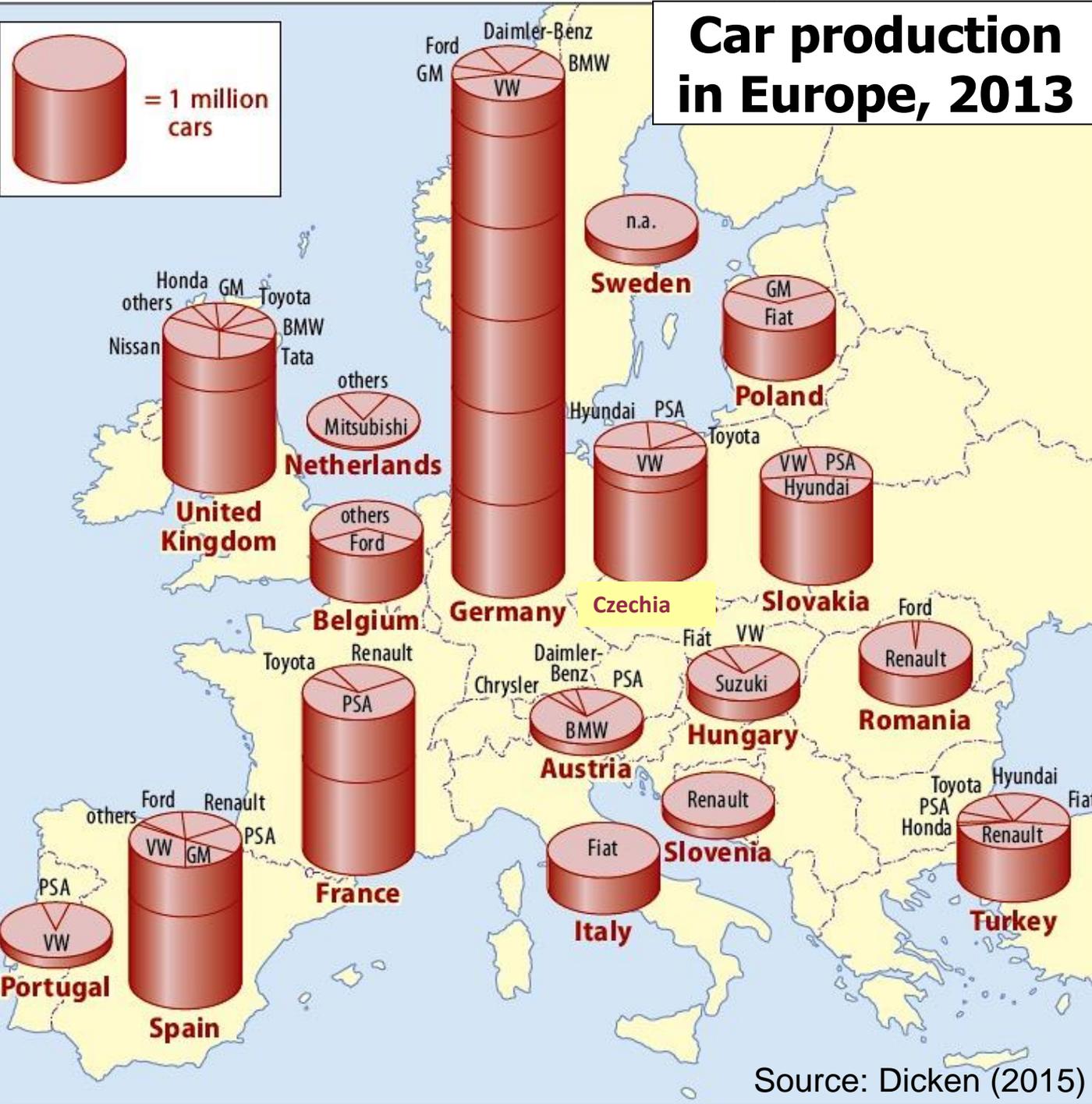
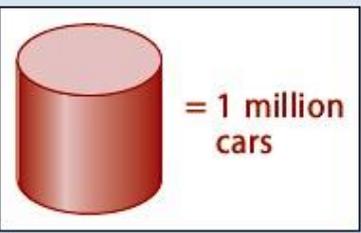
Hourly compensation costs in manufacturing



Number of employed, NACE 29, 2016



Car production in Europe, 2013



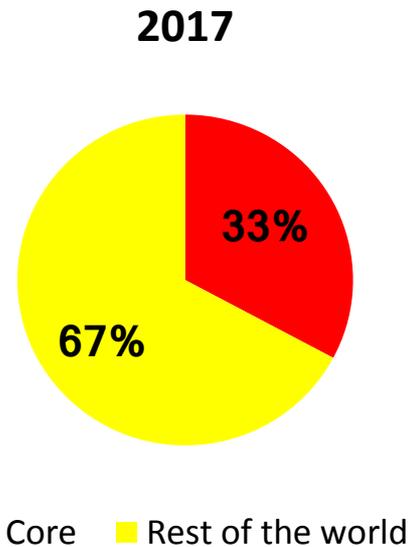
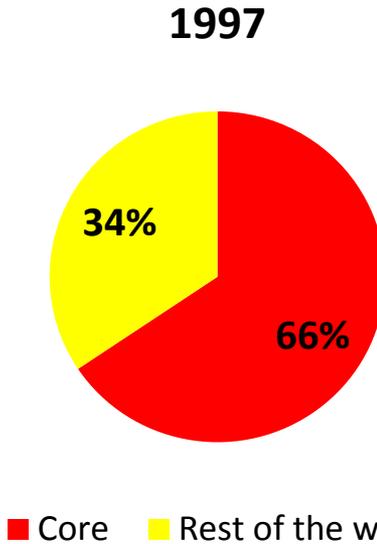
Shift in the automobile production in Europe

Car production shares in 2017:

- **Western Europe:** 72.4% (89% in 1990)
- **Eastern Europe:** 27.6% (11% in 1990)

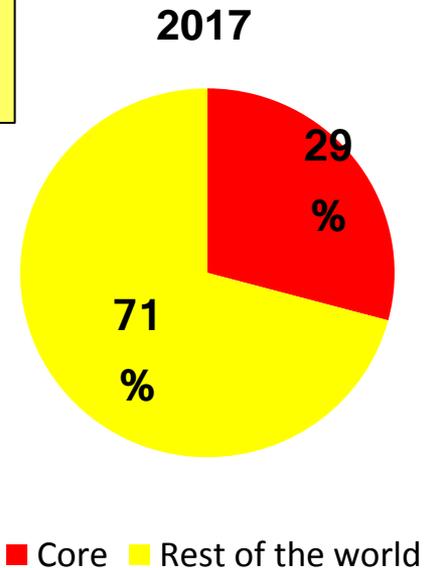
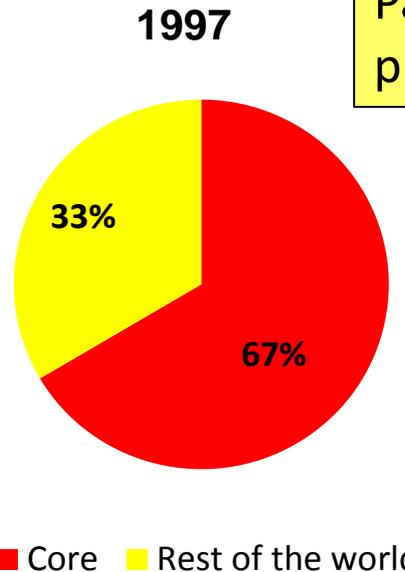
GROWTH IN ECE: PART OF THE GEOGRAPHIC SHIFT IN THE GLOBAL AUTOMOTIVE INDUSTRY

Total vehicle production



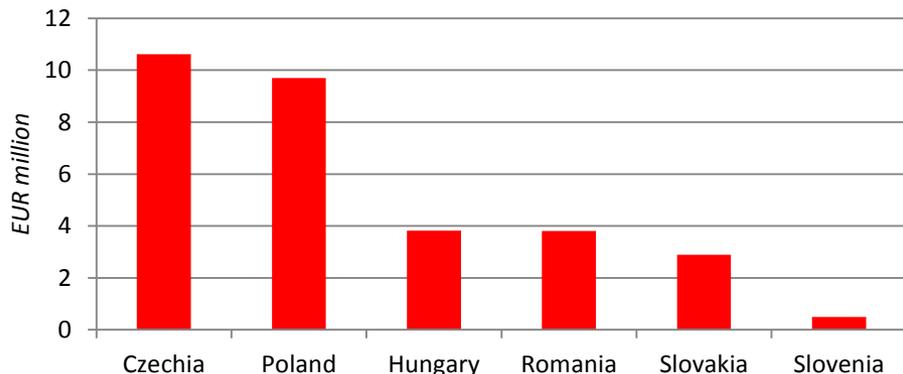
The share of the vehicle production in the automotive industry core and the rest of the world, 1997 and 2017

Passenger car production

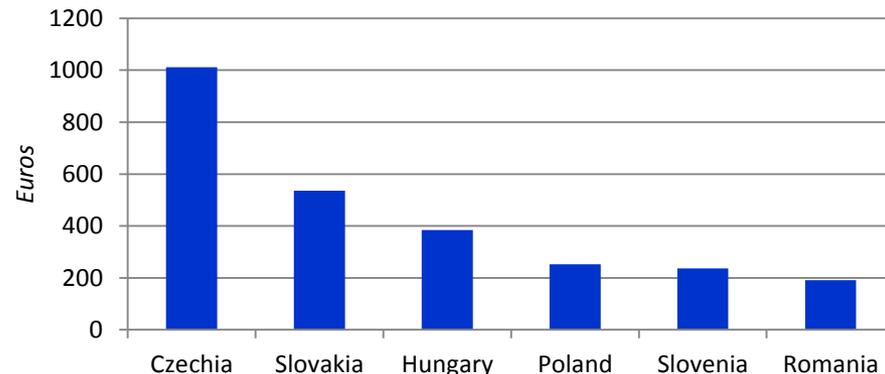


GEOGRAPHY OF FDI-DEPENDENT DEVELOPMENT OF THE AUTOMOTIVE INDUSTRY IN ECE

FDI stock automotive industry, 2014

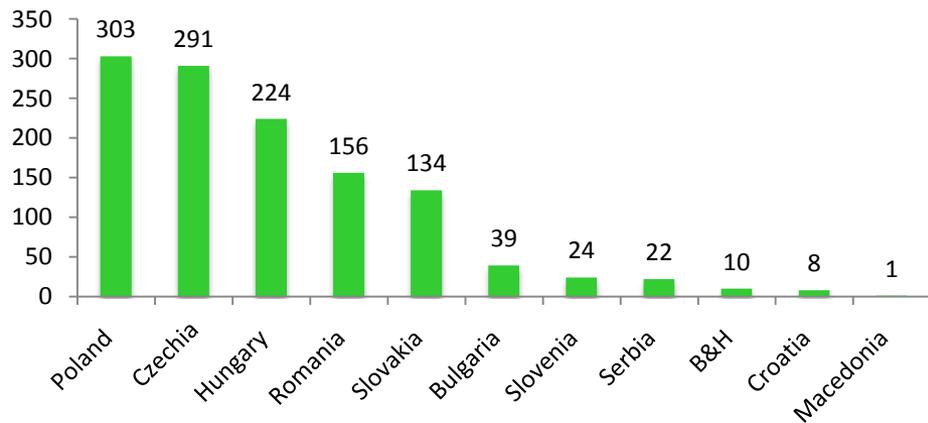


FDI stock per capita, 2014

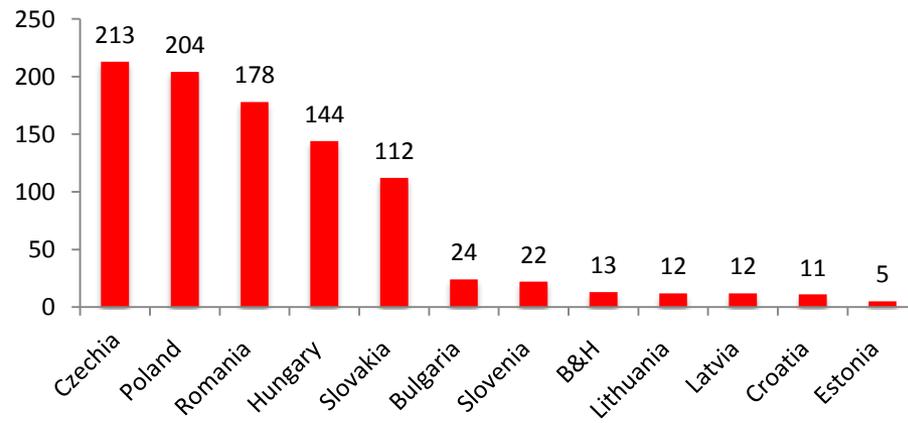


Sources: National banks of individual countries

Number of FDI investments in new automotive supplier plants, 1997-2016



Number of foreign controlled enterprises in auto industry, 2014

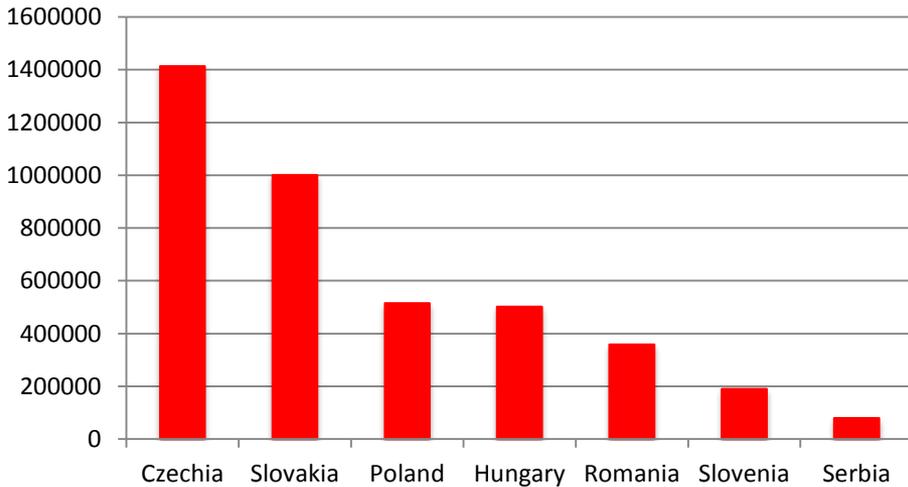


Source: Ernst & Young's and European Restructuring Monitor (2017)

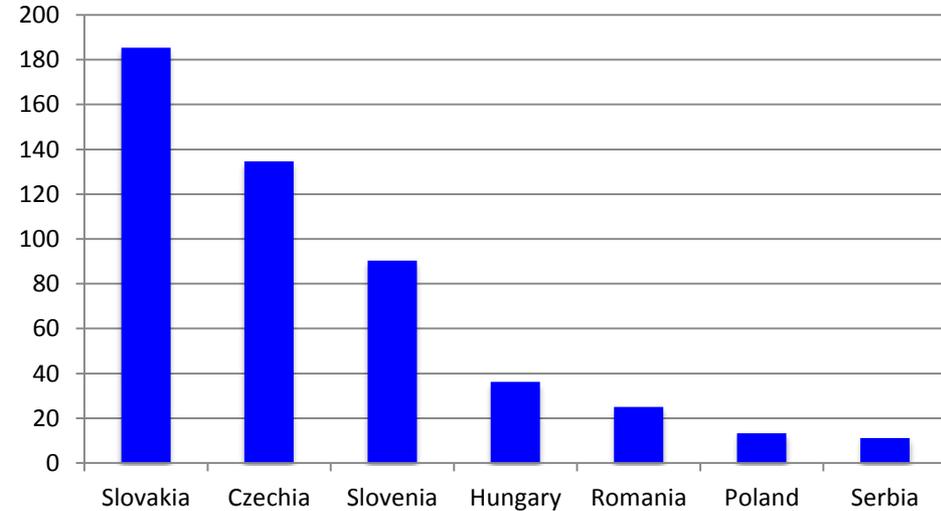
Source: Eurostat (2016)

2017 PRODUCTION OF CARS IN ECE BY COUNTRY

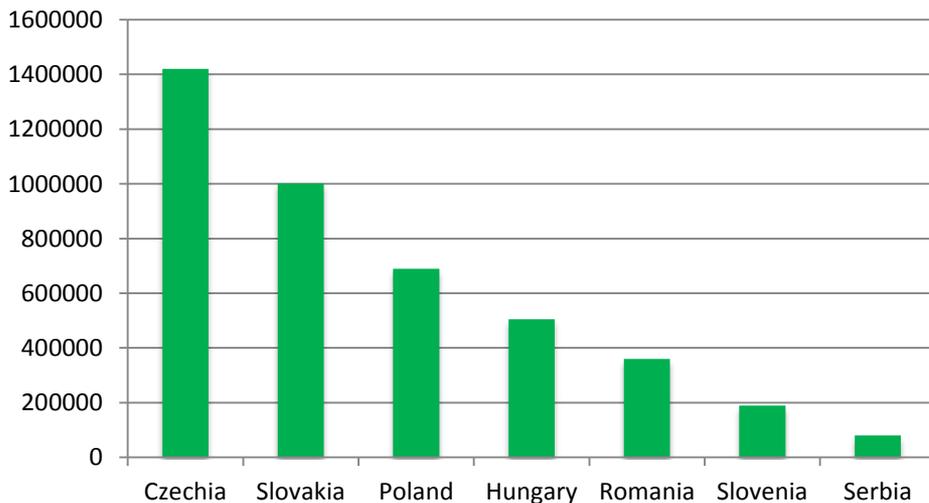
Passenger car output by country, 2017



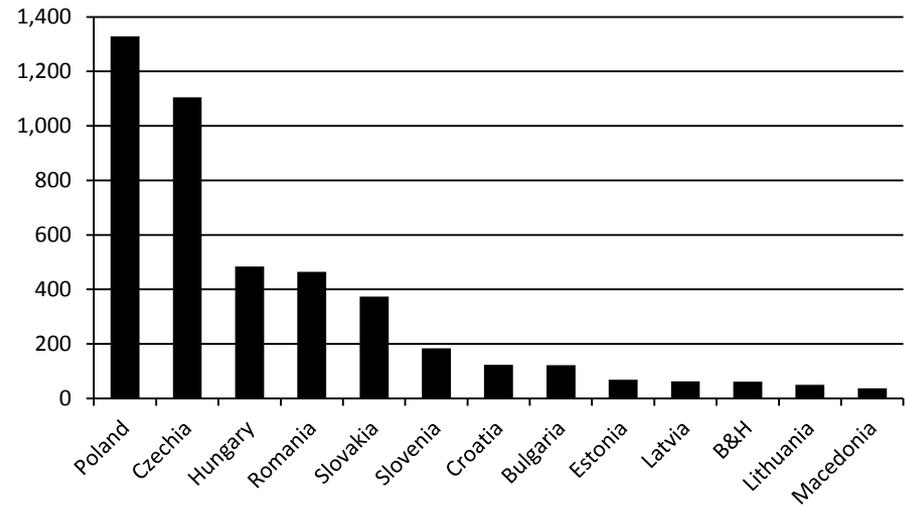
Passenger car output per 1,000 people, 2017



All vehicles output by country, 2017



Number of enterprises, 2016 (NACE 29)



THE ROLE OF THE ECE AUTOMOTIVE INDUSTRY IN THE EUROPEAN DIVISION OF LABOR

- Two basic functions
 - High volume export-oriented production of small cars
 - Low volume export-oriented production of luxury cars (niche market products)
- Testing ground for new production strategies

TRUNCATED DEVELOPMENT

- Truncation (Britton, Hayter, Watts) and the 'branch plant economy'
 - The development of routine low value-added activities in peripheral branch plants
 - The mass production of simple standardized products
 - High value-added activities concentrated abroad
 - Higher-level managerial, decision-making, R&D and other strategic non-production functions
 - The outflow of profits from branch plants and a greater propensity to relocate or close down during economic crises
 - Tends to exacerbate industrial and technological underdevelopment of host economies

Selected functions conducted in foreign-owned automotive industry subsidiaries in Slovakia

	<i>Parent company abroad</i>		<i>Slovak subsidiary</i>		<i>No answer</i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Decisions about what products will be produced	54	93.1	3	5.2	1	1.7
Strategic planning	53	91.4	5	8.6	0	0.0
Investment decisions	50	86.2	8	13.8	0	0.0
Market research	50	86.2	8	13.8	0	0.0
Price setting for produced goods	49	84.5	9	15.5	0	0.0
Marketing of subsidiary products	48	82.8	8	13.8	2	3.4
R&D, design	46	79.3	8	13.8	4	6.9
Supplier selection	43	74.1	14	24.1	1	1.7
Sale and after-sale services	25	43.1	31	53.4	2	3.4
Product distribution	20	34.5	38	65.5	0	0.0
Organization of production	7	12.1	50	86.2	1	1.7
Accounting	7	12.1	51	87.9	0	0.0

N=58, Source: 2010 survey, Pavlínek (2014)

Selected functions conducted in the automotive industry in Czechia: foreign-owned subsidiaries and domestic firms

Functions and competencies	Assembly		Tier 1		Tier 2		Tier 3	
	F	D	F	D	F	D	F	D
Strategic and marketing planning	0	100	33	100	34	92	60	73
Investment decisions	25	100	33	100	38	92	55	74
Supplier selection	0	100	43	100	59	96	55	73
Organization of production	75	100	100	100	100	100	93	90
Market research	50	100	25	100	63	96	54	73
Decisions about what will be produced	0	100	38	100	41	96	56	70
Price setting for produced goods	50	100	48	100	56	96	57	74
Marketing of subsidiary products	50	100	33	100	50	92	50	71
Accounting and financial operations	75	100	100	100	100	100	92	90
R&D, design	50	100	50	100	45	88	53	71
Product distribution	50	100	85	100	81	96	66	73
Sale and after-sale services	50	100	50	100	66	92	57	69
Average	40	100	53	100	61	94	62	75

Notes: F denotes foreign firms, D denotes domestic firms. The number of firms answering individual questions ranged from 150 (for accounting and financial operations) to 192 (for strategic and marketing planning, decisions about what products will be produced, supplier selection, price setting for produced goods, and marketing of subsidiary products).

Source: 2009 Authors' survey.

N=58, Source: Pavlínek and Ženka (2016)

DEVELOPMENT OF AUTOMOTIVE R&D IN INTEGRATED PERIPHERIES

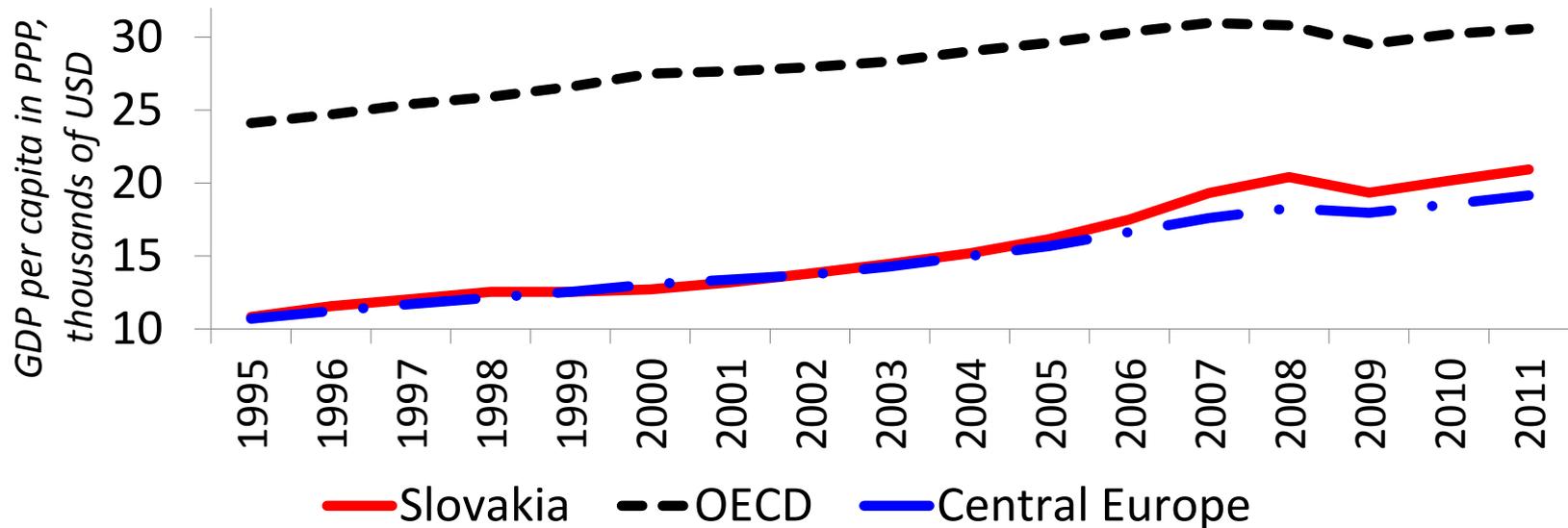
- Limited chances of countries located outside the automotive industry core to attract sizeable higher-order R&D functions
- Disproportionately weak automotive R&D in ECE
- Continuing concentration in the West European core (Germany in particular) and other automotive industry core countries
- Automotive R&D concentration in the European auto core tended to increase rather than decrease

CONSEQUENCES OF FDI-DRIVEN DEVELOPMENT OF THE AUTOMOTIVE INDUSTRY IN EAST- CENTRAL EUROPE

- ECE has become specialized in labor intensive manufacturing
- Control, R&D and other higher value-added functions, such as marketing and branding, remained concentrated in the global economic core
- Limited prospects of upgrading and catching-up

PROBLEMATIC NATURE OF STATE INDUSTRIALIZATION STRATEGIES BASED ON LARGE INFLOWS OF FDI

- FDI represents a double-edged sword
 - It can lead to rapid industrialization and economic growth: Slovakia and Poland: some of the fastest rates of economic growth in Europe since 2000



- But at the expense of truncation, foreign control and dependent development in host economies

LONG-TERM EFFECTS OF FDI-DRIVEN AUTOMOTIVE INDUSTRY DEVELOPMENT IN ECE

- Weak development of R&D and other higher value-added functions (truncation)
- Limited spillovers from foreign to domestic firms because of weak and dependent supplier linkages
- Weak development of domestic firms and their limited functional upgrading
 - Subordinate and dependent position of domestic firms in automotive GPNs
- Excessive dependence on foreign capital

WHY ECE WILL CONTINUE TO BE ATTRACTIVE FOR AUTOMOTIVE FDI IN THE FUTURE

- Two principal reasons
 - Low labor costs and corporate taxes compared to Western Europe
 - Relative geographic location: proximity to Western Europe
- Additional reasons
 - EU membership
 - Competition states – FDI friendly and FDI-dependent
 - Embeddedness: sunk costs, external scale economies
 - Political instability in the east

DOES AUTOMOTIVE FDI CONTRIBUTE TO THE MODERNIZATION AND CONVERGENCE OF PERIPHERAL COUNTRIES TOWARDS THE CORE?

- It depends how we define the core and periphery
- FDI in the automotive industry integrated the ECE automotive industry in the periphery of the European automotive industry
- FDI tends to reiterate the peripheral position of ECE in the automotive industry rather than lead to upgrading to the core
- FDI contributes to uneven development at the regional level

AUTOMOTIVE INDUSTRY DEVELOPMENT IN ECE: WHOSE SUCCESS?

- A successful spatio-temporal fix by automotive TNCs
 - Successful offshoring foreign technologies and production models to ECE
- Dominated and controlled by foreign capital
 - Dependent development
 - The fate of the automotive industry tied to factors largely outside the control of the state or of local firms
 - A weak development model: weak development of higher value-added activities
- Weak competition states
 - Intense state competition over automotive FDI
 - Inter-place competition, race to the bottom, corporate capture

Thank you for your attention