TRANSITION TO THE PRODUCTION OF EVs IN THE ECE INTEGRATED PERIPHERY OF THE EUROPEAN AUTOMOTIVE INDUSTRY

Petr Pavlínek

University of Nebraska at Omaha, USA

and

Charles University, Czechia

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University of Nebraska Omaha

PŘÍRODOVĚDECKÁ FAKULTA
Univerzita Karlova

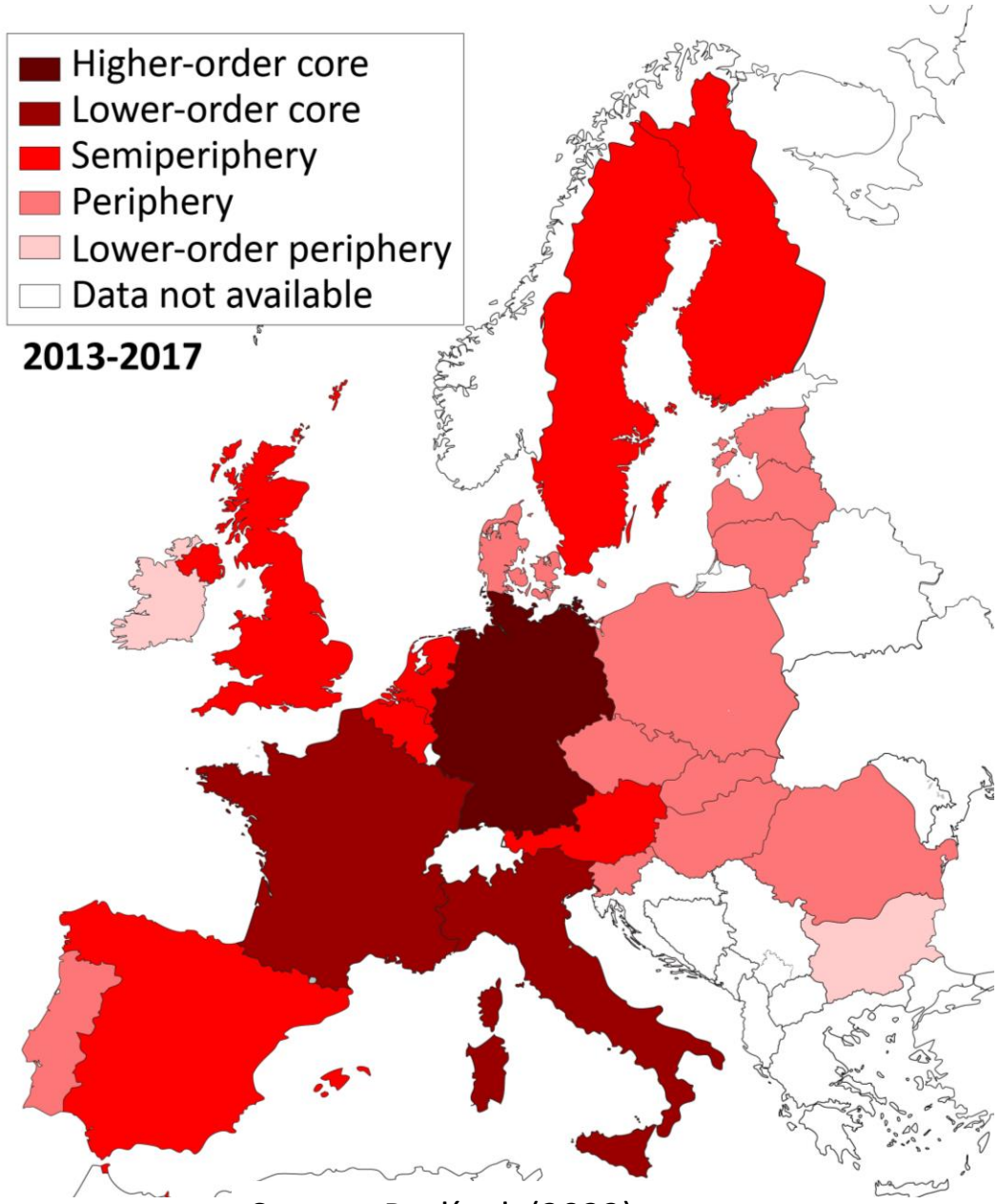
Automotive industry in East-Central Europe

Source: Pavlínek (2017)

MAIN ARGUMENT

- The transition to the production of EVs in ECE is strongly affected by the relative position of the automotive industry of ECE in GVCs, GPNs and IDL as the **integrated periphery** of the European automotive industry
- Uneven nature and uneven impacts across ECE

Spatial structure of the European automotive industry



Source: Pavlínek (2022)

BASIC FEATURES OF INTEGRATED PERIPHERIES IN AUTOMOTIVE INDUSTRY MACRO-REGIONAL PRODUCTION NETWORKS

- Dynamic regions of growth and development
- **Lower wages than in traditional core regions**
- A sizeable labor surplus at the initial stages of growth
- Geographic proximity to large and lucrative markets
- Membership in regional trade agreements or preferential trading arrangements
- **High degree of foreign ownership and control**
- Strongly export-oriented production of standardized cars, niche-market vehicles and automotive components
- **Limited development of high value-added and strategic functions**
- **FDI-friendly state policies**
- Weak labor unions, more liberal labor codes
- Underdeveloped domestic automotive industry
- Integration into macro-regional production networks as assembly platforms through predominantly dependent supplier linkages

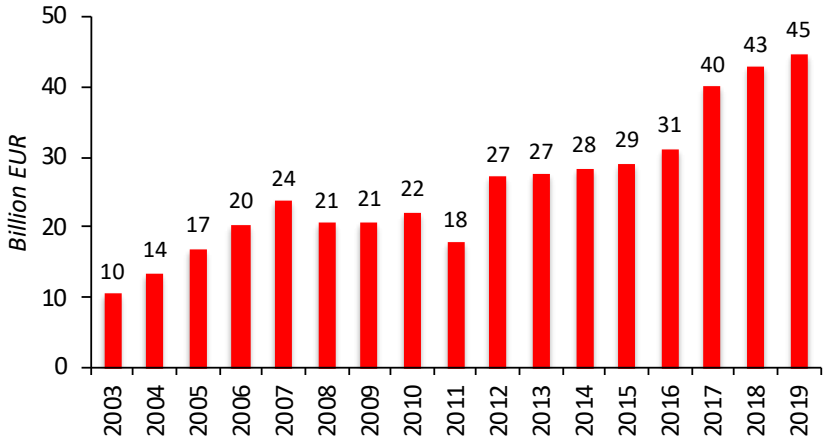
INTEGRATED PERIPHERY: HIGH DEGREE OF DEPENDENCE ON FOREIGN CAPITAL

Index of foreign control, 2018

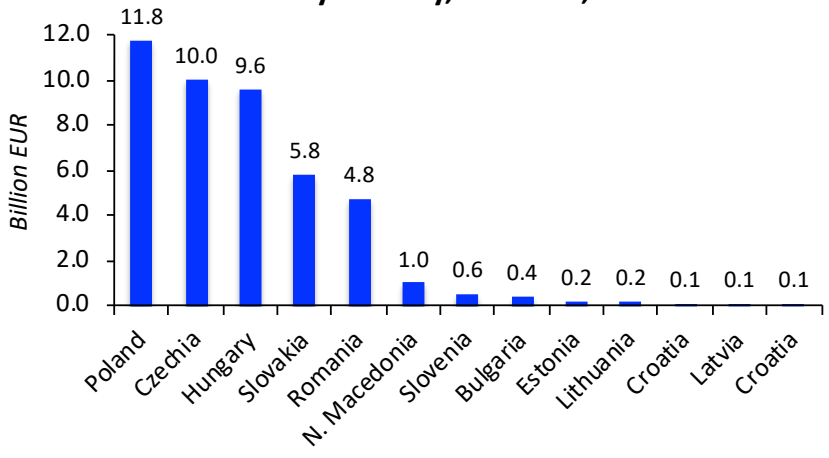
Slovakia	98.1
Hungary	95.6
Romania	93.1
Czechia	93.0
Bulgaria	89.8
Poland	88.4
Spain	84.3
Britain	83.6
Lithuania	82.6
Portugal	81.3
Slovenia	80.7
Bosnia and Herzegovina	78.7
Austria	78.1
Belgium	75.1
Ireland	65.2
Sweden	63.8
Estonia	60.9
Netherlands	59.0
Croatia	54.2
Denmark	38.6
Norway	30.9
Finland	24.8
France	24.0
Italy	21.1
Germany	15.0

Source: Calculated from data in Eurostat (2022)

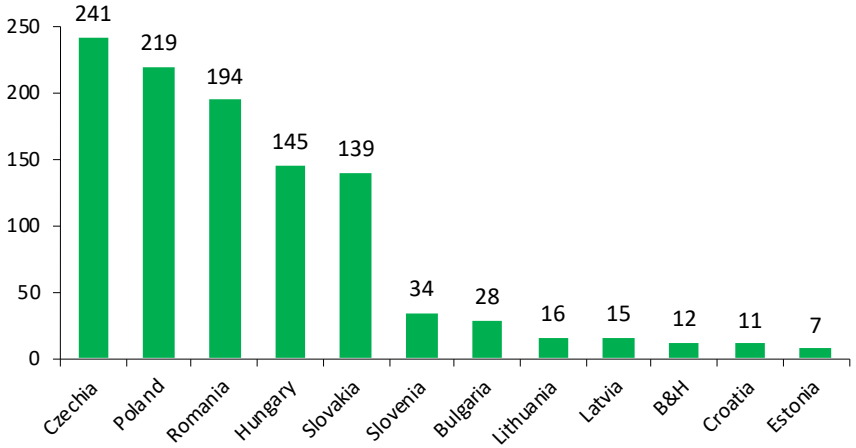
FDI stock, ECE, NACE 29, 2003-2019



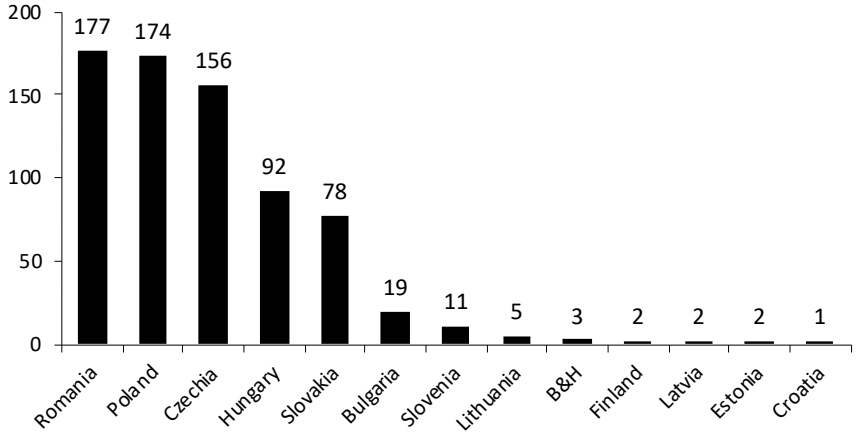
FDI stock by country, NACE 29, 2019



Foreign controlled enterprises, NACE 29, 2018

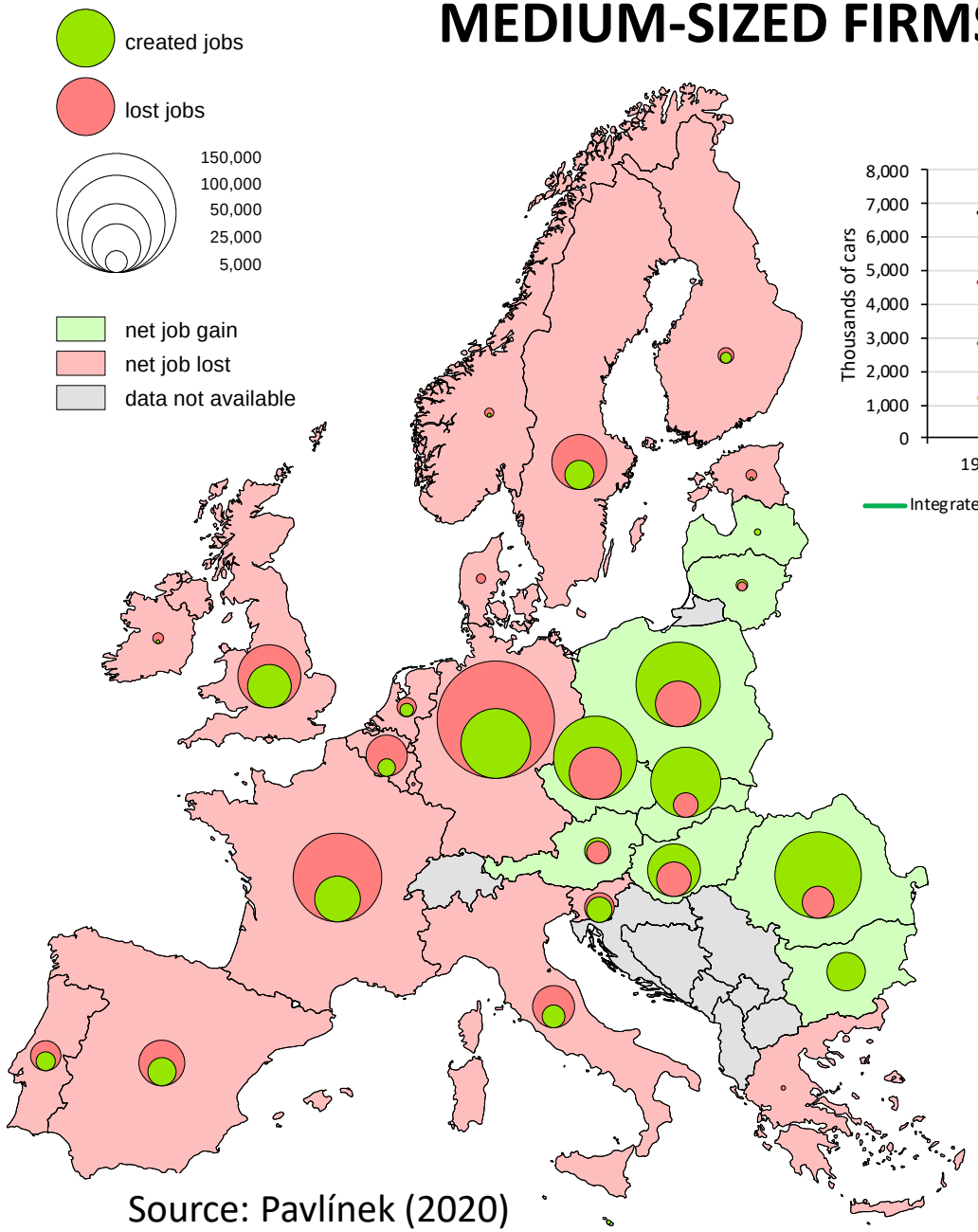


Employmenti n FCE (thousands), NACE 29, 2018

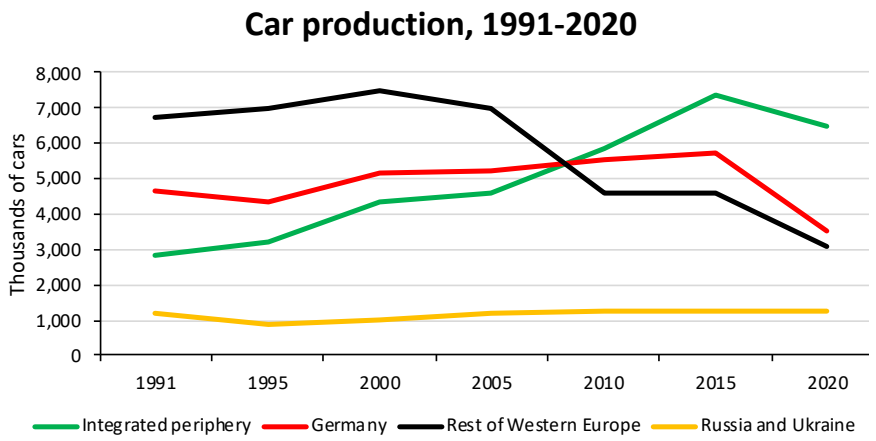


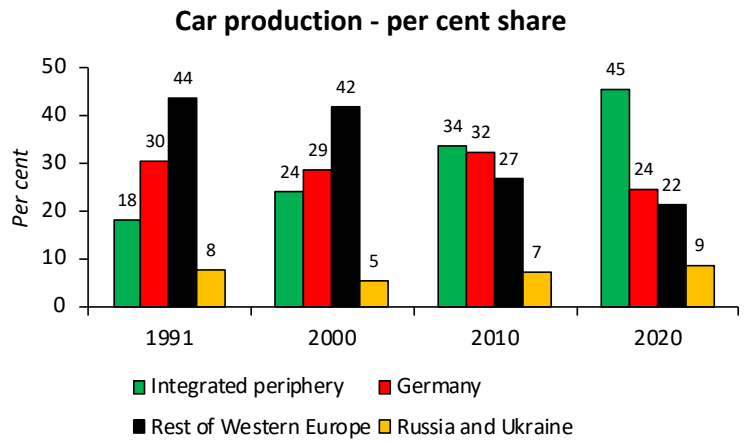
Source: Data from Eurostat (2022)

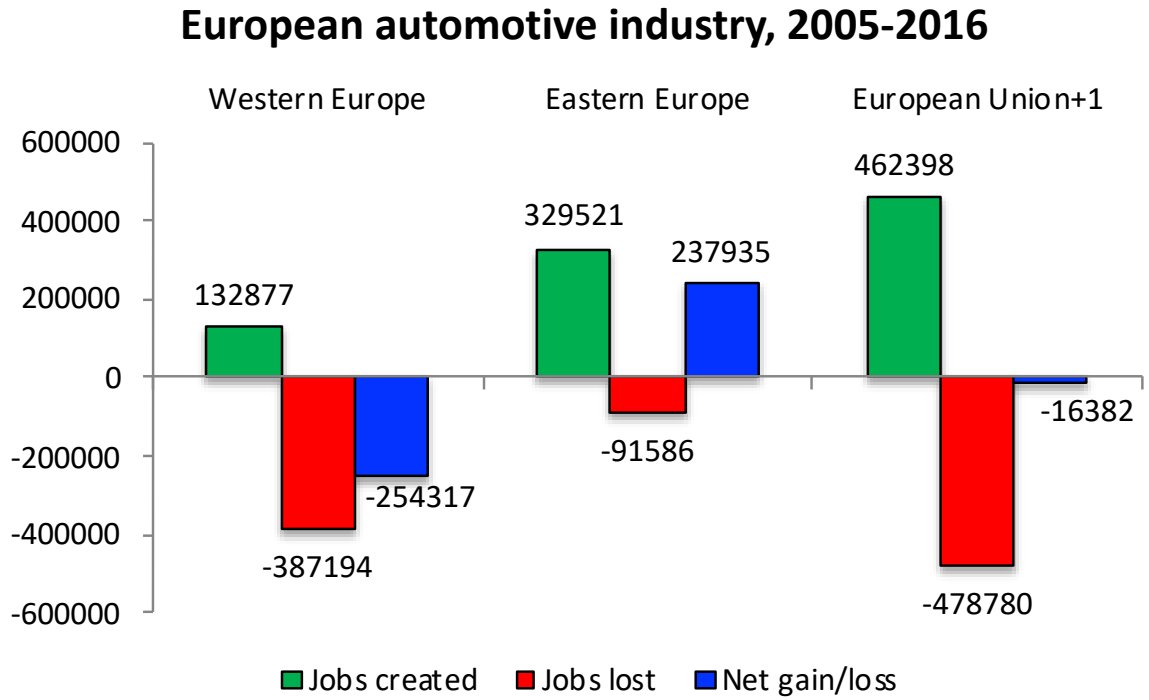
PRODUCTION TRENDS, 1991-2020 AND JOB CREATION AND JOB LOSS BY LARGE AND MEDIUM-SIZED FIRMS IN THE EU AND NORWAY, 2005-2016



Source: Pavlínek (2020)







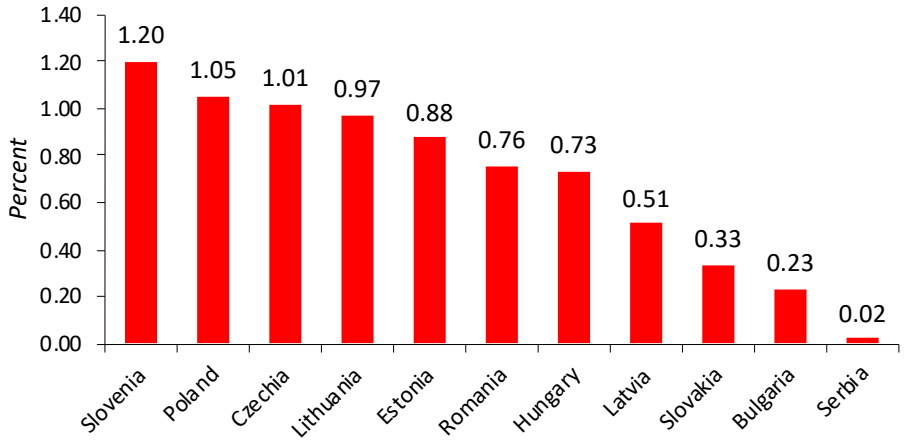
INTEGRATED PERIPHERY: WEAKLY DEVELOPED INNOVATION ACTIVITIES IN THE AUTO INDUSTRY

INDEX OF INNOVATION, 2017

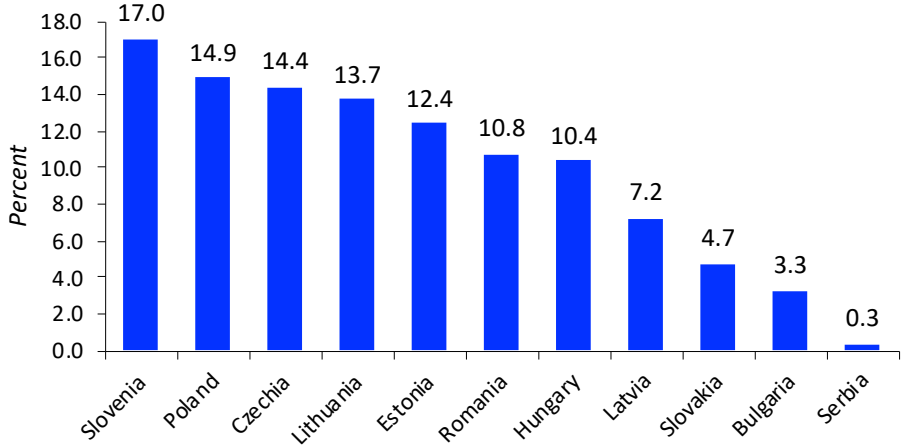
Sweden	0.99
Germany	0.92
Austria	0.63
Britain	0.61
Netherlands	0.46
Italy	0.45
France	0.36
Finland	0.28
Croatia	0.24
Slovenia	0.23
Ireland	0.22
Denmark	0.21
Belgium	0.20
Spain	0.20
Portugal	0.15
Czechia	0.14
Hungary	0.13
Poland	0.13
Lithuania	0.12
Latvia	0.10
Romania	0.09
Estonia	0.08
Slovakia	0.08
Bulgaria	0.04

Source: Calculated from data in Eurostat (2022)

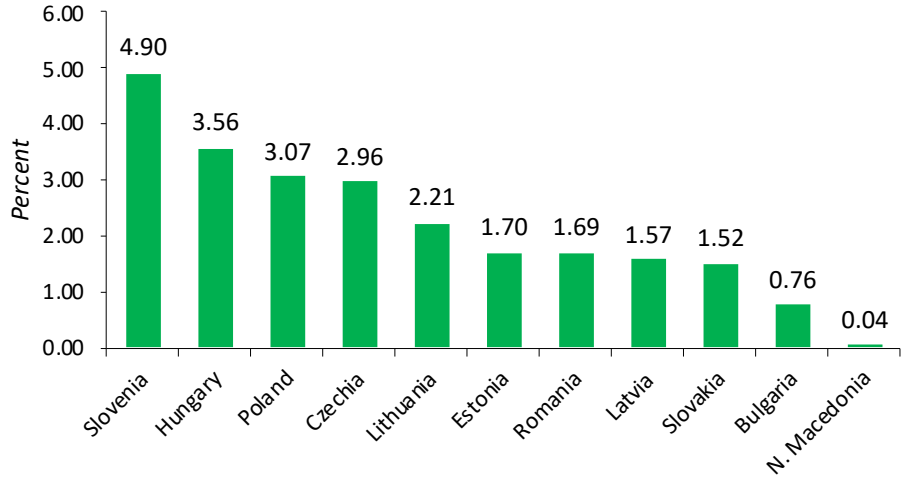
Share of R&D expenditures of total value of production, NACE 29, 2019



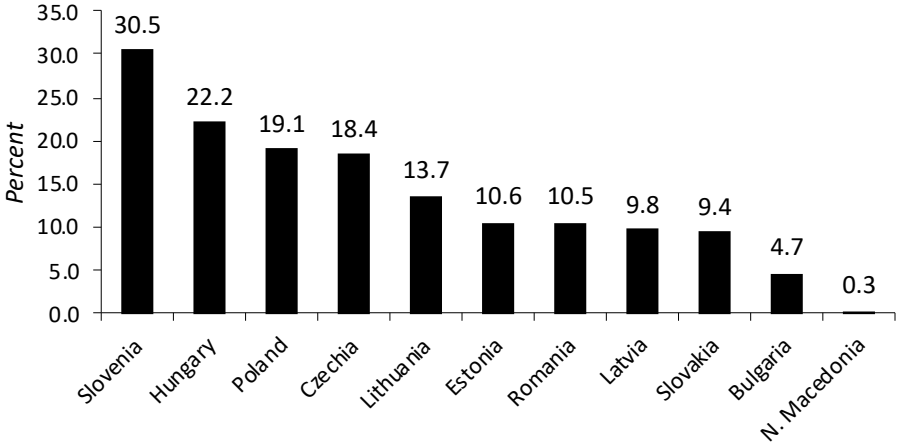
Share of R&D expenditures of total value of production, NACE 29, 2019, Germany =100%



Share of R&D personnel of total jobs, NACE 20, 2019



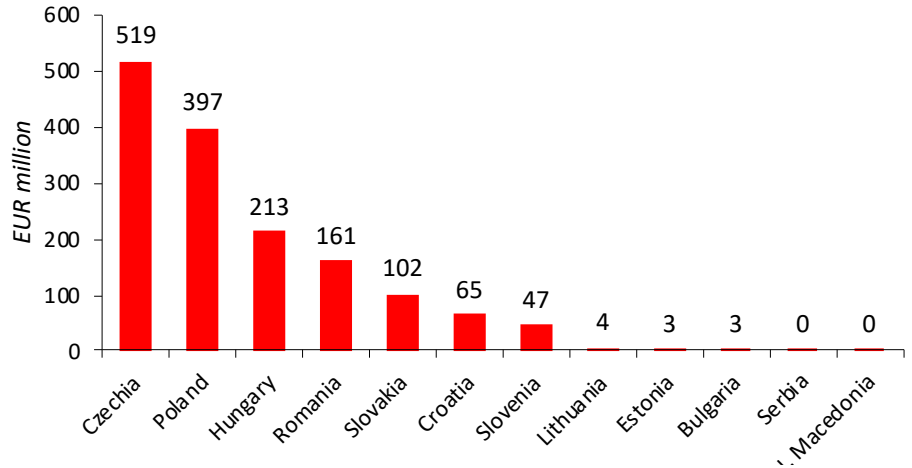
Share of R&D personnel of total jobs, NACE 20, 2019, Germany = 100



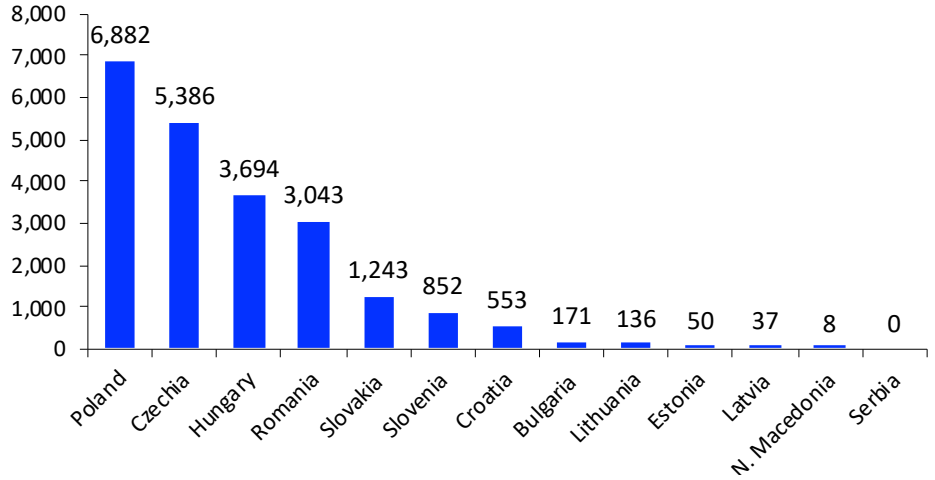
Source: Data from Eurostat (2022)

SPATIAL CONCENTRATION OF INNOVATION ACTIVITIES IN CENTRAL EUROPE

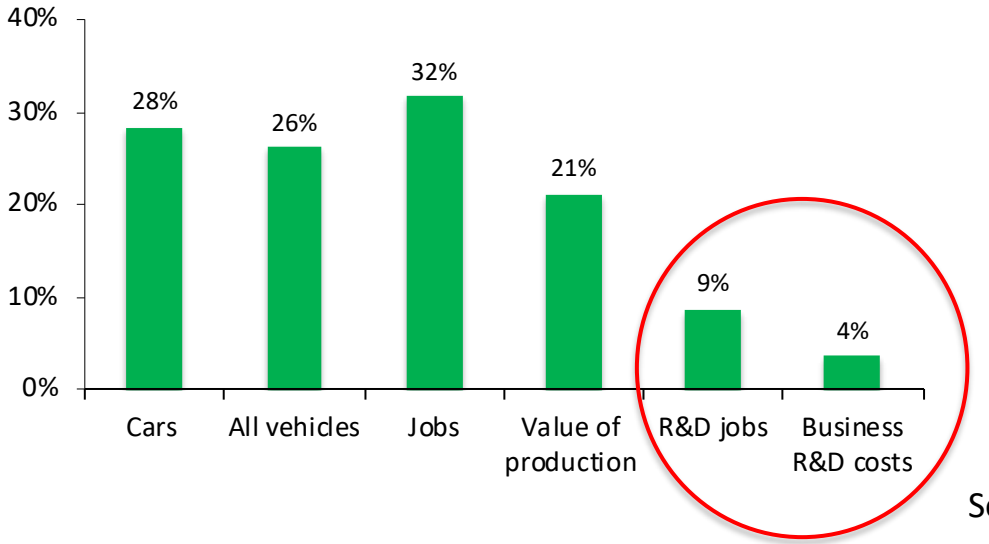
R&D expenditure, NACE 29, 2019



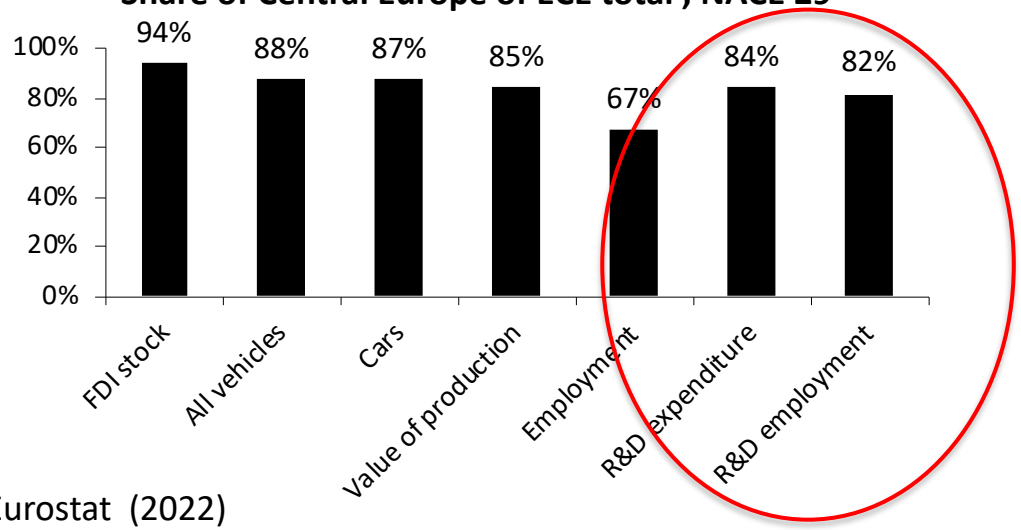
R&D personnel and researchers in NACE 29, 2019



Share of ECE of Europe, 2019-2020



Share of Central Europe of ECE total , NACE 29



Source: Data from Eurostat (2022)

TRANSITION TO EVs IN ECE: DRIVING FORCES

- The European Commission: emission limits
- **Core-based (foreign) TNCs**: assembly firms (OEMs)
  - Through their investment decisions and allocation of production
- **Weak role of ECE states**
  - Attempts to influence investments decisions of TNCs through investment incentives
  - Inter-state competition: continuing ‘race to the bottom’

THE EFFECTS OF THE TRANSITION TO EVs IN ECE

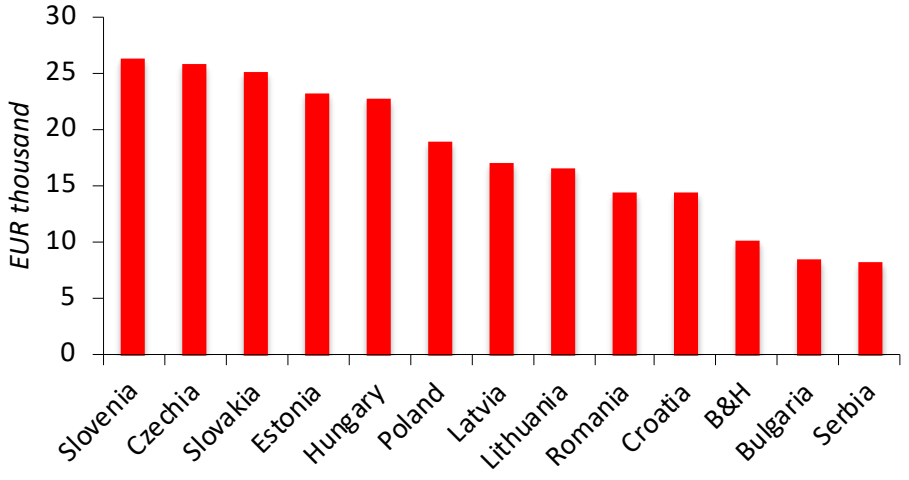
- **Slower transition in ECE** than in core areas of Western Europe
  - No EV-dedicated factories for the mass production of EVs so far in ECE
  - Less efficient strategy of ‘mixed production’
  - Large investment in western Europe in the production of EVs and battery gigafactories rather than in ECE
    - Restructuring to EV-dedicated factories (VW’s factories at Zwickau and Emden)
    - New EV-dedicated factories (Tesla near Berlin, VW’s Trinity factory near Wolfsburg)
- **Reversal of the 1990-2020 investment and location trends in the European automotive industry**

THE EFFECTS OF THE TRANSITION TO EVs

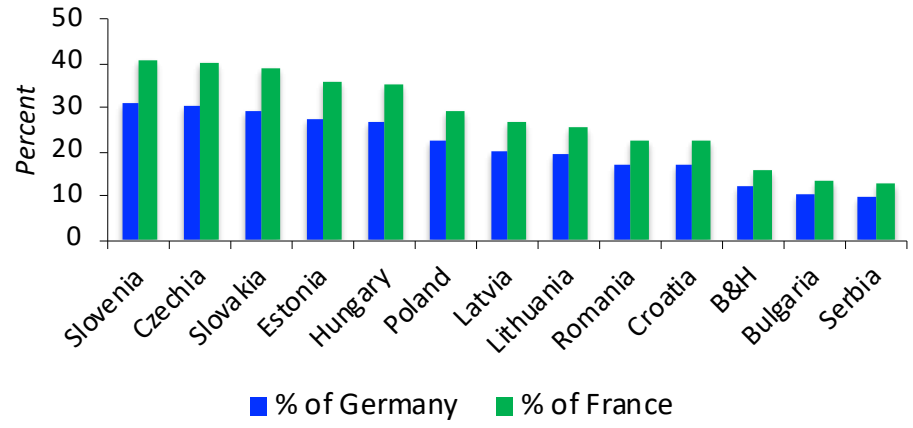
- **Production of cars with ICEs will continue longer in ECE** than in Western Europe
  - Newer, more modern factories
  - Older technologies continue longer in peripheral locations - the product life cycle model
    - Transfer of production of ICE cars to ECE (the VW Passat from Germany to Slovakia)
    - Increasing the production of ICEs (Stellantis increasing the production capacity of its engine factory by 50% in Szentgotthárd, Hungary)

THE EFFECTS OF THE TRANSITION TO EVs IN ECE

Personnel costs per employee, NACE 29, 2019



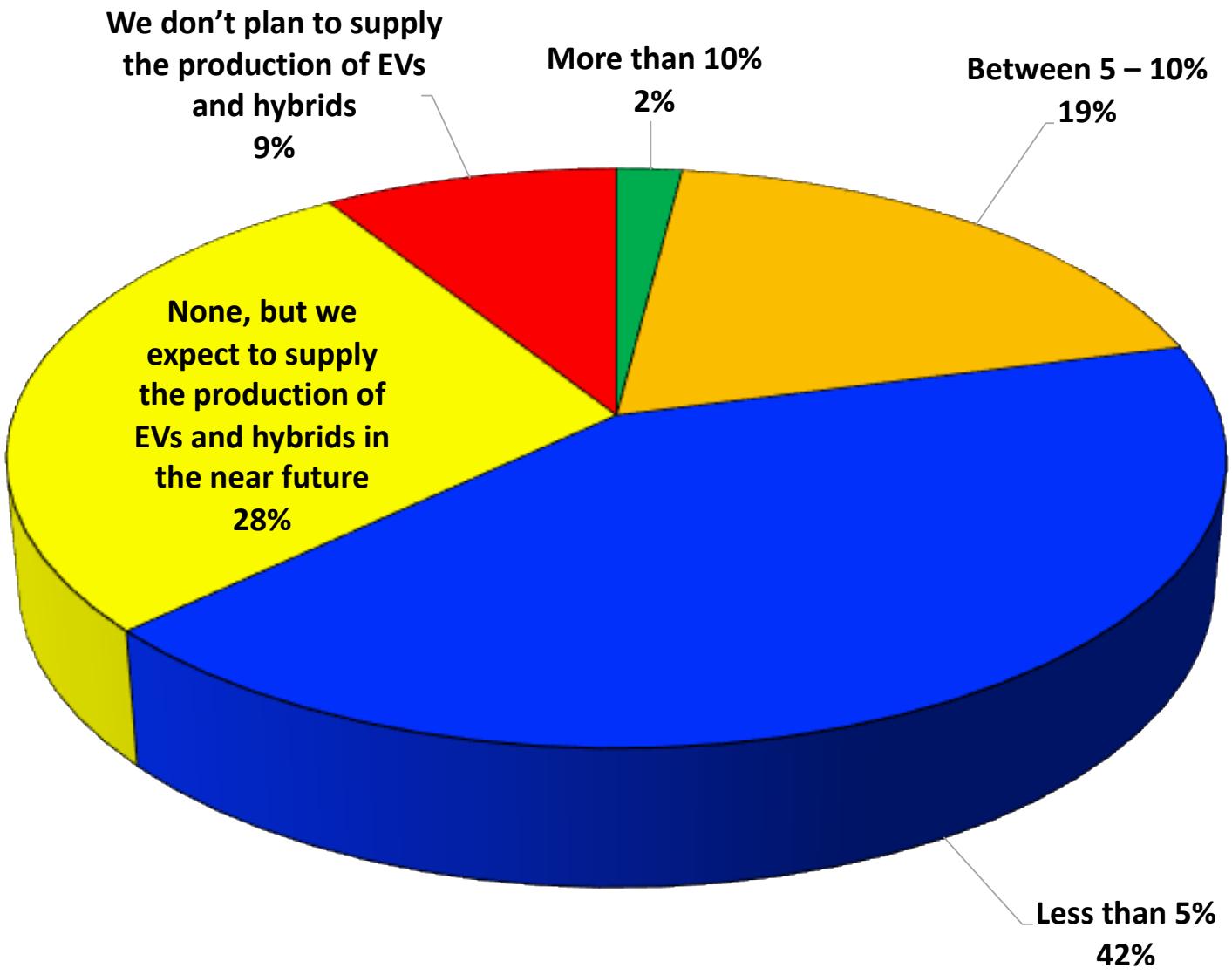
Personnel costs per employee as a percentage of Germany and France, NACE 29, 2019



Source: Data from Eurostat (2022)

- Additional reasons for longer production of ICE cars in ECE
  - Lower production costs – lower wages
  - Continuing production of ICE vehicles for non-EU markets (e.g., Škoda Auto)
  - Continuing large demand of ICE vehicles in ECE
- **Risky strategy**: it might undermine long-term competitiveness of ECE's automotive industry

The share of supplies for EVs and hybrids in Slovakia, 2019

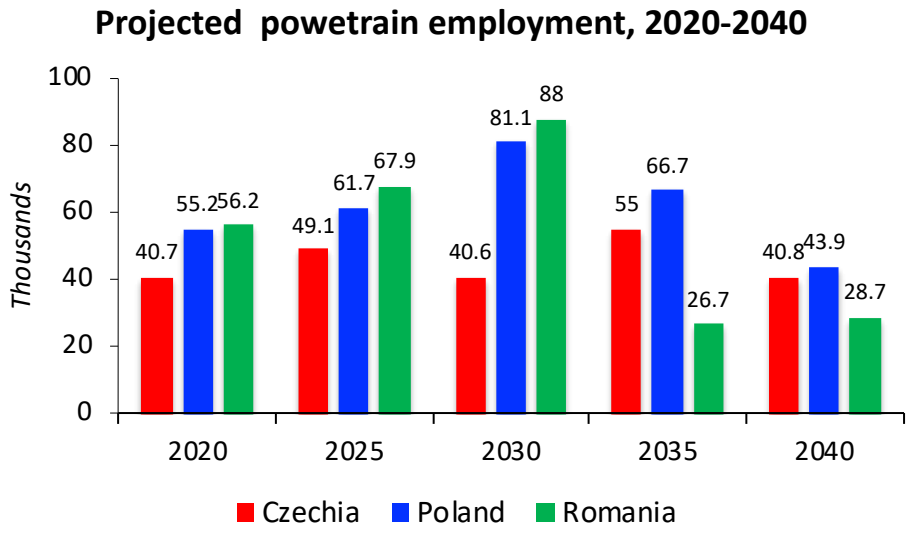


Based on the answers of 50 suppliers.
Source: Data from PwC (2019).

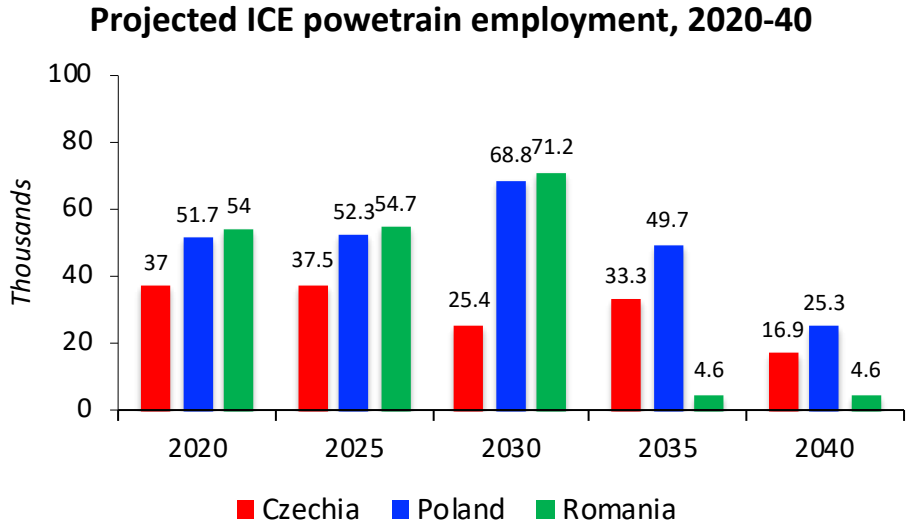
THE SLOW TRANSITION TO EVs SO FAR

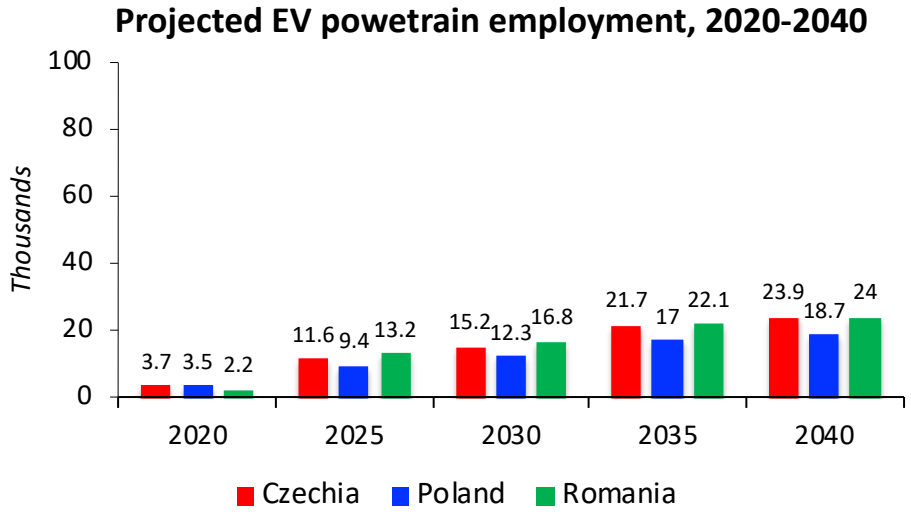
- Supplies of EV and hybrid production by foreign suppliers in Slovakia in 2019
  - 38% supplied nothing
  - 79% supplied either nothing or less than 5% of their output

PROJECTED POWETRAIN EMPLOYMENT, 2020-2040



- Czechia: +100 jobs
- Poland: -11,300 jobs
- Romania: -27,500 jobs
- **Uneven sectoral and geographic effects** of the EVs transition in ECE

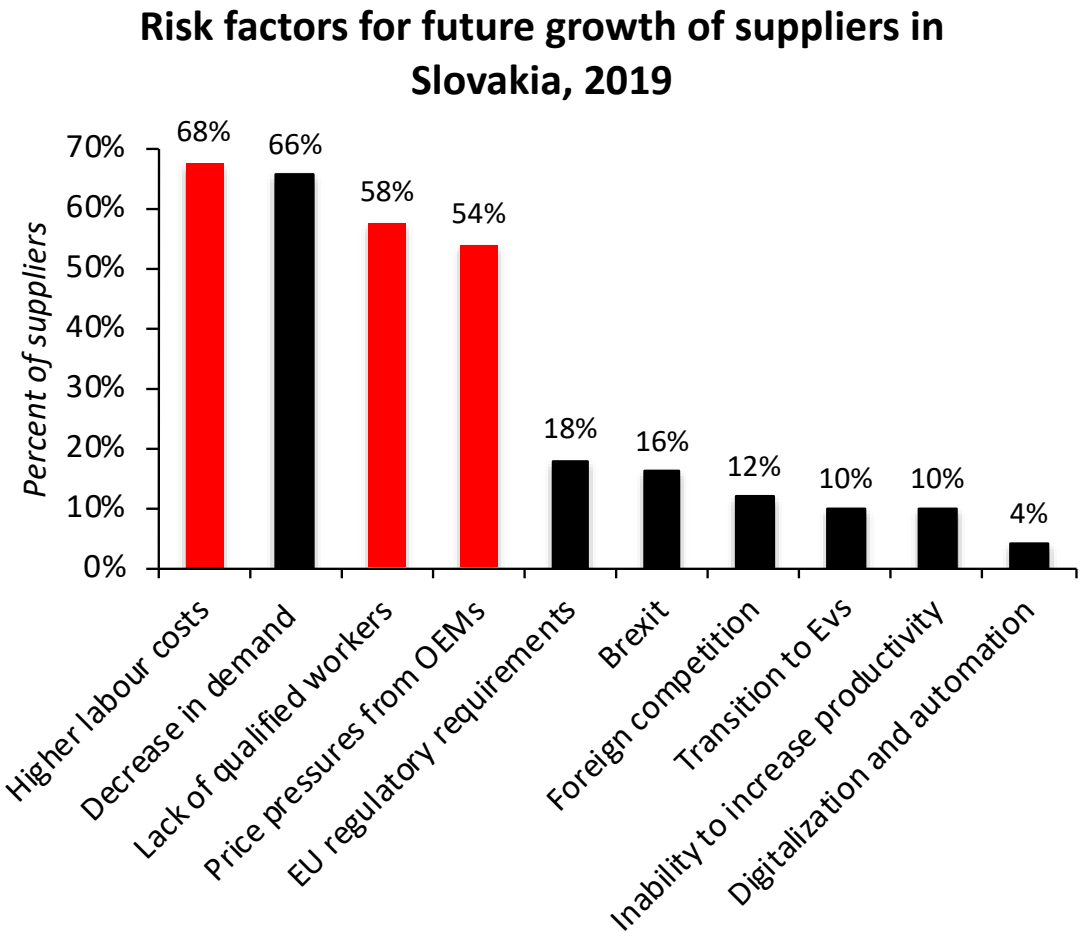




Data source: CLEPA, 2021

CONTINUING COMPARATIVE LOCATION ADVANTAGES OF ECE

- Low wages compared to Western Europe
- Proximity of the West European market
- Membership in the EU
- **Location disadvantages**
  - Labor shortages
  - Increased political risks due to the war in Ukraine in neighboring countries



Based on the answers of 50 suppliers.
Source: Data from PwC (2019).

LONG-TERM OUTCOMES OF THE TRANSITION TO THE PRODUCTION OF EVs IN ECE AUTOMOTIVE INDUSTRY

- The drive for profit will prevail in the long run
  - Lower cost locations will continue to be attractive
- High degree of foreign control will not lessen, it might increase
- ECE is not and will not be a center of innovation for electromobility
  - Highly selective, limited and uneven growth of R&D activities
- **The highly dependent peripheral position of ECE in the European automotive industry will not change**
  - Given the significant risks, the best outcome the ECE automotive industry can hope for is to maintain its peripheral position