New drive of the post-socialist periphery: Polish automotive industry in the European division of labour

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Aims

1. How has position of Poland’s automotive industry in Europe changed since the 1990s?

2. What are the sources of competitive advantage of automotive industry in Poland?

3. What are regional effects?

4. What are prospects and determinants of future development?

Toyota engine plant in Jelcz

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Theoretical perspective

- global value chains
- new international division of labour
- evolutionary theory of the firm
- local capabilities
- embeddedness

Toyota engine plant in Jelcz

Trends in the organization of production and supply management strategies in automotive industry

lean production

total quality management

just-in-time deliveries

emergence of first-tier suppliers as ‘system integrators’

modularization

design competences

reduction in the number of platforms

reduction in the number of first-tier suppliers

Kirchhoff plant in Mielec

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Empirical foundation

database with 1014 automotive plants
and 23 characteristics (variables)

160 face-to-face in-depth interviews with managers in 77 companies

Kirchhoff body parts plant in Gliwice

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The role of automotive industry in Poland (2006)

- 6.5 % of manufacturing employment
- 8.3 % of foreign inward investment
- 15.2 % of manufacturing production
- 20.4 % of Polish exports

VOLVO bus plant in Wrocław

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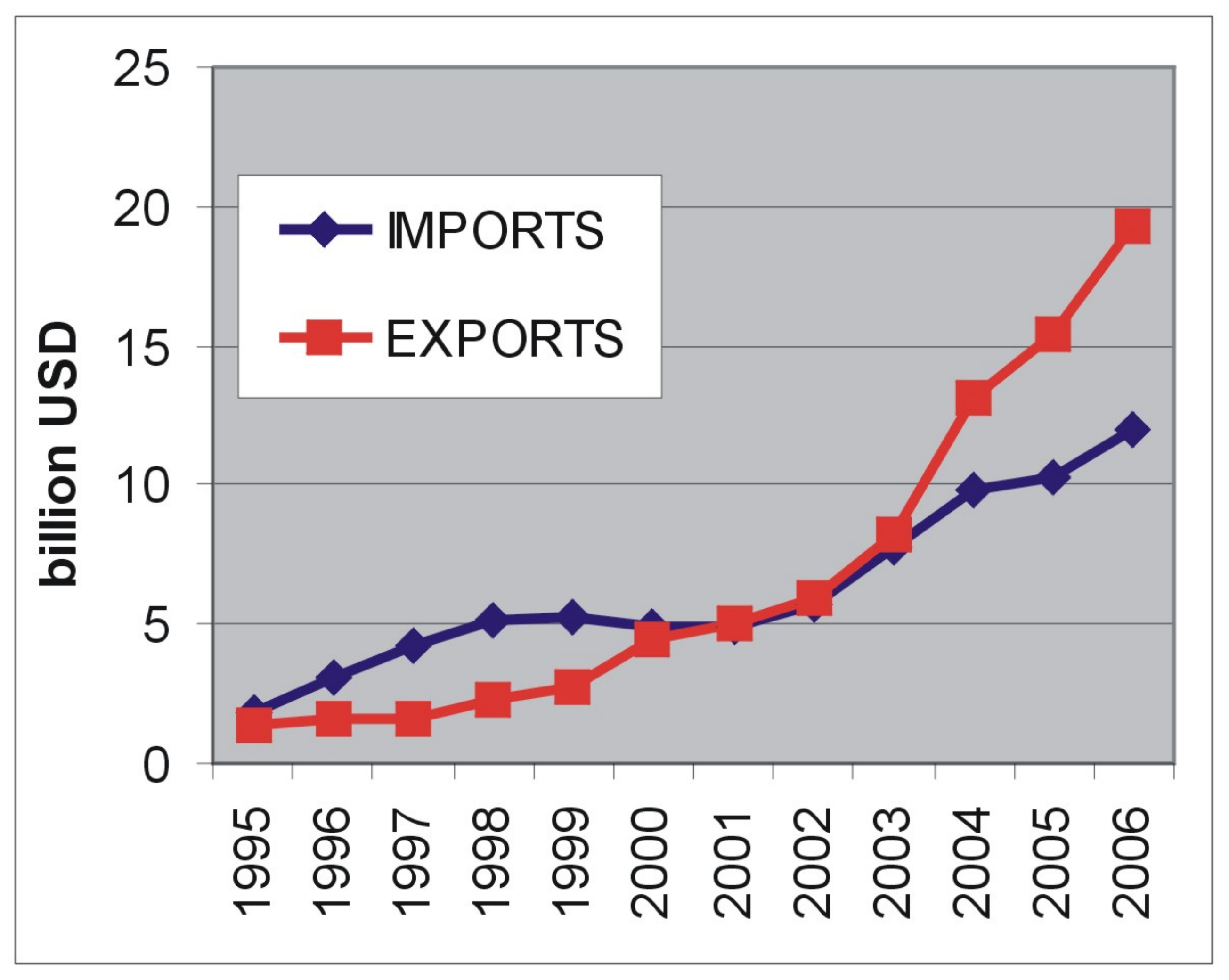
Automotive exports and imports of Poland, 1995-2006

Exports

20.5 bn USD in 2006

2.5 bn USD in 1999

0.6 bn USD in 1992



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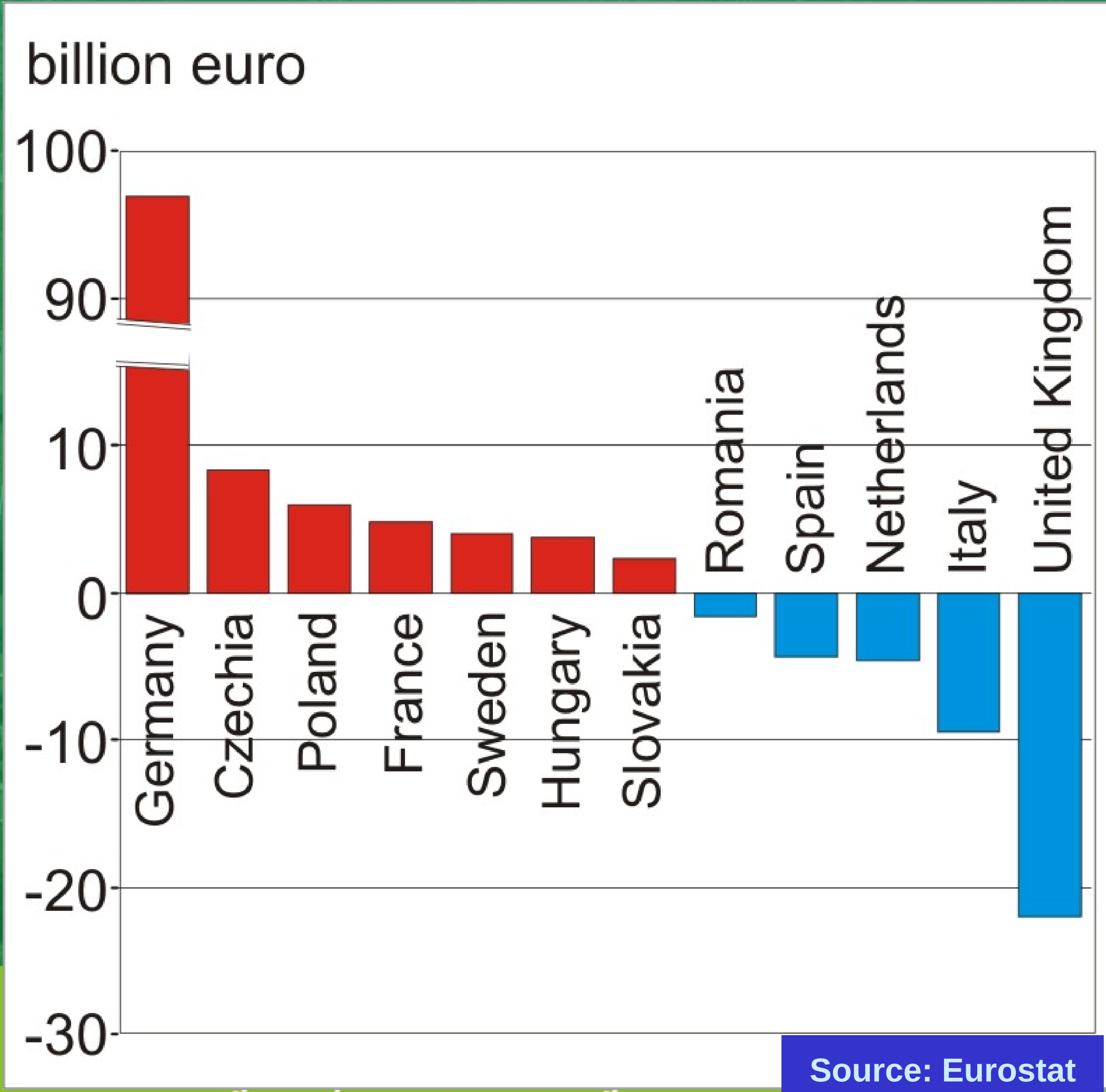
Balance of foreign trade in automotive products, 2006 (billion euro)



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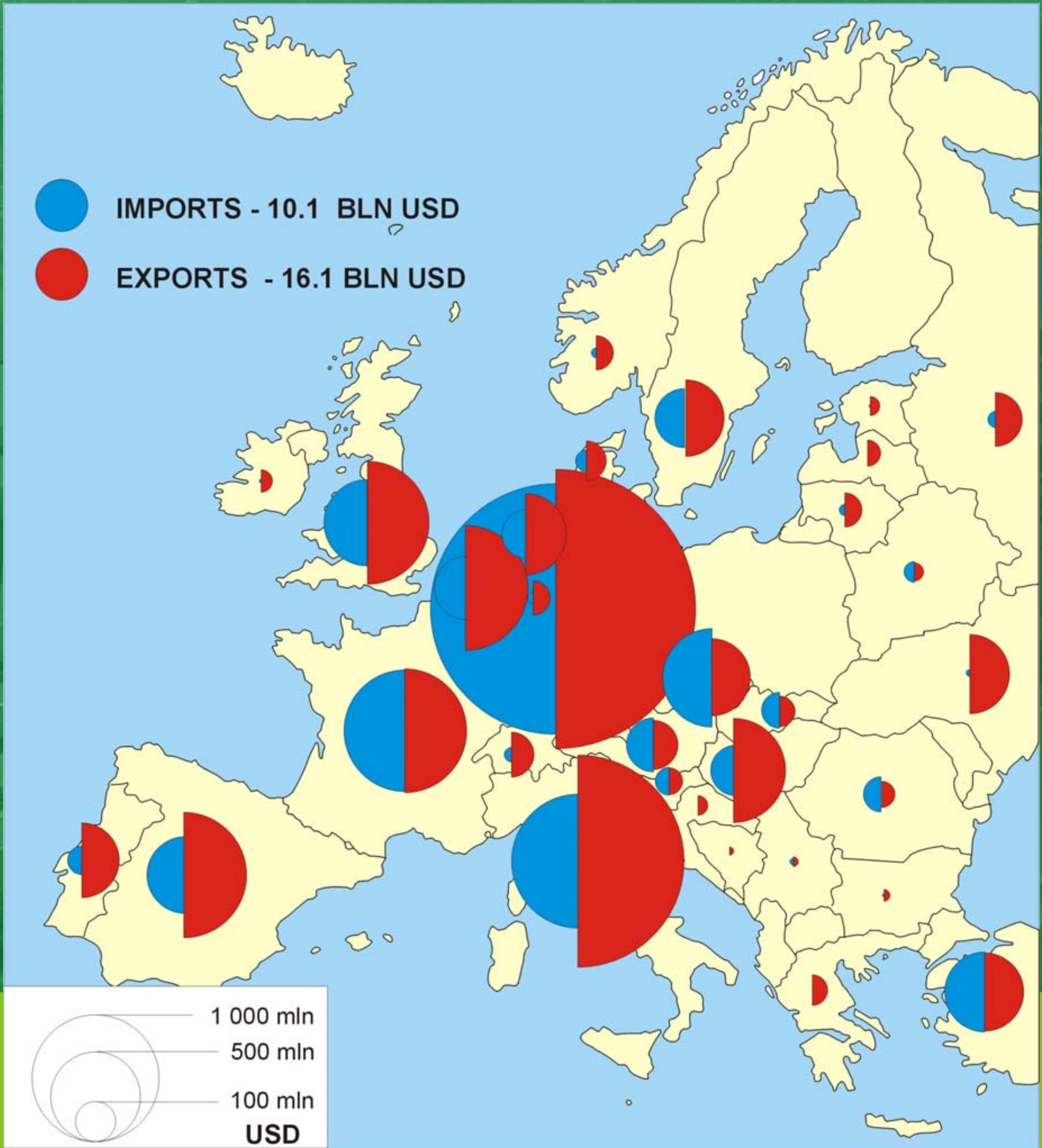
Source: Eurostat

Polish automotive exports and imports by country in 2005



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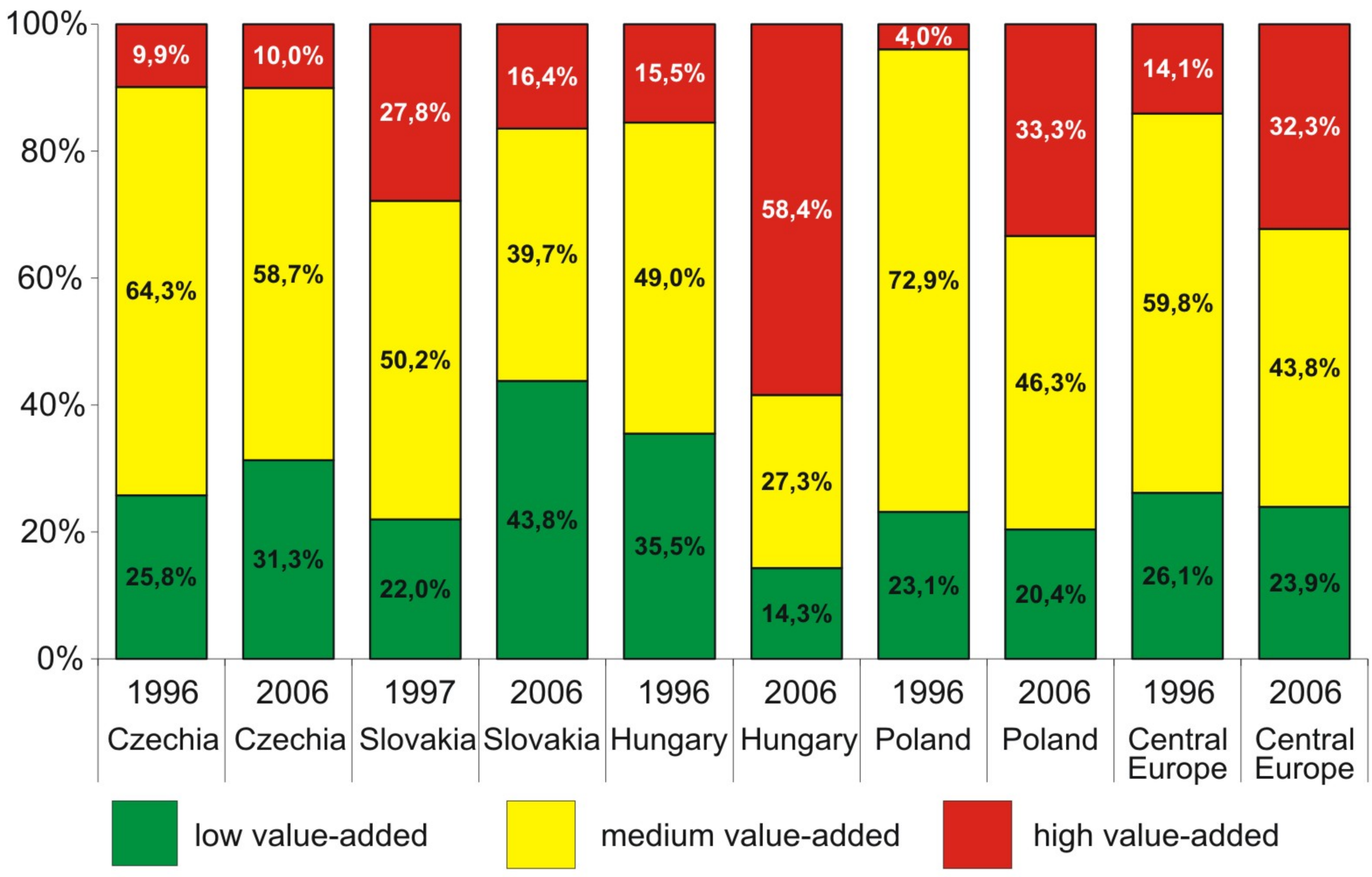
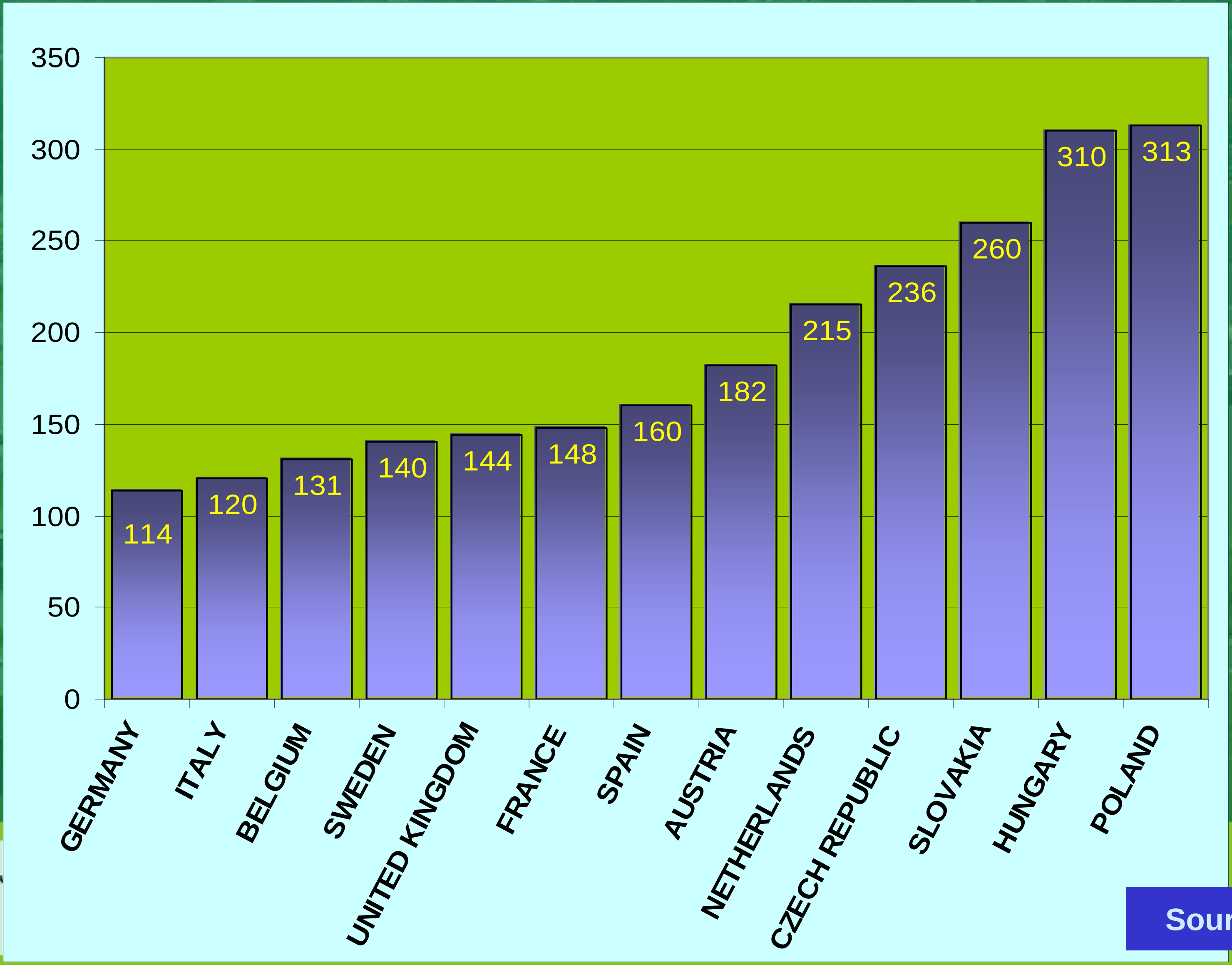
Structure of automotive exports of CE countries, 1996 & 2006



Gross value added per unit personnel cost in the automotive industry (NACE 34), 2004 (simple wage adjusted labour productivity)



Source: Eurostat

Automotive suppliers: broad scope and differentiation

2,600 automotive producers, including more than 250 foreign plants

180 greenfield plants built by foreign investors since 1995

48 out of the top 100 global automotive suppliers are active in Poland

9 out of the top 10 global automotive suppliers: 39 factories and 4 R&D

19 automotive R&D centres

new industrial park in Tychy, Upper Silesia

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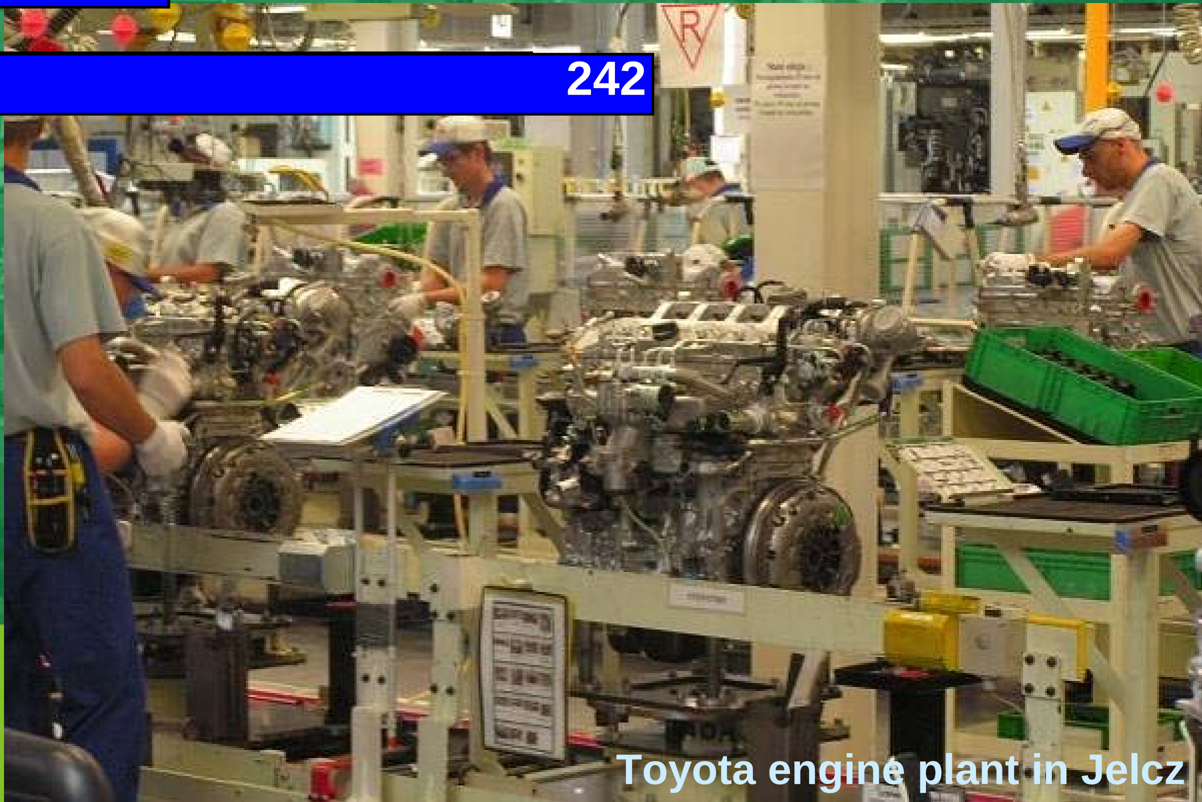
Local competences of automotive suppliers: quality certificates
(number of plants)



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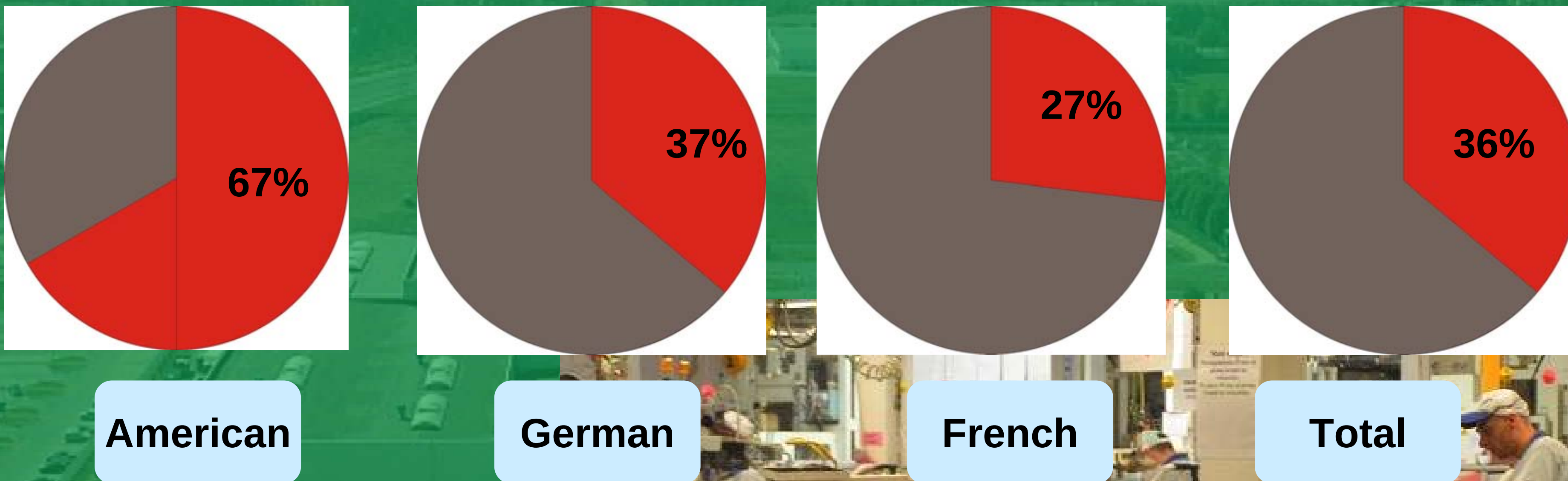
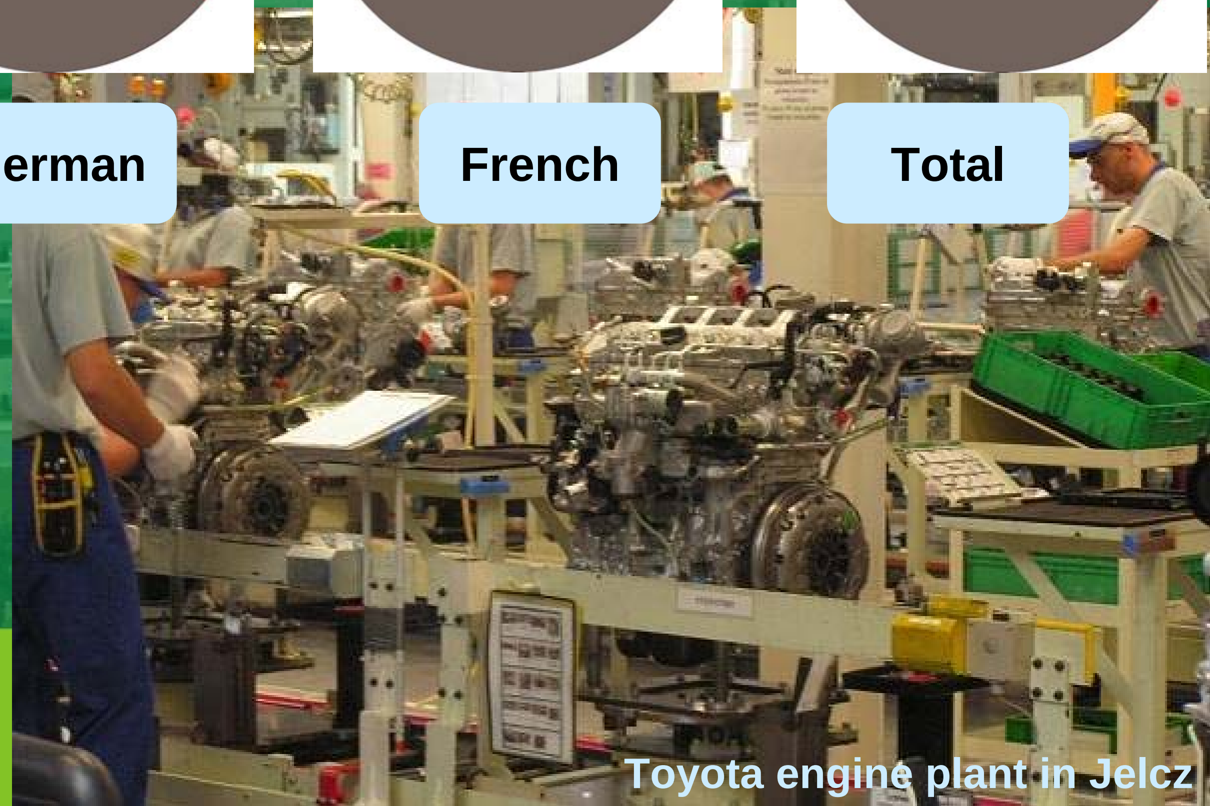
Local competences of automotive suppliers: managers

(percentage of 135 foreign-owned affiliates with a Polish chief executive)





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Automotive industry in Poland compared to Western Europe

160 face-to-face in-depth interviews with managers in 77 companies

product

product complexity
stage in product life-cycle
standardized
value-added
brand name
range of products
(*economies of scope*)
volume of production
(*economies of scale*)
finished/intermediate goods
quality

labour

skills
upgrading of skills
job certainty
employment standards
productivity
broad labour market

production process

advanced technology
automation level
capital-intensiveness
organization of production

market

size of demand
stability of demand
dependence on single market
conventional subcontracting
long-term contracts

suppliers

local content
pool of suppliers
standard of suppliers
trust
dependance on lead firms
activity of local producers

non-production competences

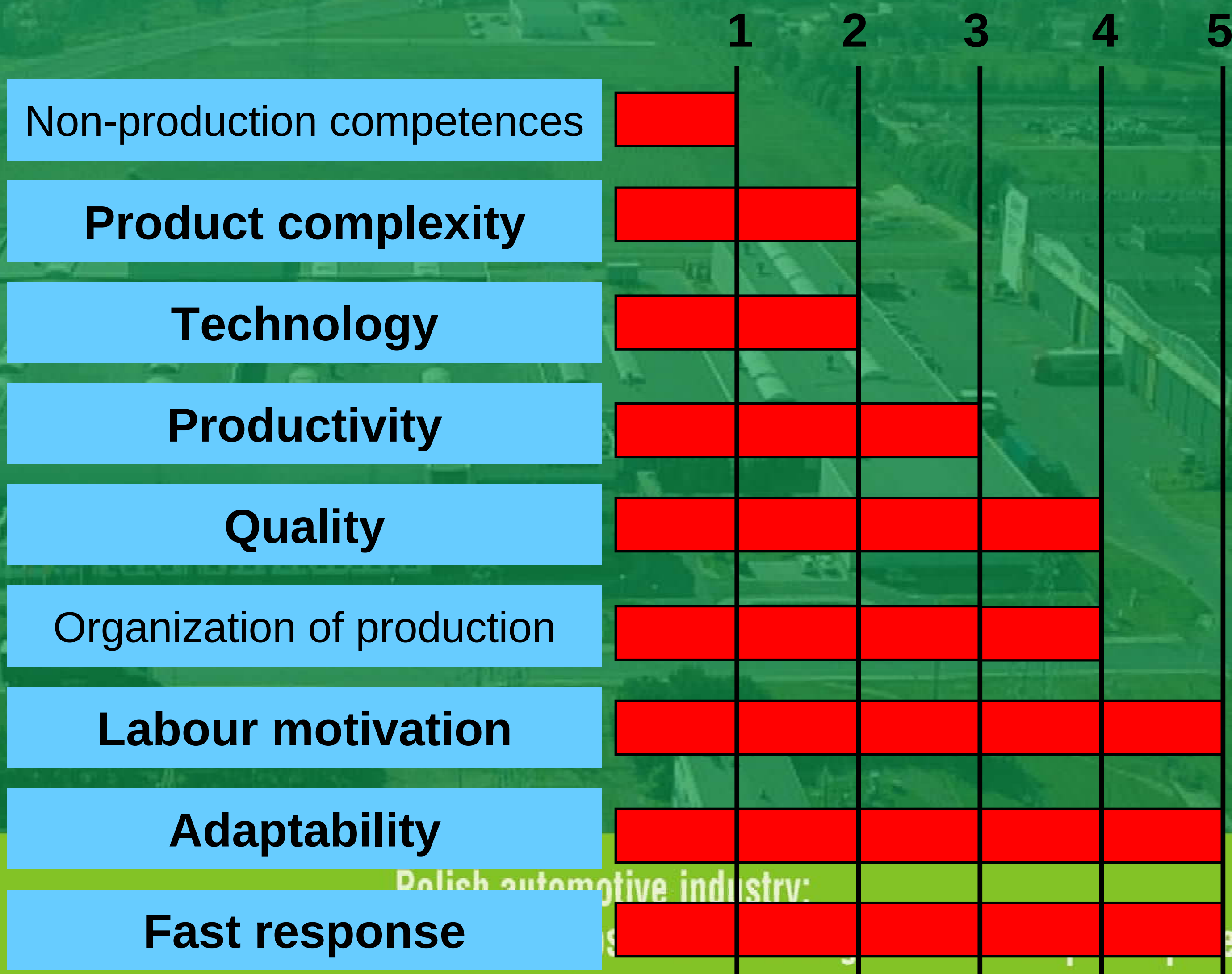
strategic decisions
financial capabilities
marketing competences
purchasing competences
research and development

others

responsiveness
sunk costs
outward foreign investment
embeddedness
impact on local economy
dependence on one sector
dependence on TNCs
dependence on single firm

Competitiveness of plants located in Poland in comparison to plants located in Western Europe

1 – lagging behind Western Europe 3 – similar to WE 5 – better than in WE



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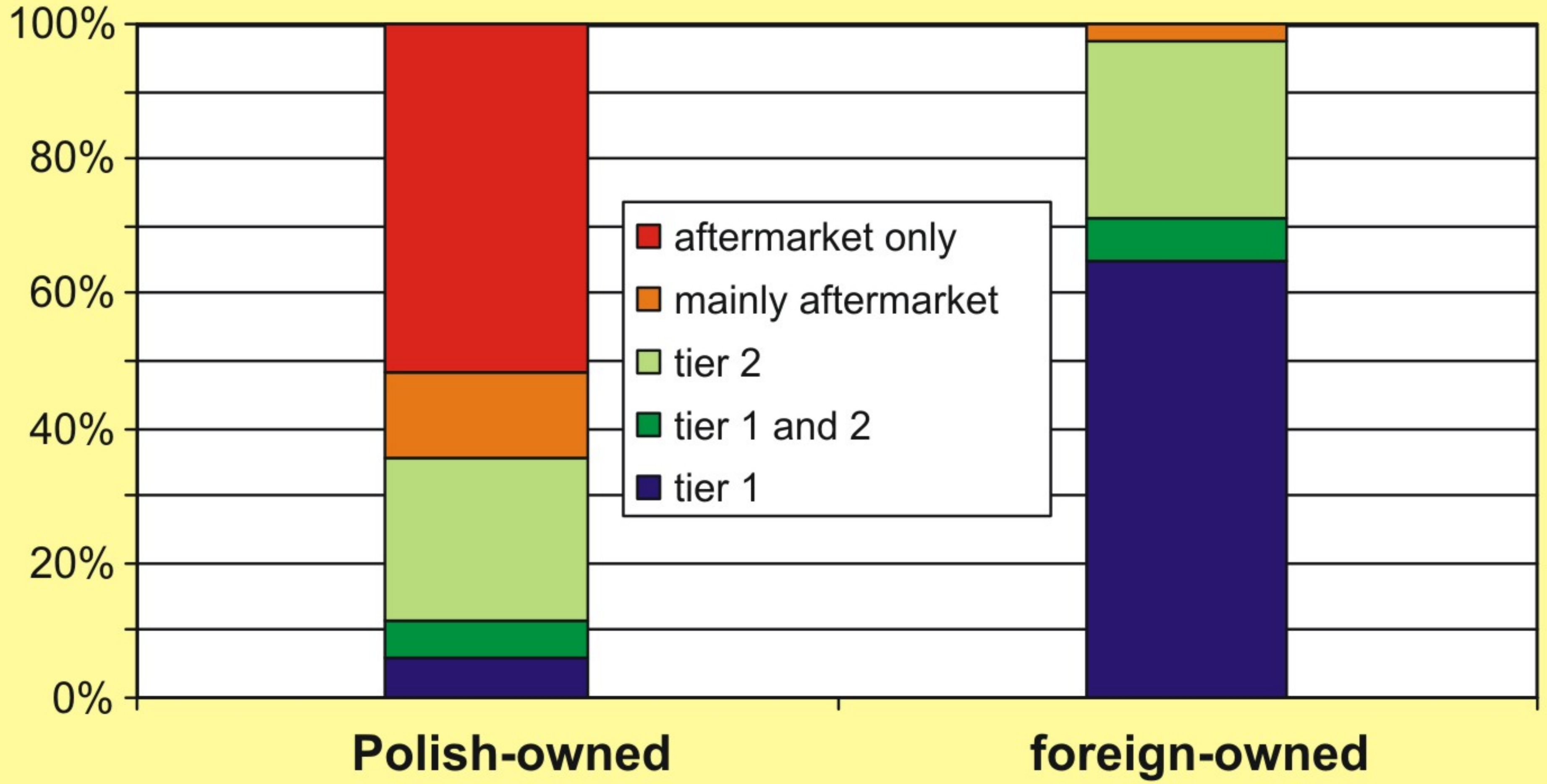
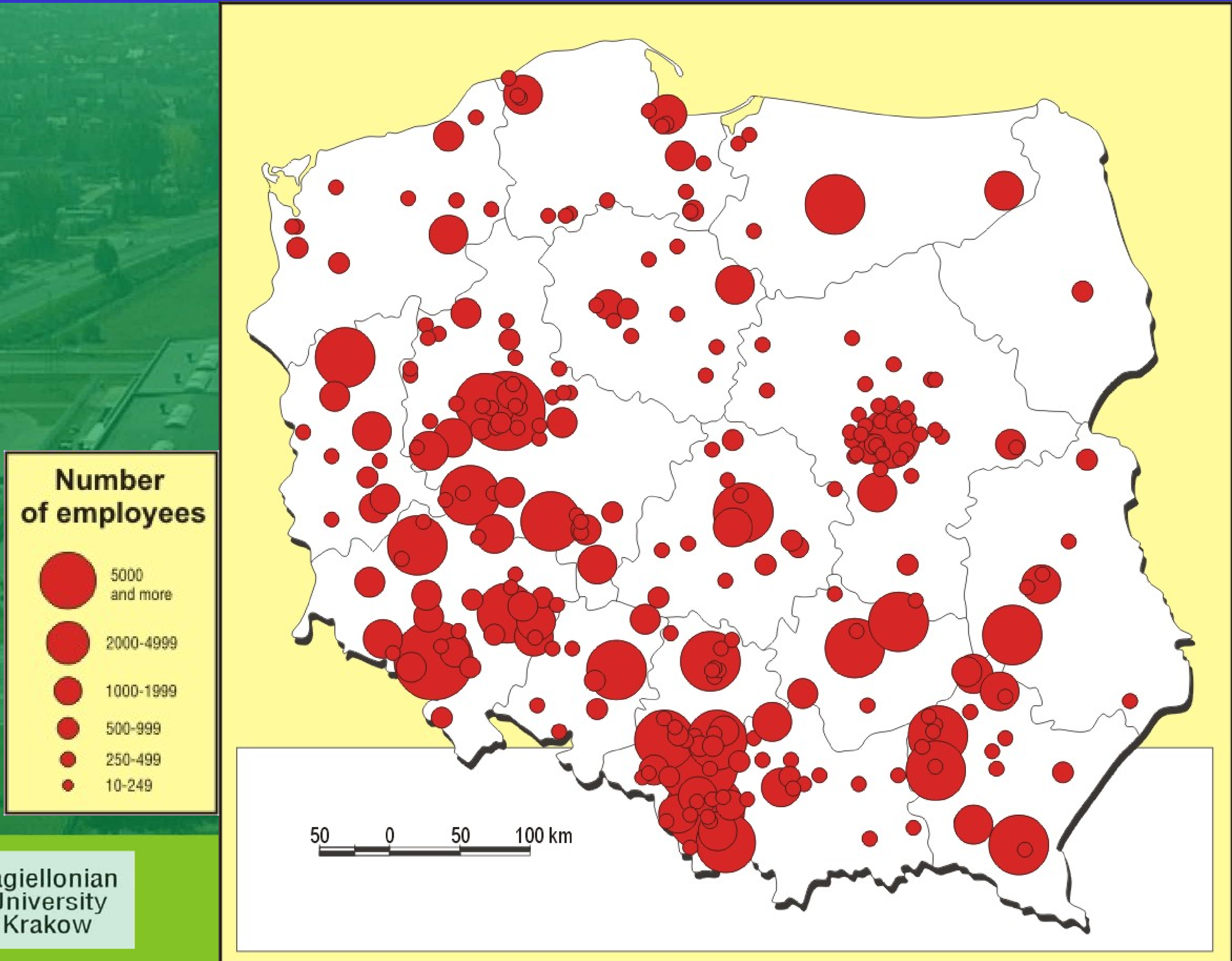
Position of the company in a supply chain according to origin of capital

high quality, productivity and competitive cost are not sufficient conditions for indigenous firms to become first-tier and major second-tier suppliers; they lack financial and human resources to provide design and high-volume



Polish automotive industry, 2004



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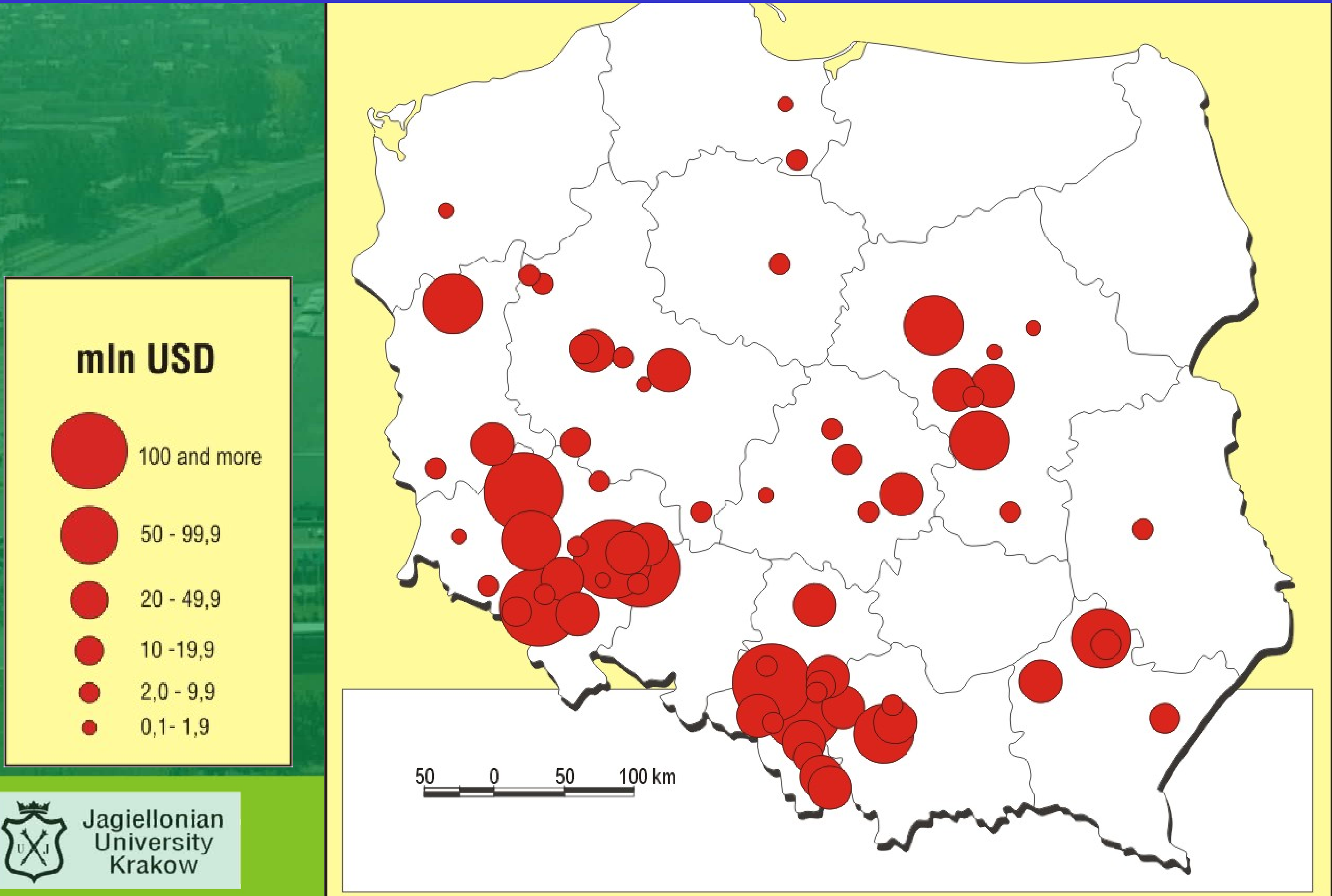
Foreign greenfield investment in automotive industry as of December 2004



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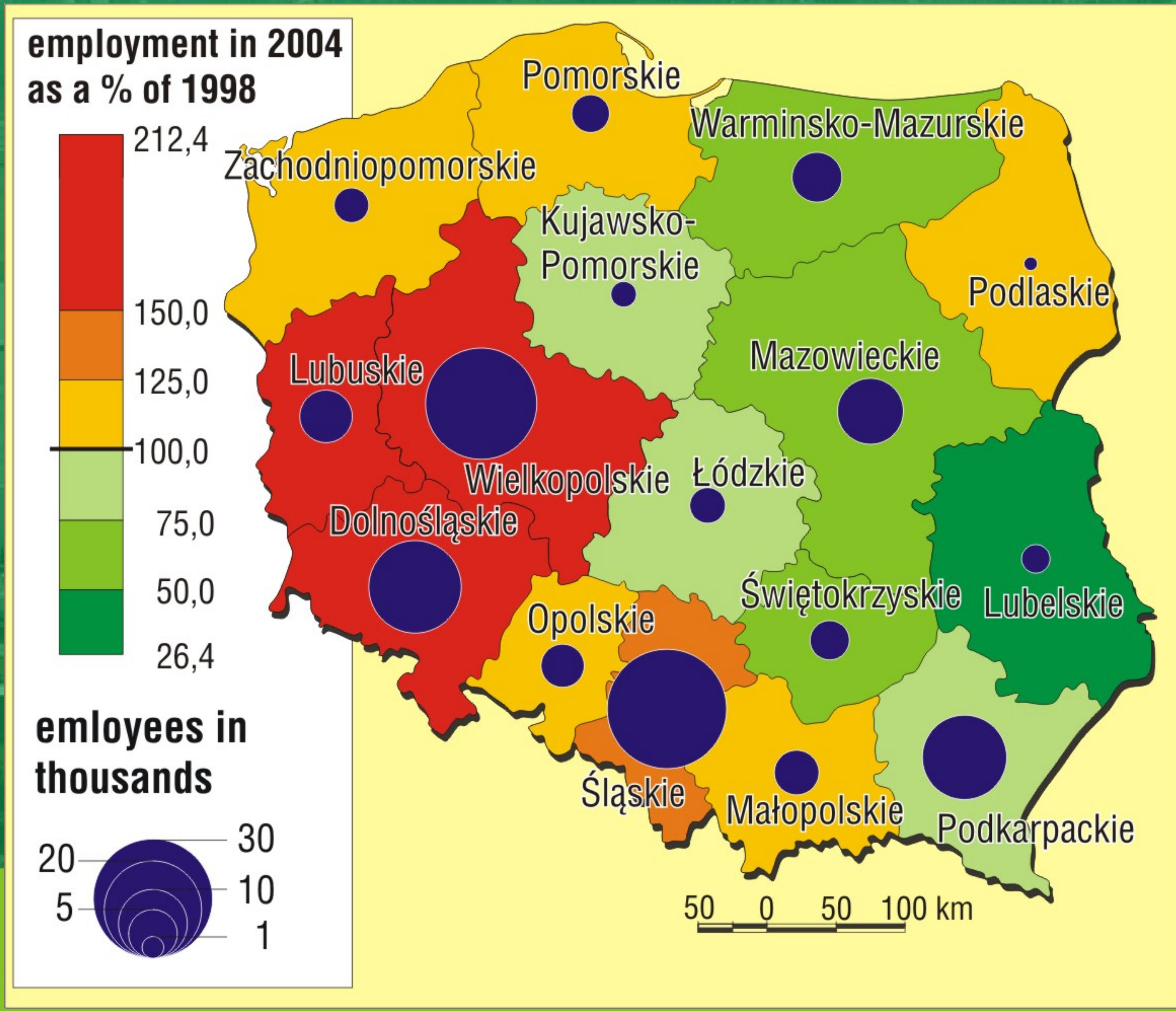
Changes in regional distribution of employment in automotive industry in Poland, 1998-2004 (1998=100)



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Position of Polish automotive industry in Europe

The automotive industry in Poland has moved from its initial situation of the post-communist periphery in the early 1990s characterized by simple labour-intensive production and assembly for domestic market towards export-oriented high value-added products and advanced technology

The expansion of automotive production and exports of Poland increasingly rests on other advantages than simply lower costs:
high quality, reliability, adaptability, flexibility, fast response and low cost

The enhanced competences of foreign and domestic firms are built on created local capabilities including skills, motivation and adaptability

The major weaknesses of the automotive sector in Poland are:
1. limited non-production competences of foreign subsidiaries
2. the secondary role of domestic producers in value chains

The automotive agglomeration in southwestern Poland has developed as part of a broader regional concentration in Central Europe

Prospects for future development

The prospects for self-sustaining growth and enhanced competences of automotive firms in Poland will be determined by:

+ growing economies of scale (plant level)
+ emerging economies of scope (Poland, and Central Europe)
+ increasing reliability and trust
+ synergies of the emerging cluster in south-western Poland
+ trend towards joint location of R&D and other non-production competences with manufacturing activities
+ dynamics and structure of the Central-Eastern European market
+ pressure from local managers

GM plant in Gliwice

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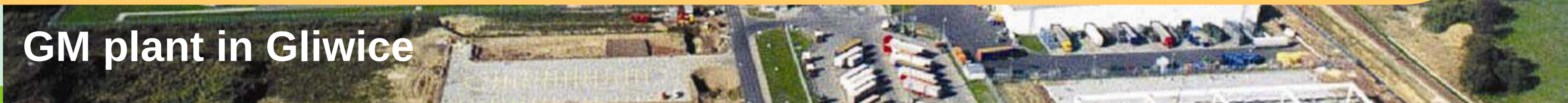
Limits to growth

Which advantages are short-lived?

+ low costs – eroded in mid-term perspective due to rising wages and salaries
+ availability of skilled labour – increasing difficulties in recruitment
+ high quality – long-term?
+ reliability – long-term?
+ adaptability – can it be sustained?
+ fast response – can it be sustained?

Which threats and barriers are most difficult to overcome?

+ technological dependence
+ financial dependence
+ strategic-decision making dependence
+ weak indigenous producers
+ competition from producers located outside Europe
+ potential decline in core automotive countries of Western Europe



GM plant in Gliwice

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Regional Development in Central and Eastern Europe, Warsaw, 20-22 September 2007

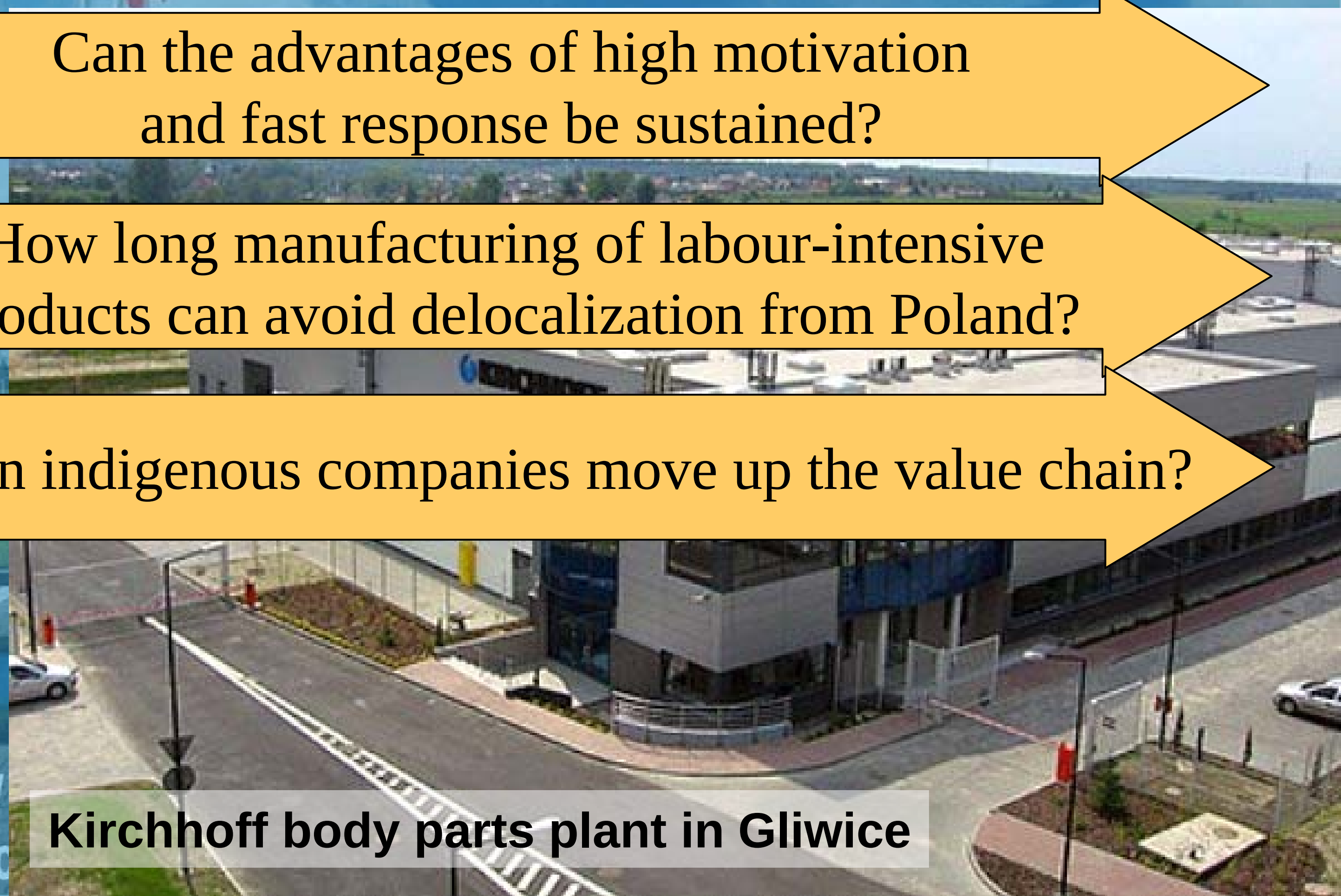
The future of automotive production in Poland

Will the trend for locating non-production competences in Poland be continued?

Can the advantages of high motivation and fast response be sustained?

How long manufacturing of labour-intensive products can avoid delocalization from Poland?

Can indigenous companies move up the value chain?



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