Evaluation of Competitiveness in Latvian Multisectoral Model

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THE NATIONAL RESEARCH PROGRAM

NATIONAL RESEARCH PROGRAMME: „ECONOMIC TRANSFORMATION, SMART GROWTH, GOVERNANCE AND LEGAL FRAMEWORK FOR THE STATE AND SOCIETY FOR SUSTAINABLE DEVELOPMENT – A NEW APPROACH TO THE CREATION OF A SUSTAINABLE LEARNING COMMUNITY – EKOSOC-LV”

THE PROGRAMME IS ESTABLISHED TO CREATE KNOWLEDGE BASE ON SUSTAINABLE DEVELOPMENT PROCESSES OF THE STATE AND SOCIETY, AND TO ELABORATE A THEORETICAL JUSTIFICATION FOR SUSTAINABLE DEVELOPMENT STRATEGIES AND ACTION POLICIES THROUGH DIVERSE SCIENTIFIC RESEARCH

Project : EXPLORE THE COMPETITIVENESS OF LATVIAN ENTERPRISES IN FOREIGN MARKETS AND MAKE PROPOSALS FOR ITS STRENGTHENING

- **Partners:**
- Riga Technical University (*coordinator – professor, Dr.habil.oec. Remigijs Počs*)
- University of Latvia (*coordinator – professor, Dr.oec. Biruta Sloka*)
- Riga Stradiņš University (*coordinator – professor, Dr.med. Anita Villeruša*)

Target of the project:

To elaborate the theoretical justification and practical solutions to strengthen and enhance the competitiveness of the Latvian enterprises in the foreign markets.

Tasks of the project:

- To evaluate the current level of competitiveness of the Latvian enterprises, identification and evaluation of development problems, resources, factors, which influence competitiveness.
- To explore the development and export possibilities of the Latvian enterprises/industries (including production and service industries – healthcare, education, transit etc.).
- To evaluate macro- and micro-economic conditions of competitiveness.
- To analyse the current macroeconomic development of Latvia and the development potential of industries from the perspective of sustainable economic development and competitiveness.
- To model dynamics of industries and develop forecasts of development of Latvian economy and industries in context of competitiveness of Latvian enterprises in foreign markets.
- To elaborate recommendations and proposals to strengthen and enhance the competitiveness of Latvian enterprises/industries and to ensure the sustainable development of economy

COMPETITIVENESS OF THE HIGH-TECH INDUSTRIES IN THE EU PERSPECTIVE

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Industries of High Value Added

- Are clearly defined in NACE red.2:
  - C21: Manufacture of basic pharmaceutical products
  - C26: Manufacture of computer, electronic and optical products
- High-tech industries are considered to be more competitive both in domestic and foreign markets

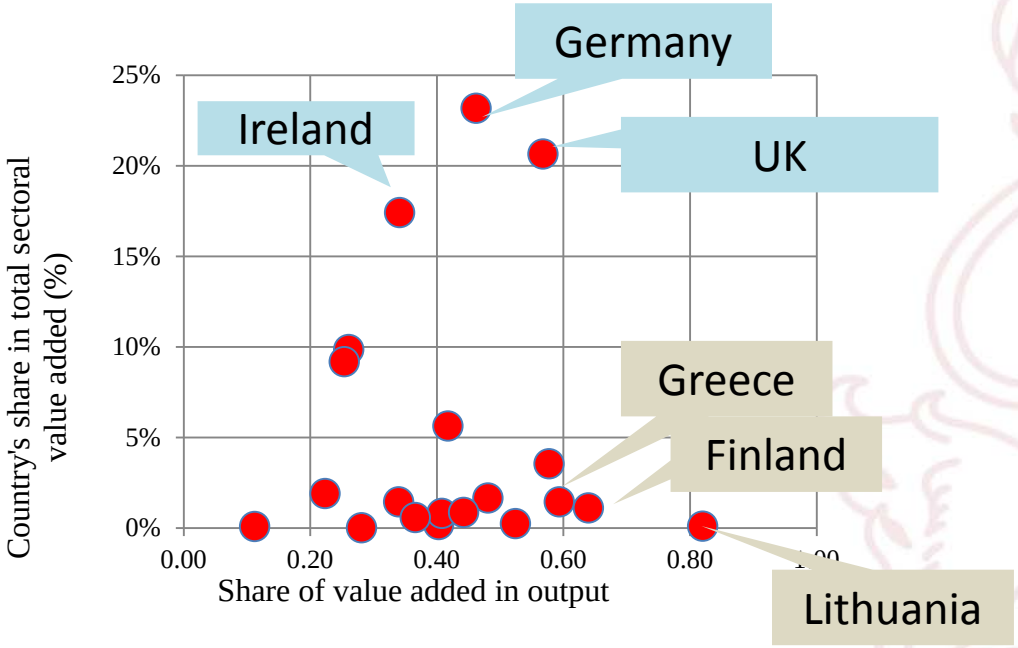
Analysis

- Eurostat database
- Value added per unit of output (the shares of value added in output (v) of industry j in a country c at time period t are computed as ratios of value added of industry j in a country c at time period t to output of industry j in a country c at time period t)
- C country's share in total value added of the analysed industry at time period t

$$v_{j,c,y} = \frac{VA_{j,c,y}}{OUT_{j,c,y}}$$

$$sh_{j,c,y} = \frac{VA_{j,c,y}}{\sum VA_{j,c,y}}$$

Manufacture of basic pharmaceutical products (C21) in the EU in 2010

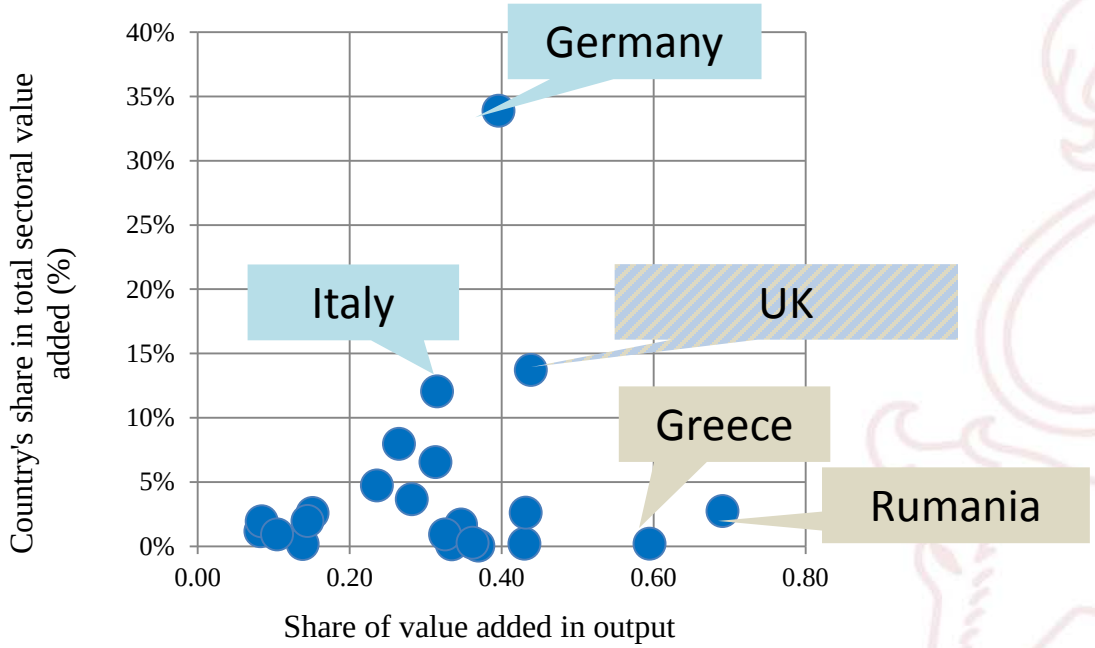


Countries with the highest VA in the output

Countries with the highest shares in the VA of the EU

Source: Authors' calculations

Manufacture of computer, electronic and optical products (C26) in 2010



Countries with the highest VA in the output

Countries with the highest shares in the VA of the EU

Source: Authors' calculations

Value Added per Unit of Output: 3 Top Values and the EU Average

Industry	Country	Value
Manufacture of basic pharmaceutical products (C21)	Lithuania	0.82
	Finland	0.64
	Greece	0.59
	The EU Average	**0.39**
Manufacture of computer, electronic and optical products (C26)	Rumania	0.69
	Greece	0.59
	UK	0.44
	The EU Average	**0.30**

Source: Authors' calculations

Results

- High-tech industries can be associated with the higher value added per unit of output only in separate countries.
  - Are the high-tech industries (C21 and C26) really the high-tech industries?
- The EU data do not show the clear relation between the value added per unit of output and VA shares

ANALYSIS OF THE COMPETITIVENESS INDICATORS

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Competitiveness in the Modelling Perspective

- Topical in different levels
- Present and future perspective
- Inter-industry linkages
- Transformation to the higher value added goods and services

Data

- Mainly CSB 2008-2014 + Eurostat 2008-2010 (supply) and WIOD 2008-2011
- «valuable industries»
  - High-tech (21, 26)
  - Medium-high-tech (20, 27-30)
  - Medium-low-tech (19, 22-25, 33)
  - Knowledge-intensive services (KIS) (50, 51, 58-66, 69-75, 78, 80, 84-93)

Competitiveness Indicators

- Specialization

$$\exp\_spec_{i,t} = \frac{\exp_{i,t}}{\sum \exp_{i,t}} \cdot 100\%,$$

- Export-orientation

$$\exp\_\%_{i,t} = \frac{\exp_{i,t}}{va_{i,t}} \cdot 100\%,$$

- Export dependency

$$\exp\_dep_{i,t} = \frac{\exp_{i,t}}{out_{i,t}} \cdot 100\%,$$

- Value added per unit of output

$$v_{i,t} = \frac{va_{i,t}}{out_{i,t}},$$

Competitiveness Indicators

- Real labour productivity

$$r\_p_{i,t} = \frac{r\_out_{i,t}}{empl_{i,t}},$$

- Value added per employee

$$pvu_{i,t} = \frac{va_{i,t}}{empl_{i,t}},$$

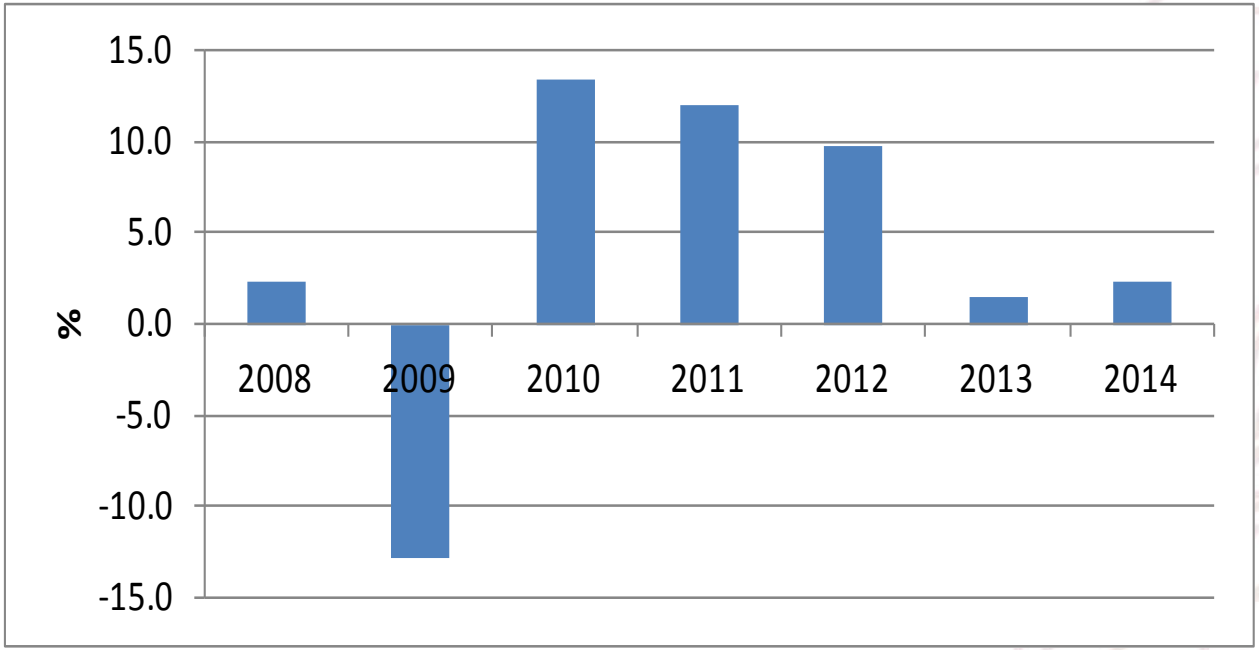
- Value added per unit spent on labour

$$pvu\_lc_{i,t} = \frac{va_{i,t}}{lc_{i,t}},$$

- Unit labour costs

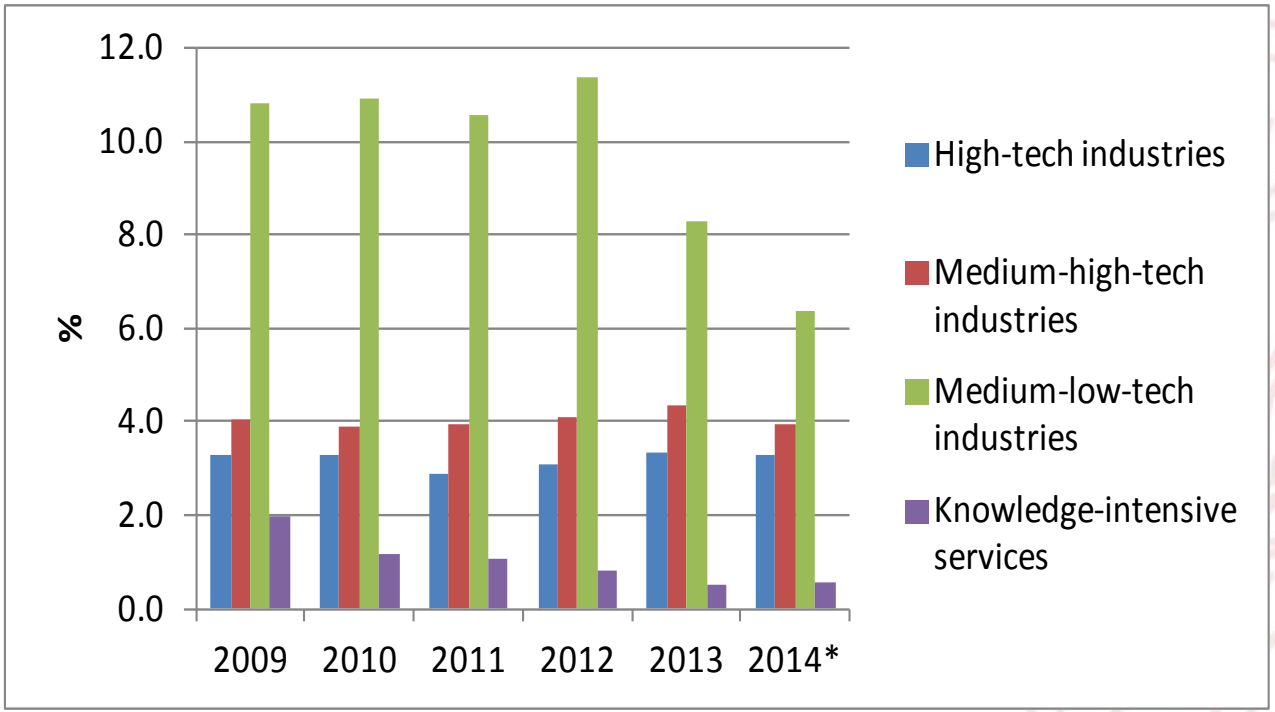
$$ulc_{i,t} = \frac{lc_{i,t}}{empl_{i,t}},$$

Real Growth Rate of Exports, %



Source: Authors' calculations

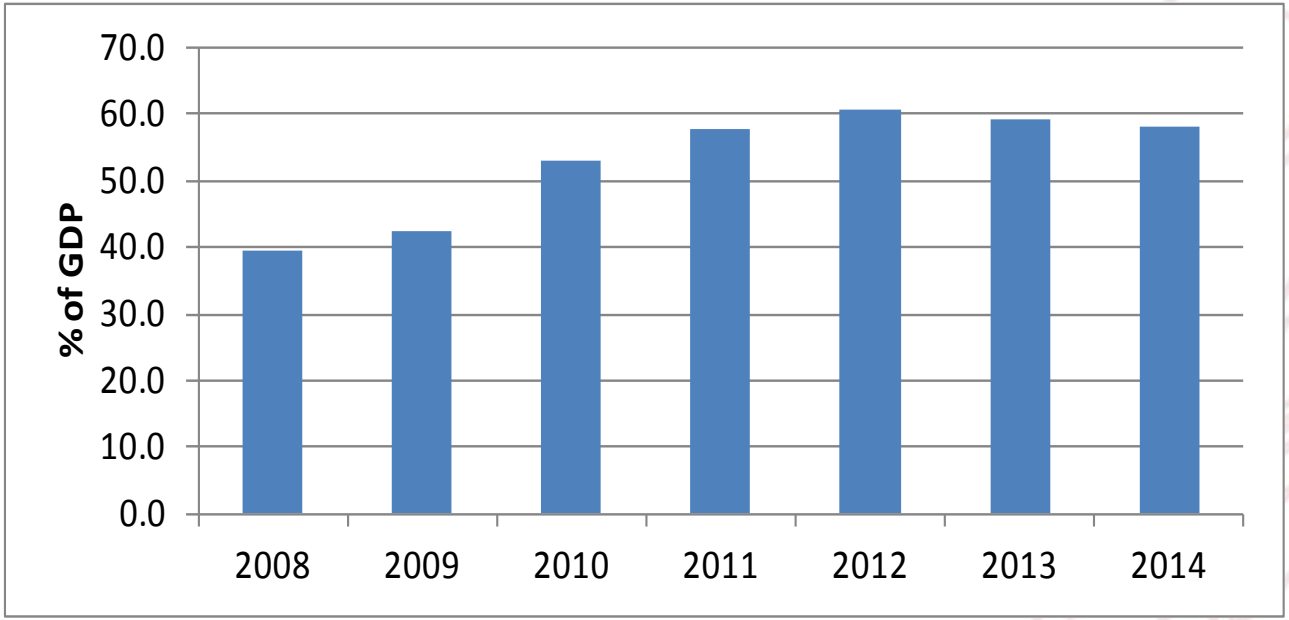
Specialization Indicators, %



Source: Authors' calculations

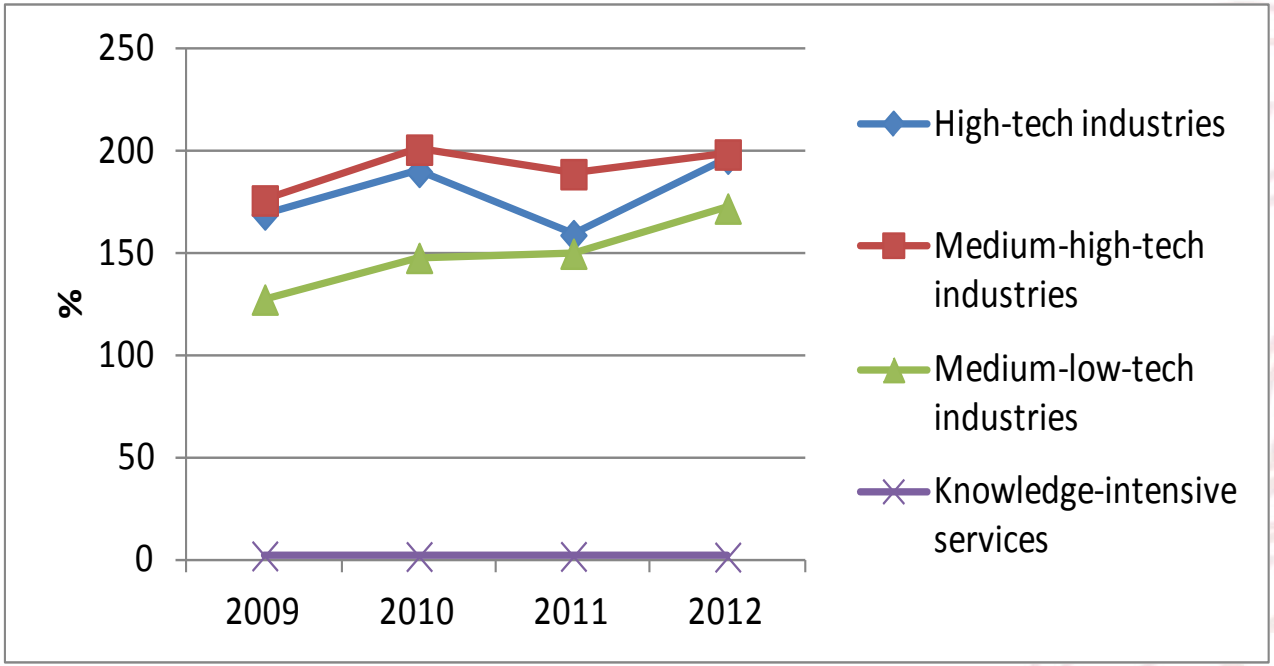
* Preliminary data

Total Exports of Latvia, % of the GDP



Source: Authors' calculations

Ratio of the Exports to the Value Added, %



Source: Authors' calculations

Export Dependency in Selected Industries, %

	2009	2010	2011	2012	2013	2014*
Total economy	13.6	17.9	21.5	23.7	23.3	23.3
(A) Agriculture, Forestry and Fishing	6.8	8.9	9.8	9.3	9.8	9.1
(B) Mining and Quarrying	44.9	42.7	43.4	44.5	49.2	:
(C) Manufacturing	37.8	43.5	48.0	51.6	51.1	48.7
(E) Water Supply	7.2	13.9	16.3	12.6	10.3	:
(F) Construction	1.0	1.3	1.5	1.5	1.7	6.1
(G) Trade	43.4	57.0	80.2	86.0	85.2	80.1
(H) Transportation and Storage	2.2	4.1	6.4	7.6	6.8	5.9
(J) Information and Communication	0.4	0.7	0.8	0.7	0.4	1.1
(K) Financial and Insurance Activities	3.5	4.2	2.1	1.0	1.4	1.1
(N) Administrative and Support Service Activities	4.7	3.6	3.5	1.9	1.6	:
(R) Arts, Entertainment and Recreation	3.4	1.0	0.9	0.7	0.9	0.8

Source: Authors' calculations

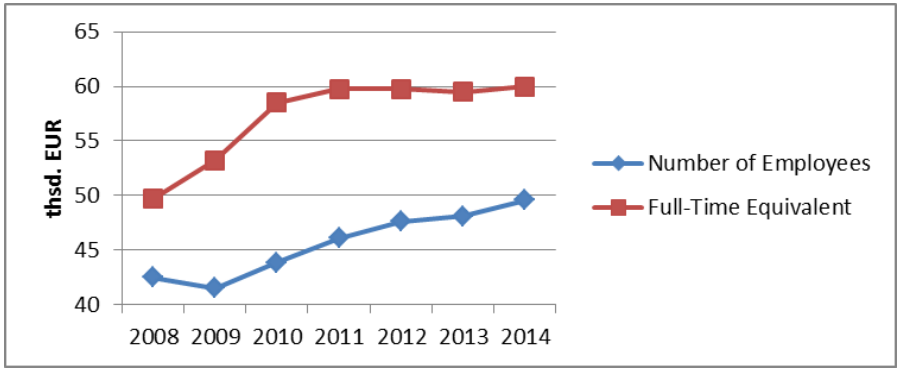
Value Added per Unit of Output in Selected Industries

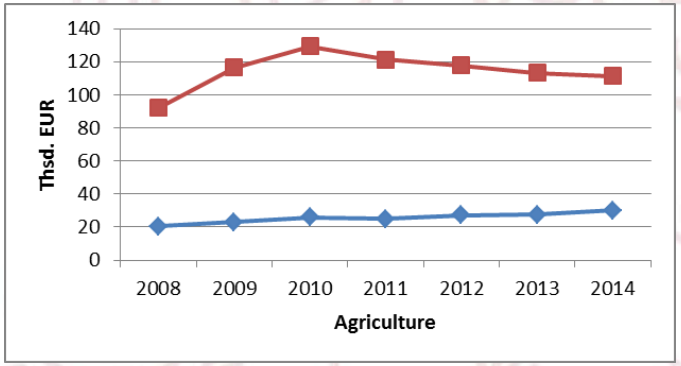
	2008	2009	2010	2011	2012	2013	2014
Total economy	0.45	0.45	0.42	0.42	0.42	0.43	0.43
(B) Mining and Quarrying	0.42	0.49	0.44	0.44	0.45	0.45	
(C) Manufacturing	0.31	0.32	0.32	0.30	0.29	0.29	0.29
(G) Trade	0.55	0.56	0.53	0.57	0.53	0.53	0.53
(J) Information and Communication	0.50	0.48	0.48	0.49	0.50	0.51	0.51
(K) Financial and Insurance Activities	0.66	0.50	0.50	0.55	0.58	0.58	0.58
(L) Real Estate Activities	0.69	0.66	0.63	0.66	0.70	0.69	0.70
(M) Professional, Scientific and Technical Activities	0.51	0.50	0.46	0.51	0.52	0.52	
(O) Public administration	0.70	0.70	0.69	0.68	0.69	0.69	0.71
(P) Education	0.80	0.82	0.78	0.77	0.76	0.76	0.76
(Q) Health and Social Work Activities	0.67	0.64	0.63	0.59	0.62	0.62	0.63
(R) Arts, Entertainment and Recreation	0.54	0.58	0.57	0.63	0.62	0.62	0.63

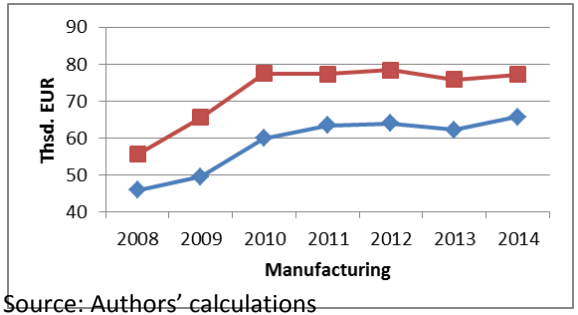
Source: Authors' calculations

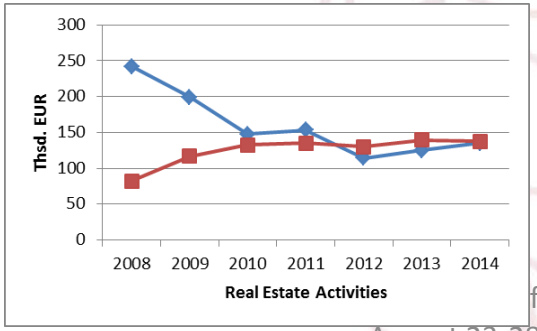
Real Labour Productivity in Selected industries, EUR

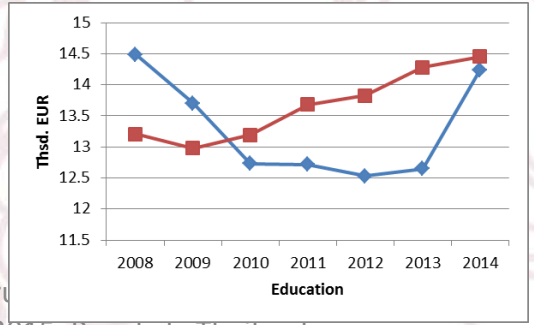
- Number of Employees vs Full-Time Equivalent





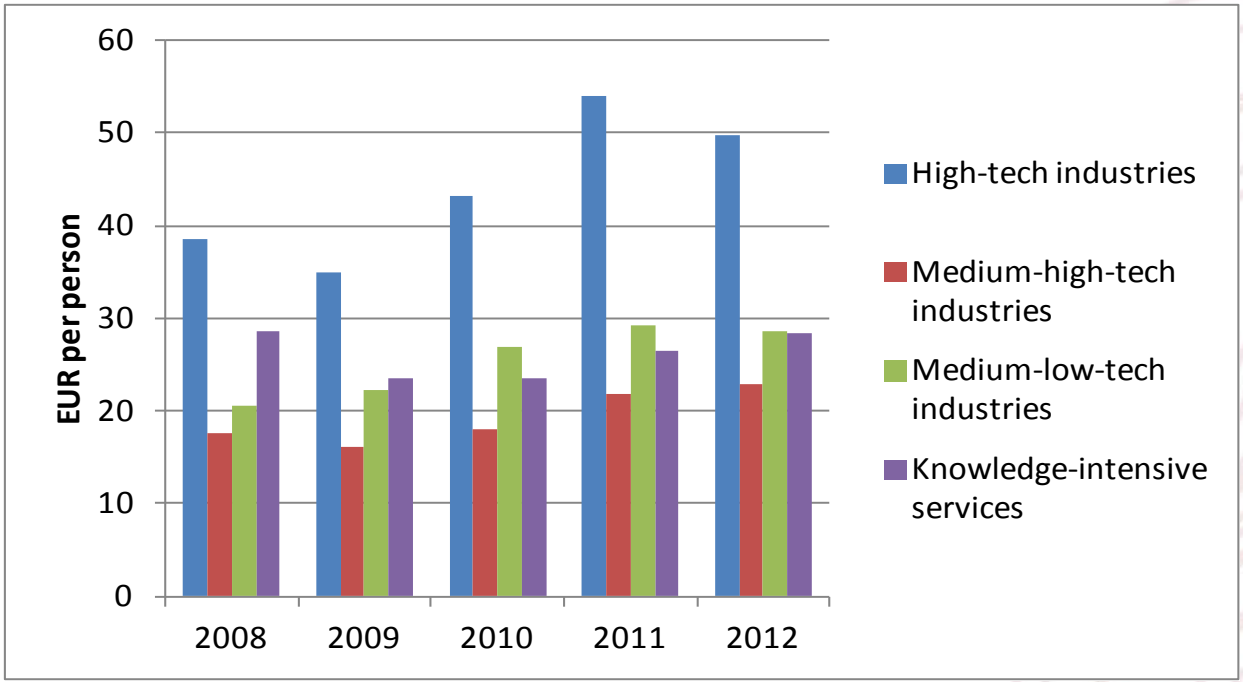






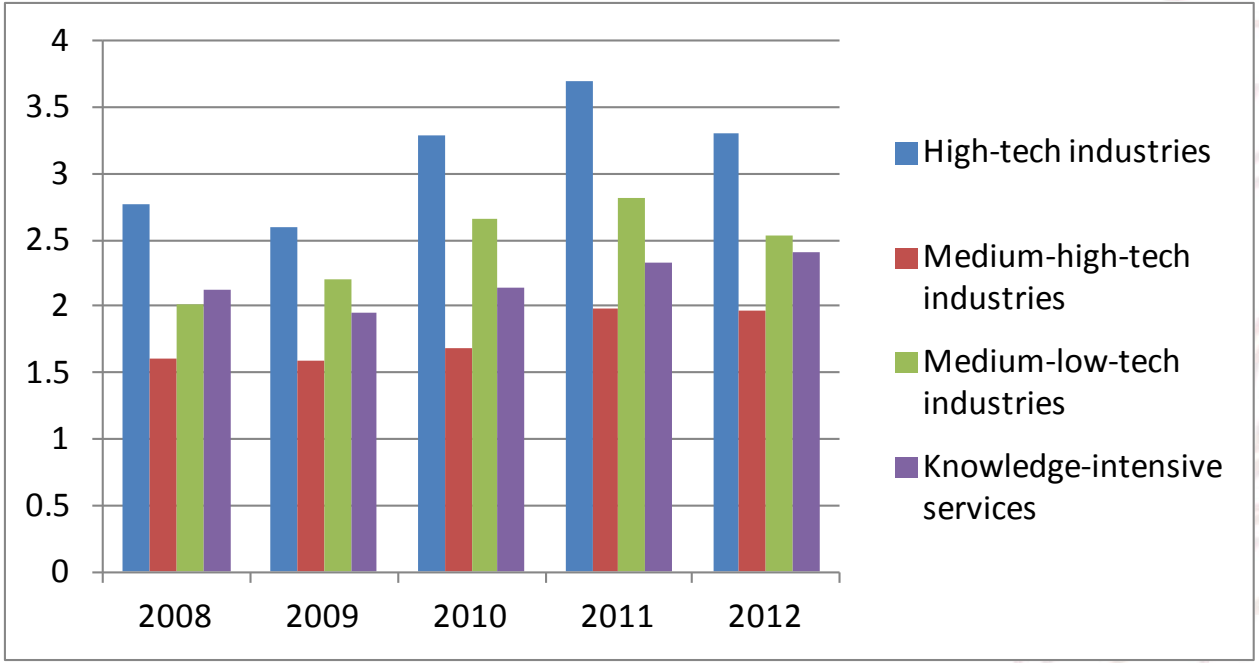
Source: Authors' calculations

Value Added per Employee (FTE), EUR



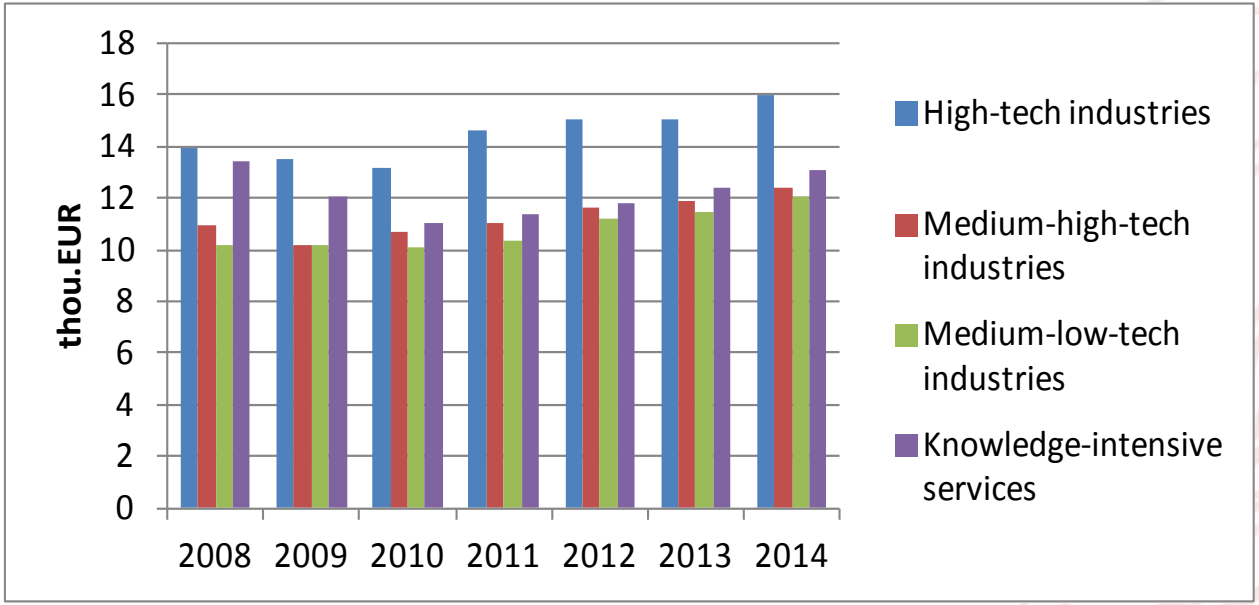
Source: Authors' calculations

Value Added per Unit Spent on Labour



Source: Authors' calculations

Unit Labour costs, thsd.EUR



Source: Authors' calculations

Conclusions

- High-tech industries are industries, which produce higher value added goods in Latvia, however, labour costs are higher in these industries
- Medium-low-tech industries seem more developed than medium-high-tech ones in Latvia
- Labour productivity analysis based on the number of employees can be misleading in several industries.

Possibilities of Further Analysis

- Optimum structure by industries to ensure production of higher value added goods and services
- Reasons for weaker performance of the medium-high-tech industries
- More detailed analysis of service sectors

THANK YOU FOR ATTENTION

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