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<https://doi.org/10.34739/dsd.2019.02.05>



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## THE INFLUENCE OF THE INDUSTRIAL POLICY OF LATVIA ON THE COUNTRY'S ECONOMY

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**ABSTRACT:** The goal of this article is to show the role of the production sector in the economy of Latvia. The authors carried out the comparative analysis of the implementation of the production policy in the Baltic States. The methodology assumes the system approach to problem solving, providing unity of the following qualitative and quantitative methods: Monographic document analysis method (makes it possible to carry out a detailed study based on the extensive scientific literature review and law); Statistical research method. The authors of the article also used the cross correlation analysis (correlation analysis, regression analysis) to study the concept of production policy, its objectives and types, as well as pay special attention to the transformation of the definition of “the production policy” in the modern economy. A comparative analysis of implementation of the Europe 2020 program in the Baltic States and its main indicators was also carried out. The implementation of the production policy was examined: export – import operations in the industry and the level of salaries. Using econometric methods (correlation of Spearman, Pearson and tau Kendall) the authors have shown the relationship between the investments in research and development, the level of salaries and export – import operations in the production sector.

**KEYWORDS:** production policy, economic policy, Latvia, “Europe 2020” program

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## WPLYW POLITYKI PRZEMYSŁOWEJ ŁOTWY NA GOSPODARKE KRAJU

**ABSTRAKT:** Celem artykułu jest zaprezentowanie roli sektora produkcyjnego w gospodarce Łotwy. Autorzy przeprowadzili analizę porównawczą wdrażania polityki produkcyjnej w krajach bałtyckich. Metodologia zakłada systemowe podejście do rozwiązywania problemów, zapewniając jedność metod jakościowych i ilościowych. W artykule wykorzystano: monograficzną metodę analizy dokumentów (umożliwiająca przeprowadzenie szczegółowej analizy w oparciu o obszerny przegląd literatury naukowej i prawa) oraz metodę badań statystycznych. Autorzy artykułu wykorzystali również analizę korelacji krzyżowej (analiza korelacji, analiza regresji) do zbadania koncepcję polityki produkcji, jej celów i rodzajów, zwracając szczególną uwagę na zmiany definicji

„polityki produkcji” we współczesnej gospodarce. Przeprowadzono analizę porównawczą realizacji programu „Europa 2020” w krajach bałtyckich. Zbadano implementację polityki produkcyjnej: eksport – import w przemyśle oraz poziom wynagrodzeń. Korzystając z metod ekonometrycznych (korelacja Spearmana, Pearsona i Kendalla), autorzy wykazali związek między inwestycjami w sektorze badań i rozwoju, poziomem wynagrodzeń a operacjami importowo-eksportowymi w sektorze produkcyjnym.

**SŁOWA KLUCZOWE:** polityka produkcyjna, polityka gospodarcza, Łotwa, program „Europa 2020”

## INTRODUCTION

The term “policy” (from Greek *politike*) means:

- The activity of government bodies, parties, public groups in the field of intrastate and management and international relations, corresponding to their interests and goals;
  - a set of issues of internal and international public life;
  - the nature of anyone’s behavior, aimed at the achievement of a particular goal<sup>1</sup>.
- In a planned economy, the concept of economic policy almost completely merged with the concept of industrial policy, as the main tool of resolution of the problem of food shortages was a maneuver by state capital investments. Probably, therefore, calls for an active industrial policy in the first half of the 1990s and to a certain extent have so far been perceived as a call for reanimation of the central planning system.

## MATERIALS AND METHODS

An analysis of the economic and reference literature shows that the concepts of economic and industrial policy are far from identical. Along with the term “industrial policy”, the concepts of “industrial policy” and “scientific and technical policy” are often mentioned. Let’s consider the content of these two definitions in more detail. *Industrial policy* also means a state policy to promote the exit of an industry from a structural crisis by the means of: 1) overcoming the inconsistency between the emerging new technical and economic paradigm of industrial development and institutional structure of society, 2) the completion of industrial restructuring within the frameworks of the unity of technological, sectoral and institutional restructuring as the most important stage of the cyclical development of the industrial structure. „Industrial policy” refers to the 30s of the twentieth century and is associated with the urgent need, emerging to develop a program to fight with crisis that engulfed the British and American economies<sup>2</sup>.

Paul Krugman, (1999) suggests the following definition of industrial policy: “the state’s attempt to contribute to the flow of resources into certain sectors that the state considers

<sup>1</sup> E. Colomboto, *The Basics of Economic Policy* 2002, p. 434.

<sup>2</sup> V.S. Osipov, I.I. Smotrinskaya, *Actual problems of institutional economics: Theory and practice: study guide, Unity-Dana*, 2015, p.127.

important for further economic growth”<sup>3</sup>, Ha Joon Chang, 1984<sup>4</sup> - “industrial policy aimed at individual sectors (and firms, as their components) for the achievement of such results, which are perceived by the state as effective for the economy, as a whole”, Victoria Price, (1981) industrial policy – in general, a set of government measures to contribute or prevent certain structural changes”<sup>5</sup>; Howard Pack, Kamal Saggi, 2006; Ken Warwick, (2013)<sup>6</sup> industrial policy is a state policy, which aims at the improvement of the business environment or improvement of the structure of economic activity by sectors, technologies and as expected, ensure through the intervention the better prospects for economic growth and public benefit in comparison with the lack of such intervention.

Many foreign authors believe that the term “industrial policy” in the present context is not needed at all. In their opinion, the majority of industries in developed countries achieved success in the 70s-80s of the twentieth century and today, when a new technological paradigm is actively being formed, it is advisable to talk only about innovation policy. Therefore, the term „innovation and industrial policy” is increasingly common in modern publications, understood as a state policy, aimed at identifying and capitalizing of comparative competitive advantages of the economy. This involves the use of those historical, geographical, national and other factors, the development of which will take to a higher level of competitiveness in comparison with foreign competitors. The concentration of state financial and organizational resources on the development of such advantages and the creation of new industries on their basis will create additional domestic, industrial demand and as a result of the cumulative effect will contribute to the development of related industries, sectors and the economy of the country as a whole. Thus, despite the different approaches to the definition of industrial policy developed by scientists of the world, we can state that industrial policy is the most important direction of state economic policy; modern understanding of industrial policy implies a change of the institutional structure of the economy and is characterized by its close relationship with scientific, technological and innovation policy.

Taking into the consideration the content of industrial policy, the authors suggest its following definition: *industrial policy* is a set of measures of government regulation, aimed at changing the institutional structure of the economy based on the latest scientific and technological achievements in order to increase the competitiveness of industries, sectors, enterprises and products both in foreign and domestic markets, stimulation of economic growth, in accordance with the developed national strategic priorities for the long term.

The global experience of state regulation of this sector of material production has defined the general *objectives of industrial policy*:

<sup>3</sup> P. Krugman, *The Return of Depression Economics*, New York 1999, pp. 70-77.

<sup>4</sup> Vide: H. Joon Chang, *The political economy of industrial policy*, St. Martin's Press 1994.

<sup>5</sup> V. Pryce, *Policy Fellow* (31.07.2013).

<sup>6</sup> Vide: H. Pack, K. Saggi, *Regional Cooperation and Free Trade Agreements in Asia* 2016.

- To compliment the objectives of economic policy (for example, equilibrium in balance of payments);
- To accelerate economic development;
- To increase productivity and competitiveness of the economy;
- To improve the operating conditions of industrial enterprises;
- To strengthen national security;
- To influence the structure of industries in a certain territory, to promote the development, reduction or reorganization of industries;
- To influence the amount of capital investments;
- To contribute to technological research in this territory, etc.

An effective state industrial policy should focus on economic entities, both on the expanded reproduction of national wealth and enhancement of human and intellectual potential.

The most important direction of industrial policy in foreign countries is *state regulation of prices*, implemented in various forms: regulation of profit margin in the price of products, direct regulation of prices and tariffs in price formation industries (energy carriers, transport services and, etc.).

Certain signs of industrial policy: activity and prevention; prioritization (or “anti”); redistribution of resources, rights, control between sectors, industries; availability of the winners and (or) losers; focus on long-term gain for the entire economy<sup>7</sup>.

Within the framework of an *active industrial policy* specialists distinguish „proactive” and „reactive” policies. A reactive policy is in constant monitoring of trends of national and global technological development and support of measures of economic and institutional regulation of those, which are recognized as useful. A proactive policy is more risky: it is support of trends at an early stage, based on forecasts, when they haven’t yet manifested and their usefulness can’t be reliably estimated.

*Passive industrial policy* is manifested in the case, if it focuses only on the general financial indicator of development of the national economy.

D.M. Sotnikov suggests the following classification of types of industrial policy, depending on the different axes of consideration:

- By duration of exposure: medium-term and long-term;
- On the scale of impact – system-wide and selective (either horizontal and vertical or passive and active);
- According to territorial coverage – federal, regional and district;
- On the focus of participation in the international division of labor – import-substituting and export-oriented;
- According to the prevailing functional area – scientific and technological, innovation, investment, depreciation, etc.<sup>8</sup>.

<sup>7</sup> K.A. Gorelikov, *Crisis Management: textbook*, Dashkov and K ° Publishing and Trading Corporation 2016.

Thus, there is no consensus, regarding the issues of classification of industrial policy in literature. Traditionally, industrial policy is divided into:

1. Active and passive;
2. Explicit and implicit;
3. Centralized and decentralized;
4. Export-oriented policy and import substitution;
5. And etc.

The subject of state industrial policy is the state and not any political power, but a state of the modern type – an abstract corporation with its own legal entity, different from the personality of the rulers, including the government apparatus and the aggregate of citizens.

For the speedy development and achievement of the goals set, the EU considers the following 7 directions of activity in the field of implementation of economic policy to be priorities:<sup>9</sup>

1. “Innovation Union”. The goal of this direction is to redirect research, developments and innovations to today’s main problems of society, such as climate change, expedient use of energy and resources, demographic problems and problems of health care.

2. “Youth movement”. The goal of this direction is to increase the international attractiveness of European higher education and improvement of quality of education and training at all levels in the EU, combining excellence and equity together, by providing trainees and students with the possibility of movement within the EU, improvement of the situation in the field of employment of young specialists.

3. “Plan of development of digital technologies in Europe”. The goal of this direction was to obtain a sustainable economy and social benefits by creating an EU Common Digital market based on high-speed internet and compatible applications with the possibility of broadband access for all citizens of the EU by 2013, as well as ensuring an increase of speed of using the Internet by 2020, but also an increase by 50% and more number of the individuals connected to the Internet at a speed of more than 100 Mbit/s.

4. “Reasonable use of resources in Europe”. The goal of this direction of activity is to support the reasonable use of resources and development of low-carbon economy, which effectively uses all possible resources. It is necessary to separate the economic growth from the use of resources and economy, to support ideas of conservation and renewability of energy.

5. “Industrial policy aimed at globalization”. The European Commission intends to work with the parties concerned (in business, trade unions, institutions of science, organizations, protecting the rights of consumers) for the development of common principles of modern industrial policy, support of entrepreneurs to direct and to help industry successfully to take perceived problems and changes.

<sup>8</sup> D.M. Sotnikov, *Criteria for the selection of priorities of the state industrial policy* “Vestnik MGU”, “Economy”, №1, 2010, <http://refleader.ru/poljgernaotrpol.html> (30.08.2019).

<sup>9</sup> Europe 2020, Retrieved from: <http://ec.europa.eu/eu2020/pdf>.

6. “A plan for development of new abilities and increase the number of workplaces”. The goal of this direction is the creation of the required conditions for the improvement of labor market for the increase of employment and guarantee of the stability of society. Providing Europeans with new opportunities by gaining new knowledge and skills by them, the EU aims future labor force at adaptation to changing conditions in the labor market that will lead to a decrease of unemployment and increase of productivity of activity of employees<sup>10</sup>.

Thus, from the proclaimed 7 directions of activity in EU, personnel issues, investment costs in innovations, implementation of industrial policy are related to the development of production sector.

For the implementation of program documents of the EU, in particular the Europe 2020 program, a strategy of implementation of the Europe 2020 program has been developed in Latvia. The country is implementing *measures to improve the business environment in 2017-2018*<sup>11</sup>.

- The principle “Consult first” was introduced into the work of national regulatory authorities that ensures the effective and positive communication with government bodies;
- a deferred Corporate Income Tax (CIT) was introduced for the profit of enterprise, which is paid, when distributing profit of the enterprise (CIT is not used for reinvested profit);
- Starting from January 1, 2018 the new CIT model came into force, which doesn't provide for advanced payments of CIT, but CIT should be paid only for a month, when the costs were not diverted to the development of the enterprise.
- data monitoring was introduced in the divisions of land plots for real estate owned by a legal entity, having sent electronic notifications, concerning any confirmed evidence;
- The electronic insolvency monitoring system was introduced which enabled controlling the insolvency proceedings and obtaining required indicators to study the effectiveness and improvement of the system;
- A memorandum of cooperation with Startup Association Startin.lv was signed; an action plan was developed to develop a start-up ecosystem for the development of start-ups. In 2017 amendments to the Immigration Act came into force, allowing start-up companies to attract highly qualified specialists from third countries, providing for a special temporary residence permit founders of start-ups. Amendments to the Law on providing assistance to start-up companies that will significantly expand the scope of the law, allowing a wider range of start-ups to qualify for affordable assistance in the form of tax abatements and attractiveness of qualified employees. A legal regulation is improved, which supports the creation of *innovative companies* in Latvia in such fields as ridesharing and crowd funding.

<sup>10</sup> The full text of the Europe 2020 strategy on the EU website in English: <http://ec.europa.eu/eu2020/pdf>.

<sup>11</sup> Europe 2020, <https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/europea> (30.08.2019).



- A legal regulation is improved which supports the creation of innovative companies in Latvia in such fields as joint use and reverse processing.

In Latvia the existing support tools continue to improve the existing programs of state aid. In 2018 start-ups in Latvia had access to venture financing in 2 start-ups funds and 2 funds with growth risk with state co-financing in the amount of 60 million Euro and 3 acceleration funds with state co-financing in the amount of 15 million Euro;

-To improve the situation in the field of attraction of capital in the economy of Latvia, in 2017, work was completed on revising the legislative base of joint stock companies in order to simplify the attractiveness of capital for the company, as well as to strengthen the protection of the rights of investors (bondholders). The procedure of distribution of shares is also being revised by the employees of the company; the rights of companies to make decisions concerning the incentives for their employees are expanding.

Thus, from the carried out analysis, we have seen that measures are being actively taken in Latvia to improve the business environment, in particular in the field of industrial policy.

## FINDINGS AND DISCUSSION

Further, let's carry out an analysis of the macroeconomic indicators, which Latvia performs and plans to fulfill until 2020.

Indicators	2016	2017	2018	2019 <sup>12</sup>
GDP growth (%)	2,2	4,5	3,3	3,2
Inflation (%)	0,1	2,9	2,6	2,6

**Table 1.** Analysis of the growth rate of GDP and inflation in Latvia from 2016 to 2019  
Source: European Commission.

As we can see from the data in the table, Latvia planned to increase the country's GDP by more than 3.0% in 2018 and 2019, while leaving the inflation rate at 2.6% that meets the requirements of the ECB.

Further, let's consider the implementation of the program Europe 2020.

Year	Costs of research and development, % of GDP		Persons with higher education aged 30 to 34 years,%	
	EU	Latvia	EU	Latvia
2008	1,84	0,58	31,2	26,3
2009	1,93	0,45	32,3	30,5
2010	1,93	0,61	33,8	32,6

<sup>12</sup> Forecast of the Eurostat Europe 2020, <https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/europea> (2.09.2019).

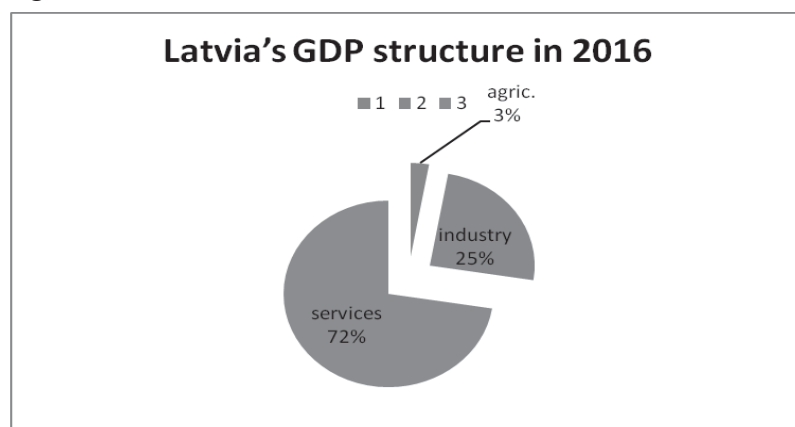
2011	1,97	0,7	34,8	35,9
2012	2,01	0,66	36	37,2
2013	2,02	0,61	37,1	40,7
2014	2,03	0,69	37,9	39,9
2015	2,04	0,63	38,7	41,3
2016	2,03	0,44	39,1	42,8
2017	2,03	0,51	39,9	43,8

**Table 2.** Comparative analysis of the EU countries and Latvia on the costs of research and development ( as % of GDP) and persons with higher education aged 30 to 34 years in the period from 2008 to 2017

Source: developed by the authors based on European Commission's data<sup>13</sup>.

As it was indicated above, the main indicators influencing the implementation of industrial policy in the country are as follows: the costs of the research and development, as a percentage of GDP and the level of higher education among groups aged 30 to 34 years. From the data presented in the table, we see that in Latvia, despite the declared costs at the level of 1.5% of GDP for innovations, the expenditure of funds has significantly decreased. Here, it should be noted that the number of people with higher education continues to grow. Thus, if in 2008 this indicator was at the level of 26.3%, then in 2017 it reached the level of 43.8%.

Furthermore, let's examine the role of industry in the structure of the country's GDP, figure 2.



**Figure 2.** Latvia's GDP structure in 2016

Source: developed by the authors.

Thus, the carried out analysis of Latvia's GDP structure shows that Latvia is developing as post-industrial state – the size of services is 72%, the share of production is 25% and agriculture accounts for 3%.

Further, let's carry out an analysis of the main competitors of the metalworking and machine-building industry (Table3).

Thus, let's carry out an analysis of the metal production market in Latvia; we will represent data in the table 5.

<sup>13</sup> European Commission, <https://europa.eu/webtools/rest/charts/export/html/> (2.09.2019).



Years	Export, thousand euros	Import, thousand euros	Salaries by industry, gross, euro
2009	5 125 529	6 701 407	573,74
2010	6 680 217	8 411 939	594,49
2011	8 535 119	10 983 288	642,48
2012	8 535 119	12 512 279	684,97
2013	10 021 291	12 635 138	707,79
2014	10 248 603	12 654 337	765,11
2015	10 363 212	12 492 133	818,6
2016	10 357 703	12 249 219	865,94
2017	11 500 163	14 041 801	948,1

**Table 5.** Analysis of export, import of Latvia and salaries in the metalworking and machine-building industries from 2009 to 2017 (developed by the authors)

Source: Central Statistics Bureau of Latvia<sup>14</sup>.

Thus, as we see from the data presented in table 5, export and import in Latvia for the examined period have increased more than doubled.

Using the data of table 4, let's carry out a correlation analysis of the level of export – import operations in the country with the level of salaries in the industry.

For the calculation we use the EXCEL program.

Years	2009	2010	2011	2012	2013	2014	2015	2016	2017
Import total thousand tons	6 701 407	8 411 839	10 983 288	12 512 279	12 635 138.	12 654 337	12 492 133	12 249 219	14 041 801
Brutto payment, Euro	573,74	594,49	642,48	684,97	707,79	765,11	818,6	865,94	948,1
Export total thousand tons	5 125 529	6 680 217	8 535 119.	9 871 054.	10 021 291	10 248 603	10 363 12.	10 357 703	11 500 163.
Correlation coefficient: 0,93585904									
Correlation coefficient: 0,89389352									

**Table 6.** The calculation of the correlation coefficient of export –import operations of Latvia and gross salaries by industry

Source: calculated by the authors.

The coefficient of salary correlation in manufacturing industry (brutto payment, euro) and the level of import (import total, thousand tons) in Latvia is 0,93585904, which shows a high correlation between the indicators presented<sup>15</sup>. The salary correlation coefficient for the industry and the level of export (export total, thousand tons) in Latvia was 0,89389352, which also indicates a high correlation between the volume of export and the level of salaries in the industry.

<sup>14</sup> Central Statistics Bureau of Latvia, [http://data1.csb.gov.lv/pxweb/lv/sociala/sociala\\_\\_dsp\\_izmaksas\\_\\_ikgad/DIG012.px/table/tableViewLayout1/?rxid=f15af91d-605e-4b12-b3e3-4e30ce2715ca](http://data1.csb.gov.lv/pxweb/lv/sociala/sociala__dsp_izmaksas__ikgad/DIG012.px/table/tableViewLayout1/?rxid=f15af91d-605e-4b12-b3e3-4e30ce2715ca) (2.09.2019).

<sup>15</sup> W. H. Greene, *Econometric Analysis*, New York University 2010, pp. 56–57.

The carried out calculations of the correlation coefficient show that the level of salaries is influenced by the volume of import, the correlation coefficient was 0,902558 and export operations have an influence on the level of salary in the industry and correlation coefficient - 0,89389352.

Furthermore, for the analysis of the industry we use the SPSS program and calculate the correlation, using the Spearman, Person and Tau Kendall method. The results of the calculations will be presented in the form of table №6.

		Year	Labour	Turnover	Patent	Productiv	R&D	Education
Pearson Correlation	Year	1,000	,995	,806	,164	,977	-,678	,954
	Labour	,995	1,000	,861	,217	,974	-,646	,971
	Turnov	,806	,861	1,000	,461	,795	-,315	,902
	Patent	,164	,217	,461	1,000	,047	,012	,418
	Produc	,977	,974	,795	,047	1,000	-,666	,894
	R&D	-,678	-,646	-,315	,012	-,666	1,000	-,566
	Educ	,954	,971	,902	,418	,894	-,566	1,000
Sig. (1-tailed)	Year	.	,000	,027	,378	,000	,069	,002
	Labour	,000	.	,014	,340	,001	,083	,001
	Turnov	,027	,014	.	,178	,029	,272	,007
	Patent	,378	,340	,178	.	,465	,491	,205
	Produc	,000	,001	,029	,465	.	,074	,008
	R&D	,069	,083	,272	,491	,074	.	,121
	Educ	,002	,001	,007	,205	,008	,121	.

**Table 6.** Calculation of Pearsons Correlation.

Source: calculated by the authors .Thus, for the correlation, the author used data from 2009 to 2017.

The following coefficients were used as indicators:

- Number of employees in the production sector,% (2015 – 100%) – labor;
- Net turnover of companies of production sector,% - turnover;
- Number of patents, applications, filed with the European Patent Office, pieces– patent;
- Labor productivity of employees of production sector, % (2015=100%) – productivity;
- Costs of research and development, % of the country's GDP, % - R&D;
- Number of people aged 30 to 34, with higher education, %- education

According to the results of calculations, the authors formed the table№ 7, in which we estimated those indicators, which are confirmed by the Pearson correlation coefficient.

	Labour	Turnov	Patent	produc	R&D	Educ
Labour	1,000	<b>,861</b>	,217	<b>,974</b>	-,646	<b>,971</b>
Turnov	<b>,861</b>	1,000	,461	<b>,795</b>	-,315	<b>,902</b>
Patent	,217	,461	1,000	,047	,012	<b>,418</b>
Produc	<b>,974</b>	<b>,795</b>	,047	1,000	-,666	<b>,894</b>
R&D	-,646	-,315	,012	-,666	1,000	-,566
Educ	<b>,971</b>	<b>,902</b>	,418	<b>,894</b>	-,566	1,000

**Table 7.** The calculation of the Pearson correlation coefficients.

Source: calculated by the authors.

- The authors emphasize the most significant results in the table, for example, calculations showed that in the industry there is a high correlation between the number of employees and labor productivity – correlation coefficient – 0.974;
- Between the number of employees and net turnover, the correlation coefficient – 0.861;
- Between the number of employees and the level of education – the correlation coefficient – 0.971;
- Between the turnover and the level of education – the coefficient of correlation – 0.902;
- Between the labor productivity and the level of education, the coefficient of correlation – 0.894.

#### Correlations

			labour	Turnov	patent	produc	R&D	educ
Kendall's tau_b	Labour	Correlation Coefficient	1,000	<b>,786**</b>	,238	<b>,905**</b>	-,293	<b>,929**</b>
		Sig. (2-tailed)	.	,006	,453	,004	,362	,001
	Turnov	Correlation Coefficient	<b>,786**</b>	1,000	,333	,619	-,586	<b>,857**</b>
		Sig. (2-tailed)	,006	.	,293	,051	,068	,003
	Patent	Correlation Coefficient	,238	,333	1,000	,200	,000	,238
		Sig. (2-tailed)	,453	,293	.	,573	1,000	,453
	Produc	Correlation Coefficient	<b>,905**</b>	,619	,200	1,000	-,195	<b>,810*</b>
		Sig. (2-tailed)	,004	,051	,573	.	,543	,011
	R&D	Correlation Coefficient	-,293	-,586	,000	-,195	1,000	-,390
		Sig. (2-tailed)	,362	,068	1,000	,543	.	,224
	Educ	Correlation Coefficient	<b>,929**</b>	<b>,857**</b>	,238	<b>,810*</b>	-,390	1,000
		Sig. (2-tailed)	,001	,003	,453	,011	,224	.
Spearman's rho	Labour	Correlation Coefficient	1,000	<b>,881**</b>	,357	<b>,964**</b>	-,342	<b>,976**</b>
		Sig. (2-tailed)	.	,004	,432	,000	,452	,000
	Turnov	Correlation Coefficient	<b>,881**</b>	1,000	,429	,750	-,559	<b>,952**</b>
		Sig. (2-tailed)	,004	.	,337	,052	,192	,000
	Patent	Correlation Coefficient	,357	,429	1,000	,429	,000	,357
		Sig. (2-tailed)	,432	,337	.	,397	1,000	,432
Produc	Correlation Coefficient	<b>,964**</b>	,750	,429	1,000	-,252	<b>,893**</b>	

	Sig. (2-tailed)	,000	,052	,397	.	,585	,007
R&D	Correlation Coefficient	-,342	-,559	,000	-,252	1,000	-,468
	Sig. (2-tailed)	,452	,192	1,000	,585	.	,289
Educ	Correlation Coefficient	<b>,976**</b>	<b>,952**</b>	,357	<b>,893**</b>	-,468	1,000
	Sig. (2-tailed)	,000	,000	,432	,007	,289	.

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

**Table 8.** Calculation of the Spearman and Tau Kendell correlation.

Source: calculated by the authors.

Thus, the calculation of the correlation coefficients, using the Spearman and tau Kendell method shows that the number of employees in the industry is affected by the turnover of companies, labor productivity and the level of education. Of the indicators examined by the authors, only between the specified coefficients there is a correlation that was proved, using the Spearman, Pearson and Tau Kendell correlations. This is also confirmed by the Sig coefficient (2-tailed) < 0,05 (highlighted in red by the author).

## CONCLUSIONS

The research conducted by the authors, using econometric methods (Spearman, Pearson and Tau Kendell correlations) in Latvia showed that country has a high resource of human capital for the implementation of the production policy in the country. In Latvia there is an increase in the manufacturing sector, which, in the opinion of the authors leads to an increase in employment, an increase in export and most importantly – the creation of an innovative economy. The increase in funding of the research and development of the country will further not only contribute to the development of the industrial sector, but also to sustainable growth of the state economy.

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