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COMPETITIVENESS OF INDUSTRY IN COUNTRIES ON DIFFERENT LEVELS OF DEVELOPMENT DURING THE 1970-2015 PERIOD

Konkurentnost industrije zemalja različitog nivoa ekonomske razvijenosti u periodu 1970-2015.

Abstract

The paper investigates the shifts of competitiveness of industry in 212 countries measured by the amount of manufacturing value added per capita during the period from 1970 to 2015. Thereby the countries are classified in three groups: a) highly industrialised economies (51 countries), b) emerging industrial countries and economies (33 countries), and c) the least developed economies (46 countries) and other developing economies (82 countries), making a total of 128 countries. The obtained results show that productivity in industry of the developed countries is four times higher than the average productivity of the world industry, which is a specific confirmation of their competitive superiority. These results are also in accordance with the thesis that on a high level of gross domestic product per capita, the improvement of competitiveness of industry is predominantly based on the creation of capabilities.

Keywords: *industry, capacity of industry, value added of industry, industrial productivity, competitiveness of industry*

Sažetak

U radu se istražuje kretanje konkurentnosti industrije 212 zemalja u svetu merene iznosom dodate vrednosti industrije po stanovniku u periodu 1970-2015. Pritom su zemlje svrstane u tri grupe: a) visoko industrijalizovane privrede (51 zemlja), b) privrede u procesu industrijalizacije (33 zemlje) i c) najmanje razvijene privrede (46 zemalja) i ostale privrede u razvoju (82 zemlje), ukupno 128. Dobijeni rezultati pokazuju da je produktivnost u industriji razvijenih zemalja skoro četiri puta veća od prosečne produktivnosti svetske industrije, što je svojevrsna potvrda njihove konkurentne superiornosti. Ovi rezultati su takođe u skladu sa tezom u ekonomskoj teoriji da se na visokom nivou bruto domaćeg proizvoda po glavi stanovnika unapređenje konkurentnosti industrije dominantno temelji na stvaranju sposobnosti.

Ključne reči: *industrija, kapacitet industrije, dodata vrednost industrije, industrijska produktivnost, konkurentnost industrije*

Introduction

Competitiveness is one of the most often used expressions in economic theory. In short, competitiveness speaks of the capability to achieve success in markets where the participants who have built the available knowledge and capabilities in products and services meet. Competitiveness is a multidimensional phenomenon and as such is necessarily present at the level of the enterprise, specific industry or country as a whole. The level on which it is investigated is an important aspect in the consideration of the concept of competitiveness [1], [7], [9] (Figure 1).

A number of economy analysts think that the phenomenon of competitiveness has a status of “the natural law of capitalist economy” [7]. Others, however, argue that the context of competitiveness can be identified with the category of productivity, hence it is basically only a different name for measuring the rate of output goods and services per unit of input factors [8]. We think that the category of competitiveness is contextually more abundant in comparison to the category of productivity, and that it is a cumulative expression of numerous aspects and business factors [4]. This fact is especially emphasised by the process of growing globalisation. In the global economy, which is characterised by a pronounced trend towards the increase of network of economic protagonists, to be competitive is increasingly less an issue of existence of absolute advantage in manufacturing certain goods, and

growingly more of the market position and relationship towards the competition.

There is no generally accepted theory of competitiveness. The perception of competitiveness is most often perceived as ranging from the basic level of enterprise to international (global) competitiveness. The existing studies on competitiveness are focused on various categories of analysis, such as competitiveness of an enterprise, sector, region, country, regional economic communities, international competitiveness (global competitiveness, external competitiveness). A number of authors argue that in the current conditions of production, the basis for competitiveness in the greatest number of countries is presented in the structure and development of their respective industries [15, p. 118].

Competitiveness is undoubtedly one of the most complex indicators of success of the industry. It implies more effective and efficient business in this sector in comparison to other competitors, which is followed by market success, without protectionism and subsidies [10], [11]. Competitiveness of industry is often perceived on the basis of efficiency of exploiting production factors (labour, capital, energy, raw materials). Although cost competitiveness determines the efficiency of using all factors of production, the intensity of use determines the significance of particular factors in the production and development of competitiveness. For example, costs of labour per unit are a good indicator of industrial competitiveness, because they arise from the production process, include the largest component of expenses and show to what extent total expenses of labour participate in the generated productivity, i.e. the newly-formed value.

The achieved level of manufacturing value added illustrates the size of its potential, while the change of this potential speaks of the intensity of industrialisation or deindustrialisation. The level of industrialisation of a country is calculated when the value added, produced in the sector of industry, is observed in relation to the number of the population. Increase of productivity is of vital importance for the improvement of competitiveness of industry. Industrialisation which is followed by permanent rise in productivity provides for the development of contemporary economy. By increasing the competitiveness of industry, its

Figure 1: Different levels of competitiveness



Source: [8, p. 279].

role and significance in economic development of certain countries improve. Although the share of industry in gross domestic product has been decreasing in the most developed countries, productivity of industry still increases, which is what continues to secure a central role for industry in modern-day economy. Technological changes alter the nature of industry, thus increasing its productivity and improving competitiveness [4].

The subject of this paper is an analysis of competitiveness of industry in 212 world countries, classified in three groups depending on the achieved level of economic development during the 1970-2015 period. The amount of value added per capita generated in this sector is taken as an indicator of industry competitiveness. We think that value added per employee or value added divided by working hours in industry could be a more precise indicator. However, these data are not available for most countries worldwide.

Speaking of quantifying competitiveness of industry, productivity and export are the most frequently analysed variables [2, p. 733]. However, although the indicator of competitiveness is indisputably a significant indicator for an enterprise or industry, export competitiveness is proof of its international competitiveness [12]. Certain pieces of research which deal with the analysis of competitiveness of particular sectors of industry also use relative process in the respective industry as an indicator related to one or more foreign competitors, therefore, in that case, price competitiveness of the country in a specific industry is taken into consideration [12].

The aim of this research is to answer the question of whether the industry of the leading economies of the world, with high levels of GDP per capita, is still more competitive in relation to the emerging industrial countries

by analysing the shifts of productivity in the global industry during the period from 1970 to 2015.

The paper is divided in five sections. After the Introduction, the second section introduces theoretical starting points of the authors of this paper, according to which the development of capability is a vital determinant for improving industrial competitiveness in contemporary conditions of production. The third section presents data on economic development and the size of industrial capacities of the countries grouped according to the level of industrialisation from 1970 to 2015. In addition, this section includes the dynamics of industry competitiveness measured by the value added of the industrial sector per capita during the same time interval. The obtained results are discussed in the fourth section. Finally, the fifth section presents the concluding observations.

Building capability with the aim of creating competitive advantages of industry in contemporary business conditions

Relevant research shows that in the last thirty years, differences between industrialised and fast-growing countries that are in the process of industrialisation gradually decreased, and that the leading emerging countries have already caught up with the industrialised countries in their industrialisation process in terms of the degree of their economic development [3]. Faced with a decrease in competitiveness of its industrial sector, the European Union has taken a whole series of measures aimed at termination of such tendencies. Table 1 presents a survey of some of the measures and activities for improving competitiveness of industry in the EU countries.

Table 1: Strategies for achieving competitiveness according to the level of economic development

Grades of economic development of a country	Factors	Emerging countries	Countries in transition	Developed countries
Basic factors	Factor conditions based on business	Resources Protectionism	Production Efficiency	Knowledge Competitiveness
	Similar and accompanying industries	Basic infrastructure (roads, harbours etc.)	Industrial clusters	Regional integration
	Conditions of demand	Quantity	Quality	Sophistication
Human factor	Labourers	Cheap	Motivated	Trained
	Politicians	Simplification	Support and regulation	Advisory role
	Entrepreneurs	Risk exposure	Efficiency growth	Creation of values
	Experts	Operational	Managing	Strategic

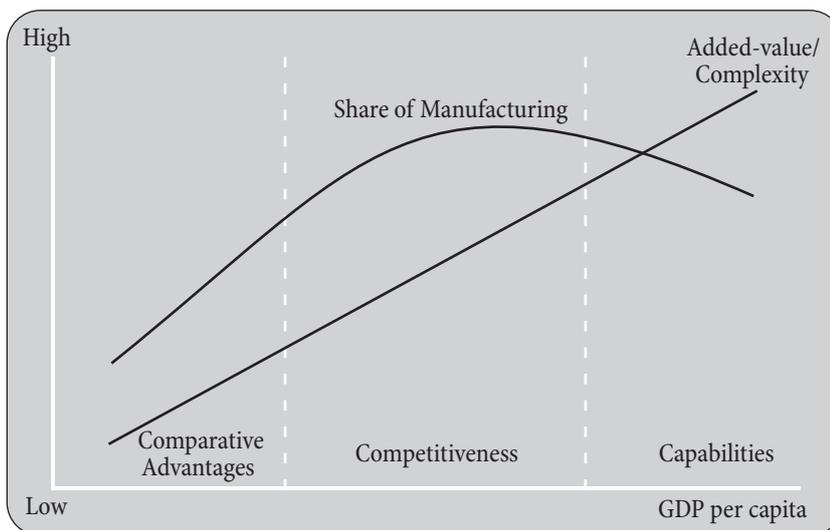
Source: [11].

Productive and technological capacities of countries which are on various levels of economic development are different. In the early stage of economic development, comparative advantages were emphasised in the development of industry, whose sources were permanent (e.g. natural resources) or temporal (cheap labour). The growth of the gross domestic product (GDP per capita) brought about a change in the relative share of the industry sector in its generation. More precisely, on lower levels of economic development, relative growth of industry was first included in the generation of GDP, and later its share decreased. In this stage of economic development, the development of industry was

focused on improving its competitiveness by creating capabilities (Figure 2).

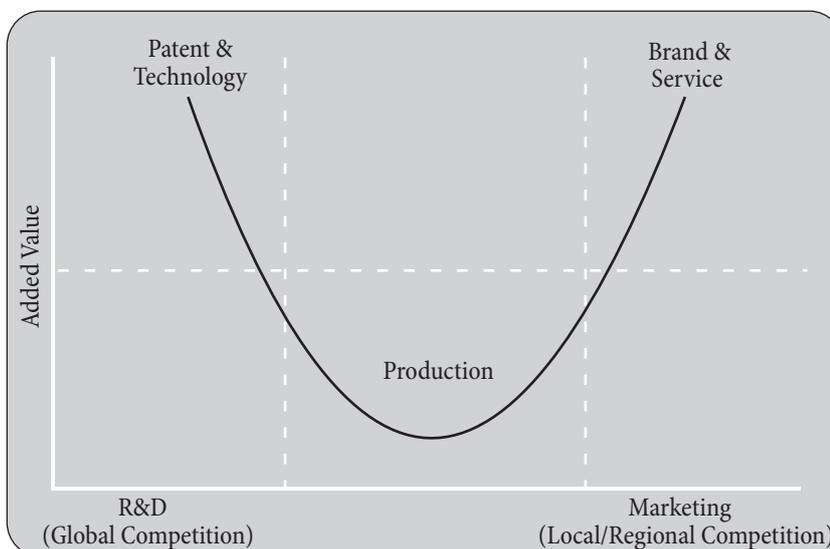
The strategy of improving competitiveness of industry in the present conditions of production implies a change in the significance of particular activities in the global value chain. The activities that precede direct product manufacturing (research, development, patent protection) gain in significance, as well as the activities that follow this process (product marketing and branding). In short, capabilities are in the function of creating key competitive advantages. In these activities of the value chain, relatively high levels of value added are concentrated in the industry sector in the leading economies of the world (Figure 3).

Figure 2: Transition towards manufacturing capabilities



Source: [5, p. 8].

Figure 3: Generic smiling curve in the value chain



Source: [5, p. 9].

New forms of competitiveness emerge which, being different segments of the value chain, require various capabilities. In this stage of economic development in certain countries, industrial production is relocated from the economically most developed to the emerging industrial countries, especially to large developing countries in Asia. However, it should be noted that these stages of the global value chain become relatively standardised and are characterised by relatively low rates of yield in comparison to the yield rates of the activities that precede direct production (e.g. activities of research and development, design) and follow the process of direct production (e.g. marketing and logistics).

Since technological complexity, structure of employees and development of particular structures within an industry significantly differ among countries, it is possible to classify the countries according to the complexity of technological structure of industry, i.e. depending on the achieved level of industrial development.

Research

There is a great difference between developed, industrialised countries (countries with a developed economy, high level of income, great physical and financial capital, a great number of highly specialised workers, high standard of living of the population, etc.) and emerging countries (countries with non-developed industry, poor standard of living, etc.), as well as between the emerging countries themselves in terms of the level of development of industrial capacities and industrial competitiveness (emerging industrial countries, although with lower standard of living and less developed industry and income in comparison to the developed countries, are significantly ahead of other developing economies).

Production and technological capabilities of countries in different stages of economic development vary. Technological complexity, structure of employees and leading sub-sectors of industry differ significantly from one country to another. All of this makes the comparison between countries more difficult and points to the need for identifying comparable countries which are in the same developmental stage, i.e. for classifying together

the countries with similar productive/technological structures.

The basic criterion for classifying countries by the degree of industrial development in this paper is the level of manufacturing value added per capita [6]. Depending on the level of manufacturing value added per capita and the amount of GDP per capita measured by parity of purchasing power, four groups of countries were formed [14]:

- Industrialised economies (51 countries)¹
- Emerging industrial countries (33 countries)²
- The least developed countries (46 countries), and
- Other developing economies (82 countries).

Statistical thresholds and other criteria which define each group of countries according to their level of industrial development are presented in Table 2. Input data for the assessment of competitiveness of the global industry for the 1970-2015 period are taken from the UNCTADstat database [13].

The applied methodology of classifying countries around the world provides for comparative analyses of growth and structure of the industrial activities, identification of the leading industrial countries, countries that are being industrialised the most, as well as those which are experiencing a slowdown in the process of their industrialisation. The basic aim of this selection is to create relatively homogenous groups of countries with mutual characteristics defined by the provided impartial criteria.

Each of the four groups of countries meets the following conditions for research and statistic follow-up:

- Clear method of aggregation for follow-up of changes in total economic growth and structure is established;

1 Industrialised countries and economies: Andorra, Aruba, Australia, Austria, Bahrain, Belgium, Bermuda, British Virgin Islands, Canada, Cayman Islands, Hong Kong, Macao, Taiwan, Czech Republic, (Czechoslovakia), Denmark, Estonia, Finland, France, French Polynesia, Germany (German Democratic Republic and Federal Republic of Germany), Greenland, Hungary, Iceland, Ireland, Israel, Italy, Japan, South Korea, Kuwait, Latvia, Luxembourg, Malaysia, Malta, the Netherlands, New Caledonia, New Zealand, Norway, Portugal, Qatar, Russian Federation, San Marino, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, the Soviet Union, the United Arab Emirates, Great Britain, USA.

2 Emerging industrial countries and economies: Argentina, Belarus, Brazil, Brunei, Bulgaria, Chile, China, Columbia, Costa Rica, Croatia, Cyprus, Greece, India, Indonesia, Kazakhstan, Mauritius, Mexico, Oman, Poland, Romania, Saudi Arabia, Serbia, South Africa, Surinam, Thailand, Macedonia, Tunisia, Turkey, Ukraine, Uruguay, Venezuela.

- International comparison is provided in order to identify the leading countries and group of countries, as well as those that are in a slowdown;
- The grounds for statistical analyses are provided by using basic and advanced methods such as calculation of the mean value on an aggregate level, the size of the discrepancy, identifying exceptions etc. [14, p. 8].

Economic development and size of industrial capacity and industrial potential of the countries classified by the level of industrialisation in the 1970-2015 period is presented in Table 3.

In 2015 in the global industry, the value added of 10,175 billion US dollars at constant 2005 prices was generated, which was the highest manufacturing value added ever. The industrialised countries still dominate the world's industrial production (88.5% in 1970, and 62.9% in 2015). The share of these countries in the value of the world's industrial production decreases as a result of

lower growth rate of industrial production in comparison to the emerging industrial countries.

Besides the fivefold growth of manufacturing value added in the 1970-2015 period, the developing countries increased their slowdown in comparison to the emerging industrial countries and modestly decreased their slowdown in comparison to the industrialised countries (Figure 4).

High growth of manufacturing value added led to a sustainable economic growth in many developing countries, i.e. in emerging industrial countries. Industrial production not only creates the products necessary for domestic consumption and export, but also provides new technologies for other sectors of the economy such as agriculture, transportation and services, thus instigating economic growth.

Long-term stable growth of manufacturing value added enables the emerging industrial countries to engage

Table 2: Statistical thresholds and other criteria which define each group of countries according to the level of their industrial development

Groups of countries	Statistical measure	Number of countries
1. Industrialised economies	Manufacturing value added per capita (adjusted) $\geq 2,500$ or GDP per capita (PPP) $\geq 20,000$	51
2. Emerging industrial countries	$2,500 >$ Manufacturing value added per capita (adjusted) $\geq 1,000$ or GDP per capita (PPP) $\geq 10,000$ or Share in the global manufacturing value added $\geq 0.5\%$	33
3. The least developed economies	Based on the official UN list	46
4. Other developing economies	Other (except the least developed economies)	82

Note: Calculation of thresholds is based on the data on manufacturing value added in 2005 expressed in current US dollars.

Source: Authors, according to [14, p. 8].

Table 3: Economic development and size of industrial capacity and industrial potential of the countries classified by the level of industrialisation in the 1970-2015 period*

	1970	1980	1990	2000	2010	2011	2012	2013	2014	2015
Gross Domestic Product (GDP) - at constant 2005 prices in US dollars (billions)										
<i>World</i>	15,771	22,893	31,253	41,204	53,113	54,627	55,839	57,109	58,561	60,093
Industrialised economies	13,032	18,939	26,156	33,384	39,361	40,083	40,595	41,148	41,931	42,788
EIEs	1,524	2,721	3,329	4,794	7,176	7,520	7,766	8,023	8,202	8,403
LDCs and other countries	3,423	1,234	1,768	3,026	6,576	7,023	7,478	7,939	8,428	8,902
Manufacturing value added (MVA) - at constant 2005 prices in US dollars (billions)										
<i>World</i>	2,634	3,699	4,943	6,666	8,806	9,147	9,330	9,560	9,866	10,175
Industrialised economies	2,314	3,102	4,112	5,132	5,956	6,087	6,094	6,145	6,276	6,408
EIEs	240	467	672	1,342	2,535	2,727	2,894	3,054	3,213	3,377
LDCs and other countries	80	130	159	191	314	333	343	360	377	390
Manufacturing value added per capita (MVApc) - at constant prices in US dollars										
<i>World</i>	715	833	931	1,088	1,271	1,304	1,315	1,331	1,358	1,384
Industrialised economies	2,243	2,759	3,400	4,495	4,910	4,990	4,972	4,992	5,078	5,163
EIEs	128	202	239	406	690	735	773	808	843	878
LDCs and other countries	103	130	123	114	154	160	161	166	170	172

Source: Prepared by the authors based on data of UNCTADstat [13].

* In further research, the least developed countries based on the official UN list (46) and all other developing economies (82) are observed as a single group.

more labourers in their industrial activities, to increase export of products and services and thus to increase their income. Emerging industrial countries increased their manufacturing value added 13 times (from 240 to 3.37 billion US dollars at constant 2005 prices) in the 1970-2015 period, whereby, measured by the average real annual growth rate, the manufacturing value added (6.1%) and economy as a whole were expressed through the increase in GDP (4.9%).

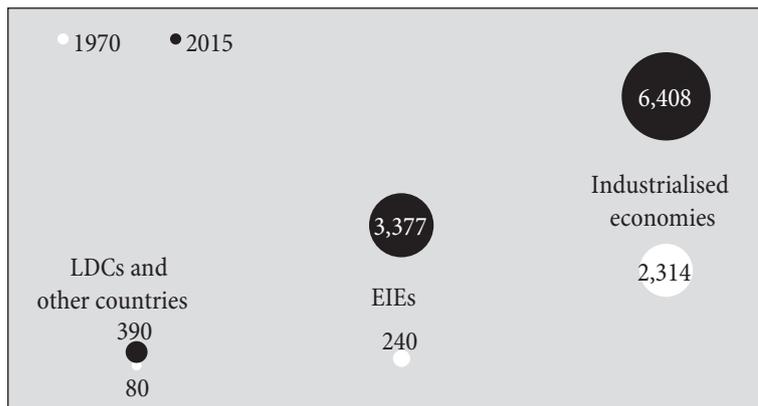
The result of a high growth rate of manufacturing value added in the emerging industrial countries is the quadruple increase of their share in generating the global manufacturing value added from 9.3% in 1970 to 33.2% in 2015, thus decreasing their slowdown in comparison to industrialised and at the same time

economically most developed and richest countries in the world.

The industrialised countries that generated 5,163 US dollars of manufacturing value added per capita (at constant 2005 prices) exhibited the greatest industrial potential in 2015. Industrial productivity of industrialised countries is nearly four times higher than the global average (1,384 US dollars per capita), nearly six times higher than in the emerging industrial countries (878 US dollars per capita), and more than 30 times higher in comparison to other developing countries and the least developed countries (172 US dollars per capita).

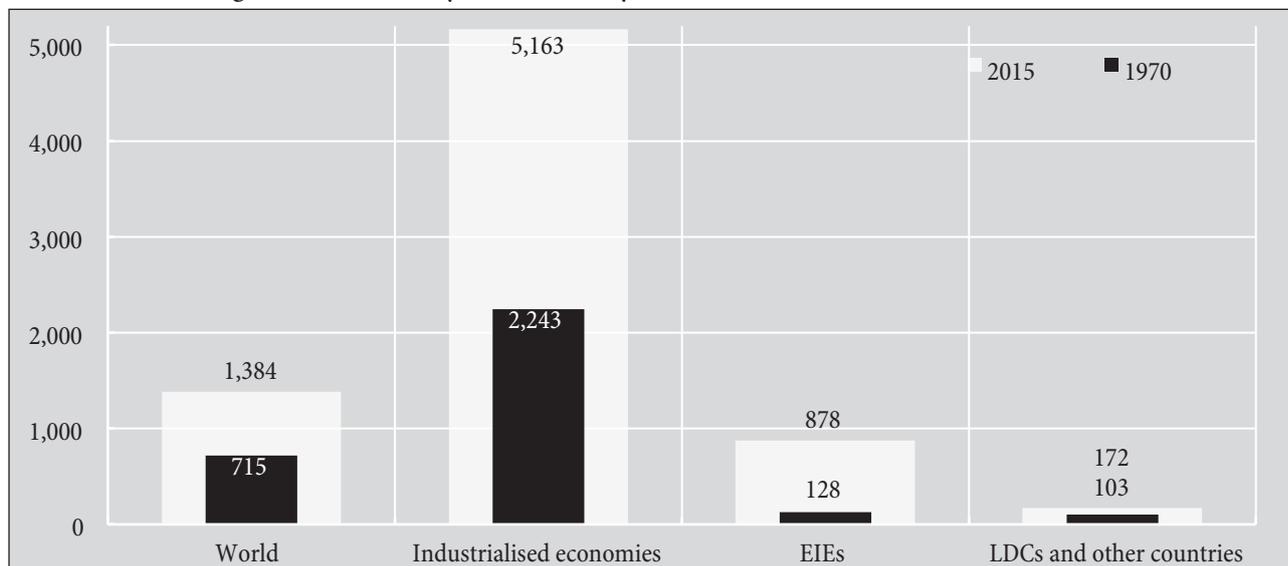
Productivity of the global industry and countries classified accordingly from 1970 to 2015 is presented in Figure 5.

Figure 4: Capacity of the industry sector in the observed countries in the 1970-2015 period



Note: The size of the circles shows gross value added at constant 2005 prices in US dollars in billions.
 Source: Prepared by the authors based on data of UNCTADstat [13].

Figure 5: Productivity of the industry sector in the countries from 1970 to 2015



Source: Prepared by the authors based on data of UNCTADstat [13].

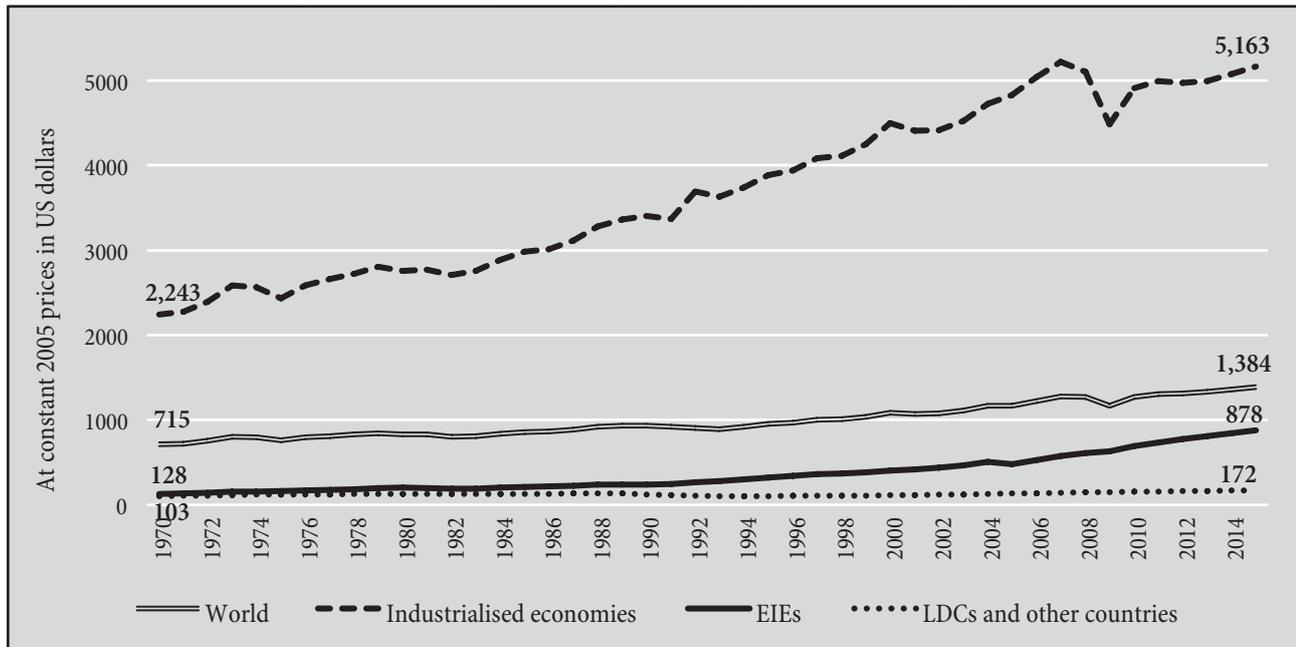
The shifts in productivity, as well as its dynamics for four groups of countries in the 1970-2015 period, are presented in Figures 6 and 7, respectively.

Based on Figure 8, it is possible to assess the differences in productivity in the industry sector of the industrialised

countries and those which are in the emerging stage of industrialisation.

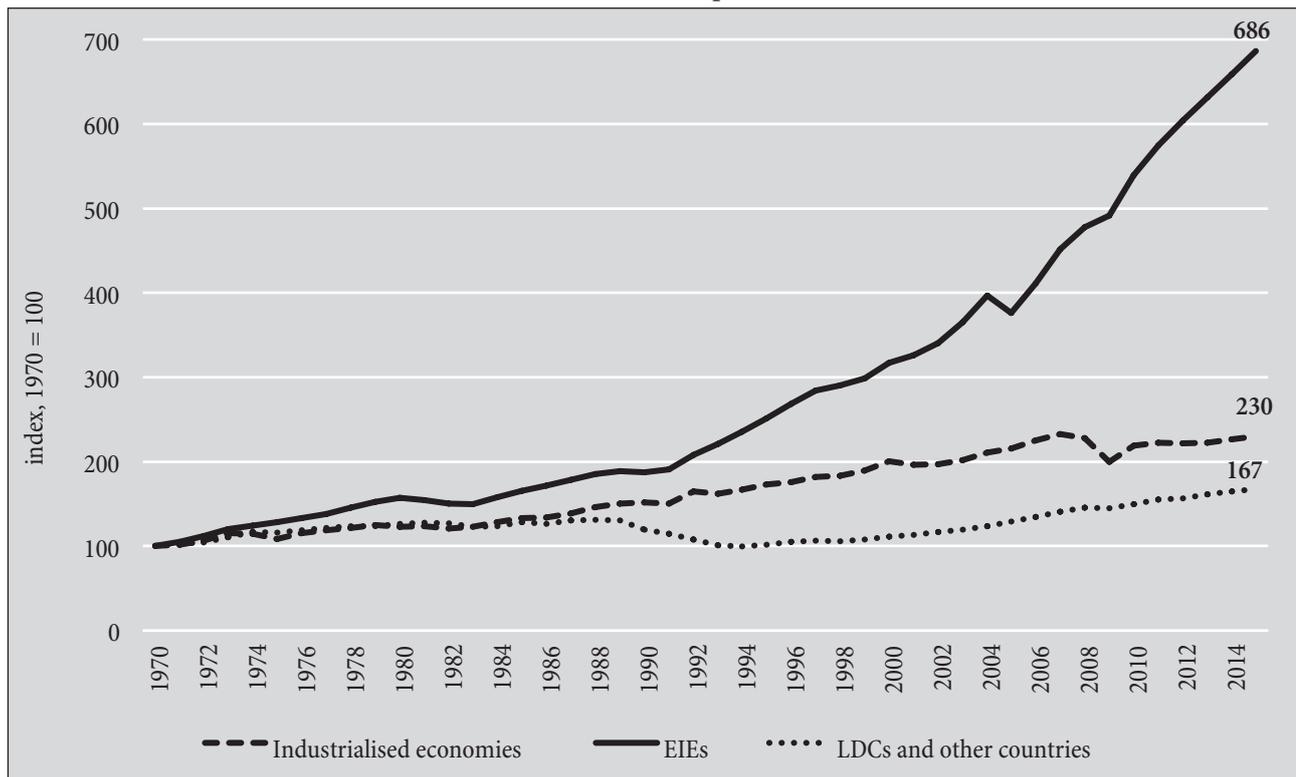
Additionally, graphic interpretation is provided for the trends of shifts in competitiveness of the world industry, especially for industries in the three groups of

Figure 6: Shifts in productivity of industry in the 1970-2015 period



Source: Prepared by the authors based on data of UNCTADstat [13].

Figure 7: Change of productivity in the industry sector in the countries according to the level of industrialisation in the 1970-2015 period



Source: Prepared by the authors based on data of UNCTADstat [13].

countries quantified by the indicator of manufacturing value added per capita in the 1970-2015 period (Figure 9).

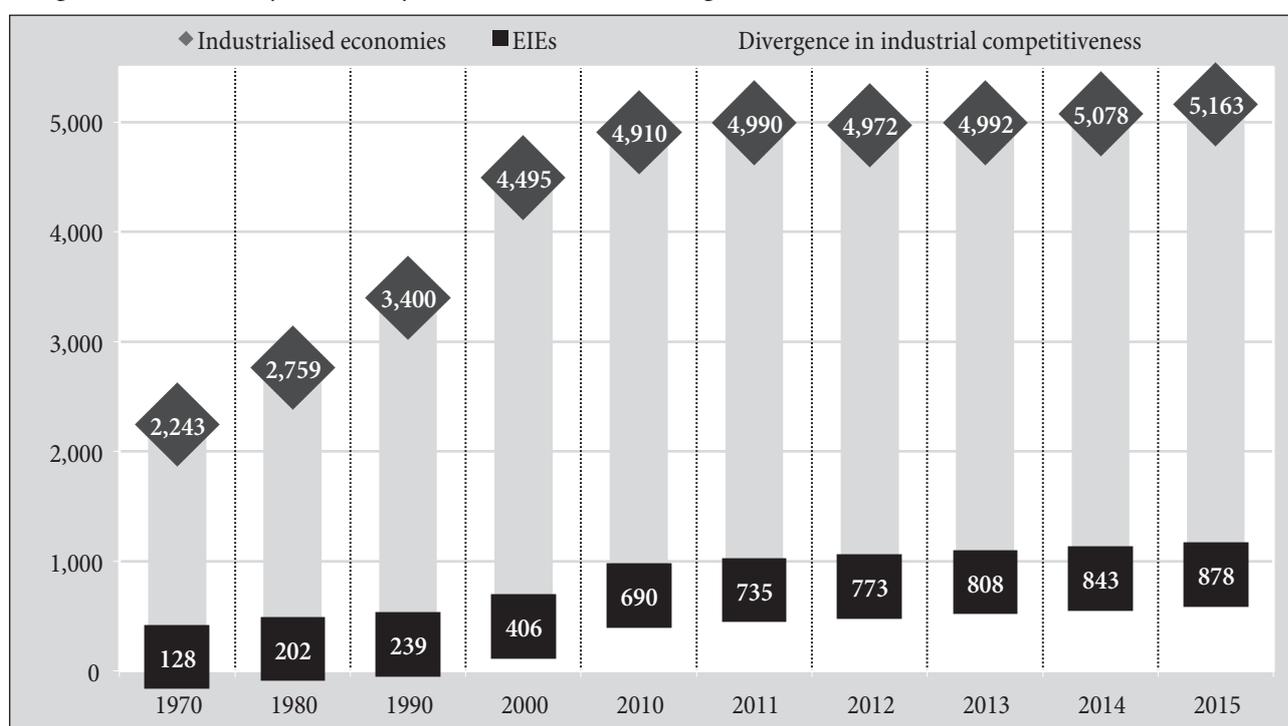
Results and discussion

In examining the results of the previously analysed research, the following statements can be made:

First, industrialised countries possess the greatest industrial capacities which are twice as large as the

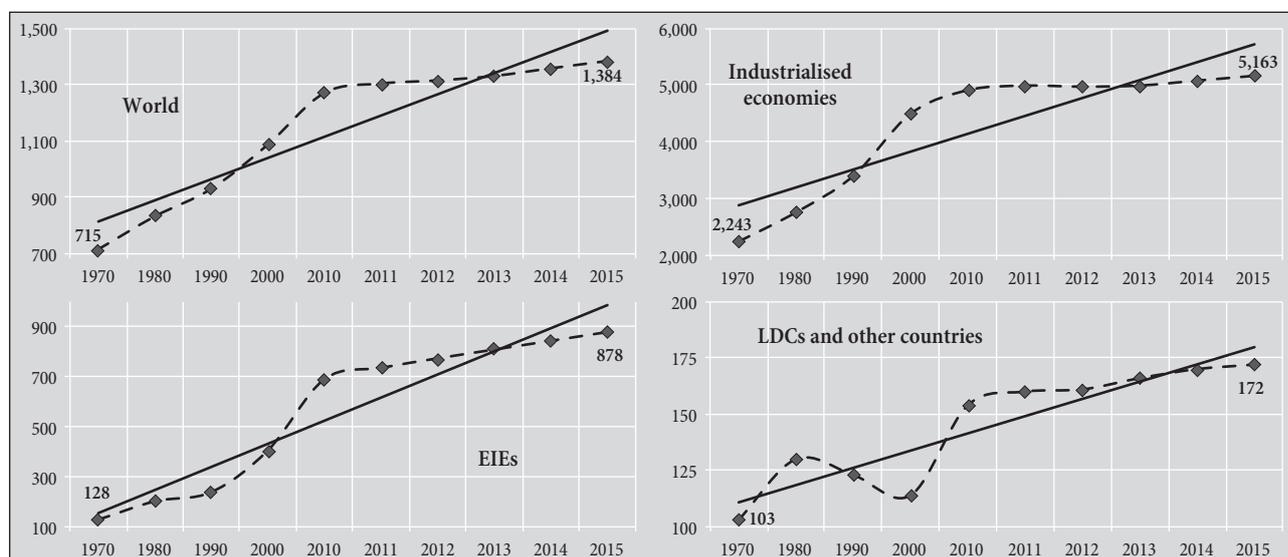
industrial capacities of the emerging industrial countries and 16 times larger than the industrial capacities of the least developed and other countries. Owing to the growth of manufacturing value added (3 times higher in comparison to that in 1970), the industrialised countries still dominate the global industrial production. However, this domination has continually been decreasing over the last four decades owing to strong industrial development of the emerging industrial countries, which increased

Figure 8: Productivity of industry in the countries according to the level of industrialisation from 1970 to 2015



Source: Prepared by the authors based on data of UNCTADstat [13].

Figure 9: Trends of competitiveness of industry from 1970 to 2015



Source: Processed by the authors based on data of UNCTADstat [13].

their industrial capacity 14 times (in 1970, the industrial capacity of industrialised countries was 10 times higher than the capacity of the emerging industrial countries, and even 29 times higher than that of the least developed and other countries).

Second, the countries that based their economic development mostly on the development of industry recorded the highest economic growth (emerging industrial countries). They increased their GDP nine times in the 1970-2015 period, unlike the industrialised countries, which recorded a threefold increase during the same time period, and the least developed and other countries which increased their GDP five times. A somewhat slower growth of industry in comparison to the growth of total economy in the industrialised countries shows that owing to the development of science, technology and high technological industry, these countries gradually managed to diversify the sources of economic growth through the development of services with high value added. The development of complex services which generate high value added enables these industrialised countries to develop faster in comparison to the growth of industrial capacities. Faster growth of services in relation to the industry leads to a decrease in the share of industry in generating gross domestic product. In the literature, this phenomenon is called (mature deindustrialisation) deindustrialisation and it is characteristic of the highly developed industrialised countries.

Third, the decrease of share of industry in the structure of GDP over the last thirty years is not characteristic of industrialised countries only. This phenomenon is present in less developed countries, as well, i.e. in countries with lower GDP per capita. In those countries, the decreased share of industry in generating GDP is called premature deindustrialisation. Unlike the mature deindustrialisation, which need not be a negative phenomenon (since it occurs in a situation when industrial capacities are developed close to technological maximum), premature deindustrialisation is harmful since it occurs when the income per capita and the level of industrialisation are too low, the benefits of the growth-enhancing effect are less expressed and low-productive informal services with small potential of growth are developed instead of highly productive industry. Due to

these factors, premature deindustrialisation poses a threat to sustainable economic development of those countries.

Fourth, although most industrialised countries are in the stage of mature deindustrialisation, the productiveness of these countries increases in comparison to the global average and the least developed and other developing countries. However, productivity of their industrial production is relatively lower in comparison to the emerging industrial countries. More specifically, in 1970, productivity in the industry sector in these countries was three times higher than the global average, 22 times higher than in the least developed and other developing countries, and 18 times higher than industrial productivity in the emerging industrial countries.

Fifth, growth of industrial competitiveness of industrialised countries is a result of faster productivity growth in this sector (2.3 times in the 1970-2015 period) in relation to the global average (1.9 times) and the least developed and other countries in the region (1.7 times). However, the emerging industrial countries increased the productivity of industry 6.9 times in the observed period, thus succeeding in increasing their industrial competitiveness and decreasing relative slowdown in comparison to the industrialised countries (from 18 times in 1970 to six times in 2015).

Sixth, in 1970, industrial competitiveness of industrialised countries was by 2,115 USD higher than the competitiveness of the emerging industrial countries. In addition, although industrial productivity in the emerging industrial countries increased relatively faster in comparison to the industrialised countries, the absolute difference in the level of industrial competitiveness increased with time in favour of the industrialised countries (due to high starting point), and in 2015 it amounted to 4,285 USD. However, since the emerging industrial countries considerably strengthened their industrial competitiveness, the changes in absolute differences of industrial productiveness between industrialised and emerging industrial countries are significantly slower. If the current long-term trends continue, it can be assumed that the absolute difference in the amount of generated value added per capita will decrease in favour of the emerging industrial countries in the near future.

Seventh, a significant slowdown which is still present in the least developed countries and other countries, as well as in the emerging industrial countries (although these countries achieved strong growth of industrial productivity in the previous decades), in terms of industrial competitiveness in relation to the industrialised countries, points that the convergence in industrial development is a difficult, complex, slow and uncertain process.

Eighth, industrialised countries record the greatest competitiveness of the industry sector expressed by the indicator of productivity (5,163 USD per capita in 2015). It is four times higher than the global average (1,384 USD per capita), six times higher than in the emerging industrial countries (878 USD per capita) and 30 times higher in relation to the least developed and other developing countries (172 USD per capita).

Ninth, the trend of shifts in competitiveness of the world industry was changeable in the period from 1970 to 2015. The trend of growth of competitiveness was obvious in the period from 2000 to 2012. It was followed by a decrease in competitiveness of the world industry as a result of pronounced decrease of competitiveness in economically developed countries, and a somewhat lower decrease of competitiveness in the emerging industrial countries. Deviations of real competitiveness from the observed trend line of the global industrial economy were especially pronounced in 2015, with a tendency to be even more pronounced in the upcoming period. Thereby, deviations of real competitiveness from the trend line are the highest in the group of economically most developed countries, which specifically speaks of a decrease in their leading positions in relation to competitiveness of the industrial sector of the developing countries.

Conclusion

Leading economies of the world, i.e. countries with high levels of GDP per capita are still more competitive in the domain of industry in comparison to the emerging industrial countries. However, over the last forty-five years, owing to the continuous increase in their share in industrial value added, the emerging industrial countries improved their relative position in generating total value

added in the industrial sector in comparison to the industrialised countries.

Although in terms of their competitiveness of industry they still lag significantly behind the economically most developed countries, the emerging industrial countries are notably ahead of other developing countries and are gradually catching up with the most developed countries in terms of the level of industrial competitiveness.

Starting from the role and significance of industry for economic development, employment, new employment, creation of value added, improvements in standard of living and strengthening competitiveness, it is necessary to point to the need for improvement of its competitiveness. Improvement of industrial competitiveness through a transformation of industrial structure is possible only by a significant growth of business and investment activities of enterprises which base their business on high technologies, knowledge and innovations, i.e. amount and quality of investment in fast-rising, innovative, export-oriented and technologically intensive enterprises.

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