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INDUSTRIAL POLICY AS A STRATEGY OF ECONOMIC DEVELOPMENT OF SERBIA

This paper looks into some of the key features of the industry in terms of its role as an important determinant of the level of economic dynamics, as well as the need for designing and implementing an appropriate industrial policy as a condition for the reindustrialization of Serbia. The need to define and implement an active, flexible and sophisticated industrial policy as a means to overcome the structural disproportions is suggested. Successful realization of the industrial policy concept implies active participation of all relevant factors of society – ministries, employers, trade unions, scientific and research organizations.

Keywords: industry, industrial policy, strengthening the competitiveness of the industry, structural changes, institutional infrastructure.

JEL Classification: L60, L50, F40, L16, H54.

Властимір Лекович, Володимир Мічич ПРОМИСЛОВА ПОЛІТИКА ЯК СТРАТЕГІЯ ЕКОНОМІЧНОГО РОЗВИТКУ СЕРБІЇ

У статті розглянуто ключові особливості промисловості з точки зору її ролі в економічній динаміці, а також необхідність розробки і реалізації відповідної промислової політики для реіндустріалізації Сербії. Продемонстровано необхідність визначення і реалізації активної, гнучкої і складної промислової політики як засобу подолання структурних диспропорцій. Успішна реалізація концепції промислової політики передбачає активну участь міністерств, роботодавців, профспілок, наукових і науково-дослідних організацій.

Ключові слова: промисловість, промислова політика, підвищення конкурентоспроможності промисловості, структурні зміни, інституційна інфраструктура.

Табл. 5. Рис. 1. Літ. 16.

Властимир Лекович, Владимир Мичич ПРОМЫШЛЕННАЯ ПОЛИТИКА КАК СТРАТЕГИЯ ЭКОНОМИЧЕСКОГО РАЗВИТИЯ СЕРБИИ

В статье рассмотрены ключевые особенности промышленности с точки зрения ее роли в экономической динамике, а также необходимость разработки и реализации соответствующей промышленной политики для реиндустриализации Сербии. Продемонстрирована необходимость определения и реализации активной, гибкой и сложной промышленной политики как средства преодоления структурных диспропорций. Успешная реализация концепции промышленной политики предполагает активное участие министерств, работодателей, профсоюзов, научных и научно-исследовательских организаций.

Ключевые слова: промышленность, промышленная политика, повышение конкурентоспособности промышленности, структурные изменения, институциональная инфраструктура.

INTRODUCTION. Our goal is the analysis of basic indicators of the status of Serbian industry and de-industrialization as its dominant feature. In order to address

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this issue, it is necessary to redefine the roles of both industry and industrial policy as the factors of economic development, since economic reality in Serbia shows that a consistent and sustainable industrial policy concept and the direct involvement of the state as its carrier are necessary to hasten economic growth and development of Serbia. Furthermore, the experiences of many countries, both developed and developing ones, show that, due to the implementation of industrial policy and the appropriate coordination of the activities of economic actors carried out by the state a positive effect on the economic dynamics is achieved.

The aim of the research is to suggest that deindustrialization of the country cannot be successfully overcome without the active support provided by the state based on the modern concepts of industrial policy. The initial hypothesis is that, since industrial production plays a key role in the dynamics of economic activities, GDP growth, job creation, improvement in the standards of living and the modernization of the economy and the society, it is necessary for the state to define a consistent and sustainable industrial policy so that the aforementioned goals could be achieved. The role of industrial policy is to initiate a new development paradigm, based on the research and development (R&D), new technologies, education, effective investments and integrative networking of all key partners in all phases of reproduction. The condition is that the state defines its priorities, primarily with regard to the support to innovative activities and fostering of the technological knowledge development as key factors of productivity, which represents a basic indicator of efficiency and competitiveness of an economy.

1. CONCEPTS OF INDUSTRIAL POLICY. Most scholars, as well as policy makers, agree that there is no pro et contra dilemma concerning industrial policy. However, the key issue is what type of industrial policy should be designed and implemented. In this regard, it is necessary to create and implement a modern concept of industrial policy in Serbia, due to the need for reindustrialization of its economy, as well as putting an end to economic decline, initiating economic growth and development and modernization of the economy and society.

In addition to fostering economic growth, industrial policy supports both new and existing industries. Cimoli, Dosi and Stiglitz (2009) suggested that providing support to emerging industries, development of science and technology and protection of intellectual property rights are of particular importance. According to Altenburg (2011), Krugman and Obstfeld defined industrial policy as an attempt by the state to encourage resources to move into particular sectors that the state views as important for future economic growth. They point to the existence of the modern and post-modern industrial policies where the former focuses on improving the competitive performance, while the latter emphasizes the promotion of social welfare, i.e. increase in the economy's resource efficiency through making more comprehensive economic decisions. In transition economies, industrial policy is focused not only on the transformation of the system, but also on the restructuring which represents the second phase of the transition process. The goal and the key element of industrial policy in these countries is the implementation of structural changes and the establishment of a modern, high-tech, competitive industry. Also, the experiences of developed economies show that a higher level of economic competitiveness cannot be achieved without the appropriate industrial policy.

According to Porter (1990), competitive advantage is achieved by raising the quality of production factors and their productivity in accordance with the new business environment in which companies operate. This requires setting up a favorable environment that would enable companies to achieve synergy in terms of business results, which, again, implies the implementation of changes at the institutional, organizational and development levels. At the same time, Rodrik (2004) emphasizes that as far as developing countries are concerned, the implementation of the industrial policy is vital for the prosperity of the economy, since this policy is the main instrument of changes which shapes the national industry and solves its structural problems. The principle position that it is the state who should attempt to foster economic growth and development is present in all the aforementioned concepts.

There are numerous examples of the countries where government had an active and very positive role in promoting economic development thanks to the implementation of the industrial policy. Cimoli, Dosi and Stiglitz (2009) suggested that countries such as Germany, Japan and the so-called "Asian Tigers", succeeded in achieving the rebirth of their economic development due to strategic steering of the economy, in which the active industrial policy had a key role. The European Union, with a long tradition regarding the design and implementation of industrial policies, puts emphasis on promoting structural changes, existence of favorable institutional environment for the development of companies and creating a favorable environment for entrepreneurial collaboration and better use of innovation, research and technological development. It is important to mention the experience of China, where government incentives have improved exports, as well as competitiveness at the global market. Furthermore, the USA implemented the industrial policy when there was an economic interest to do so; however they use elaborate semantic maneuvering in order to avoid using the term "industrial policy".

The outcomes of industrial policy largely depend on the model of economic policy chosen by policymakers. The liberal model gives emphasis to free operation of market, with minimal interference from state, whilst the dirigistes allow active participation of state in the economy. In line with the mentioned models, the hard or vertical, i.e., soft or horizontal industrial policy is designed, where the former focuses on supporting the actual production, whereas the latter aims to create general conditions for all industrial branches. Neoliberal policies, which were implemented in accordance with the recommendations of the Washington Consensus proved unreliable. Rodrik (2004) pointed to the experience of Latin American countries which implemented the policies set by Washington Consensus. In these countries the rates of economic growth during the 1990s when the policies based on the Washington Consensus were applied were much lower than in the 1980's (prior to the implementation of these policies).

According to the institutional approach, industrial policy is seen as the completeness of the system in general, including the indirect intervention of state. The emphasis is on the ability of organizations and country to adapt to constant changes in technology and environment. May (2004) argued that industrial policy in the traditional sense should be abandoned. Therefore, sectoral priorities should also be abandoned since in the environment marked by growing uncertainties they are impossible to predict and determine. The state should establish an institutional infra-

structure which will enable the implementation of technological and sectoral restructuring. Rodrik (2010) pointed out that the state should create an institutional environment, favorable for generating continuous innovation and advanced technologies and facilitate their diffusion in various spheres of life, which would result in development of new industries thanks to the strong, sophisticated and direct support from state.

In order to get a more objective and comprehensive understanding of industrial policy, due to its complexity and ambiguity, it is necessary to apply the approach based on the analysis of a system. Kornai (2002) indicated that changes which can either be initiated and carried out with the help of the state or evolutionary realized are identified based on the system paradigm. In this respect, the economy is seen as a comprehensive system where the mutual interaction of relevant socioeconomic subsystems is accomplished.

In order for the industrial policy to be successful, its goals must be compatible with other economic goals of the society. Thus, due to industrial growth and improved economic performance, economic growth, full employment, macroeconomic stability, favorable balance of payments and overall growth of social and personal well-being is achieved. Atkinson, Baker and Milward (1996) suggested that economic policy at the same time represents industrial policy, given that the measures government takes in line with economic policy affect the level of investment, innovation and application of new technologies, which is directly reflected on the state of an industry. For the success of industrial policy, aimed at forming a structurally balanced, competitive industry, it is necessary to establish close interrelatedness between state and local authorities, business entities, scientific and social organizations.

2. RESEARCH METHODOLOGY AND DATA COLLECTION. For the purpose of analyzing the industrial development indicators referring to Serbia, Slovenia, Hungary, Romania, Bulgaria, Croatia and the EU-27 average, the comparative research method was applied. By determining the degree of correlation between the GDP growth and the contribution of agriculture, industry and services, depending on their growth and relative share in GDP, as well as the inverse correlation of the share of industry and services in the generation of GVA (gross value added), GDP and the employment, respectively, this research points to the process of the deindustrialization of Serbian economy.

The research and analysis were carried out based on the relevant sources of data provided by the Statistical Office of the Republic of Serbia, Eurostat and the World Economic Forum. This research classifies industry sectors in line with the NACE Rev. 2 industrial activity classification, which is identical to ISIC Rev. 4 and integrated with SITC Rev. 4.

3. INDICATORS OF THE STATE OF SERBIAN INDUSTRY. Regarding the intensification of the transition process which had been underway since 2001, Serbia failed to design industrial policy as the basis for the industry development strategy. Thus, the service sector was given a dominant role, which directly led to deindustrialization of the economy, while the industry (especially the manufacturing one) was devastated. The global economic crisis together with the deterioration of Serbian industry only further confirmed actual problems.

(1) Comparative analysis of the indicators referring to the level of industrial development of Serbia and the neighboring countries points to the state and role of industry in economic development. The average rates of industrial growth achieved in the last decade, as well as the average share of industry in GDP and total employment indicate an unsatisfactory state of Serbian industry (Table 1). Relatively modest average growth rates of 0.6% in the period of 2001–2010, resulted in the situation where industrial production of Serbia in 2010 totaled only 45% of the industrial production in 1990.

Table 1. Industrial production growth rate, the share of industry in GDP and the total employment, 2001–2010 (in %)

	Real industrial production growth rate					GVA	Employment
	2007	2008	2009	2010	2001/10	2001/10	2001/10
EU-27	3.6	-1.8	-13.5	6.8	0.3	/	17.7
Slovenia	4.7	1.6	-17.6	6.0	1.9	25.2	26.2
Hungary	8.0	-1.0	-17.4	10.3	3.9	25.8	22.2
Romania	10.1	2.6	-6.4	5.5	2.4	25.4	20.2
Bulgaria	9.5	0.4	-18.2	2.2	4.0	24.1	22.7
Croatia	5.0	0.7	-8.9	-1.5	2.2	18.3	19.2
Serbia	4.1	1.4	-12.6	2.5	0.6	21.7	25.5

Source: Eurostat, Statistics database, and Statistical Office of the RS, Statistical database, (2012).

The contribution of industry to the economic growth is illustrated by the indicators of its share in GDP in the period of 2001–2010. The trends in the industry, agriculture and services and their relative share in GDP during this period (Table 2) show that the effect of industrial production on the GDP growth is smaller than the effect of service sector. Starting from the relation of the average growth rates and the contributions of the mentioned sectors, the following statistical hypotheses were formulated:

H1: Agriculture has a very small contribution to the GDP growth rate,

H2: Industry has a smaller contribution to the GDP growth than the service sector,

H3: Growth rate and relative share of the service sector in GDP show that its contribution to the growth rate of GDP is the greatest.

Table 2. Correlation between the GDP growth rate of agriculture, industry and services in relation to their growth rates and their share in GDP of Serbia, 2001–2010

Hypothesis:	Pearson's correlation coefficient R		Spearman's rank correlation coefficient R _s	
	R	p-value	R _s	p-value
H1:	0.3462*	0.3272	-0.0242*	0.91119
H2:	0.8758**	0.0008	0.7727*	0.01139
H3:	0.7908**	0.0069	0.7121*	0.02363

Note: * 0.05 level of significance; ** 0.01 level of significance.

Pearson's correlation coefficient R indicates there is no significant effect of the growth rate of agriculture and its relative share on the GDP growth (0.05 level of significance) which confirms the hypothesis H1. As far as the industry and services are concerned, there is a linear relationship at the significance level of 0.01, however it is lower in the industrial sector, which confirms H2. Since p-value is higher for the serv-

ices, their share in GDP, as well as the effect on the GDP growth rate is higher than the effect of the industry (H3 is confirmed). Spearman's rank correlation coefficient RS confirms all 3 hypotheses. The significance level of 0.05 confirms there is no monotonic relationship between the percentage changes and the relative share of agriculture in the GDP growth. In terms of industry and service sector, there is a strong direct monotonous correlation, which is higher for the service sector.

Such trends in the growth rates of Serbian economic sector are the result of deindustrialization of the country's economy. Achieved industrial production growth rates are lower compared to the overall production, with the relative decrease of the industry's share in GDP (GVA) and the number of the employed. Deindustrialization in developed countries does not imply an absolute reduction in the volume of industrial production, rather this phenomenon is, for the most part, a product of scientific and technical progress made in industry, i.e., it is mostly the result of the interaction of 3 factors: productivity growth in manufacturing which is more rapid than the one in the services; the growth of GDP per capita and the standard of living; and economic globalization. The abovementioned factors are not characteristic of Serbian economy, since this economy is especially characterized by the absolute decline in industrial production. Correlation matrix (Table 3) confirms the position that the process of deindustrialization occurred. Pearson's correlation coefficient R shows high inverse linear correlation between the movements in GVA, GDP and employment at the 0.01 level of significance. Spearman's rank correlation coefficient RS indicates a strong inverse monotonous correlation in terms of GVA and GDP, which is especially pronounced in employment trends by sector.

Table 3. Correlation matrix for variables of the share of industry and services in the creation of GVA, GDP and employment of Serbia, 2001–2010

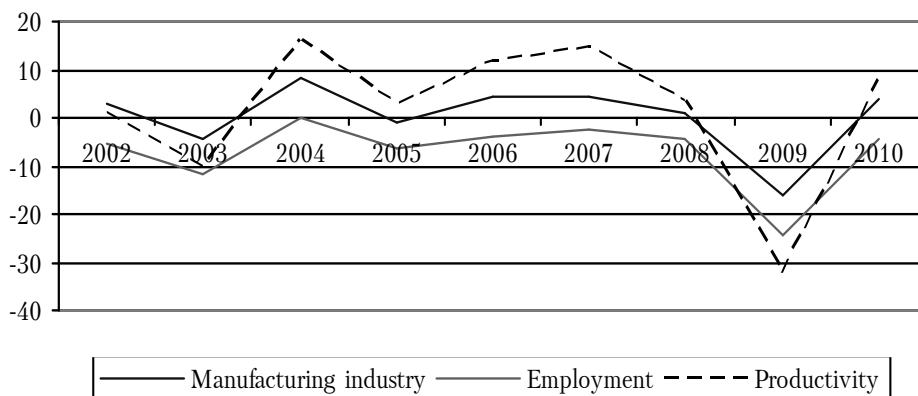
	Pearson's correlation coefficient R		Spearman's rank correlation coefficient R _s	
	R	p-value	R _s	p-value
GVA	-0.8788**	0.0008	-0.8303**	0.00446
GDP	-0.8619**	0.0013	-0.7091*	0.02419
Employment	-0.991**	0.0000	-0.9909**	0.0000

Note: * 0.05 level of significance; ** 0.01 level of significance.

(2) Productivity in the manufacturing sector of the industry (the sector which produces most of tradable goods) is one of the basic indicators of competitiveness and efficiency. Although there was no significant technological modernization of industrial enterprises, the increase in productivity was recorded in this sector. However, productivity growth is primarily the result of constant and numerous job cuts, rather than a result of technological modernization and the increase in production factors utilization efficiency, i.e. the investment in innovation, technology and expertise of employees. In addition, productivity growth rates are higher than the growth rates in manufacturing (Figure 1).

(3) The OECD Report (2005) shows that, according to technological intensity and its effect on productivity growth and the share in the generation of GVA, technological structure of Serbian industry is unfavorable. The trend of changes in the structure of technological intensity is unsatisfactory. This confirms the thesis that lag-

ging of Serbian industry behind the industrialized EU countries in terms of technology, which in 2001 amounted to about 5–6 generations of technology, has not been significantly reduced. Table 4 shows that the products of low and medium-low technology intensity have the largest share in production (and exports), while the products of medium-high and high technology failed to increase their share in production and export structures.



Source: Statistical Office of the RS and authors' calculations.

Figure 1. Manufacturing sector of the industry – production, employment and productivity growth rates (in %)

Table 4. Technological structure of Serbian industry, 2001–2010

	SII		Lisbon index and subindices					
	2007	2011	2008			2010		
			Lisbon index	Information society	Innovation and R&D	Lisbon index	Information society	Innovation and R&D
EU-27	0.517	0.539	4.73	4.53	4.18	4.81	4.73	4.23
Bulgaria	0.173	0.239	3.68	3.57	3.04	3.77	3.63	3.12
Hungary	0.314	0.352	4.18	3.86	3.76	4.28	4.12	3.79
Romania	0.226	0.263	3.84	3.70	3.30	3.96	3.48	3.37
Slovenia	0.431	0.521	4.58	4.71	4.12	4.79	4.84	4.28
Croatia	0.260	0.310	4.10	3.69	3.41	4.18	4.04	3.36
Serbia	0.252	0.282	3.44	3.20	3.00	3.51	3.29	2.95

Source: European Innovation Scoreboard 2011 - Enterprise and Industry. (2012). European Commission, Belgium, p. 70. and *European Innovation Scoreboard 2011 and The Lisbon Review 2010*. (2010). World Economic Forum, Geneva, Switzerland, pp. 9-13.

(4) The fact that Serbian industry is at the bottom of the list of the countries which strive to improve competitiveness through growth of innovation and business sophistication is of particular concern. According to the composite innovation index, Serbia is the 29th out of 34 European countries, and is among the countries characterized as moderate innovators with the below average performance. According to the Lisbon index, i.e. the catching up with the innovation and knowledge-based economies, Serbia has slightly improved the overall competitiveness performance (Table 5).

Table 5. Summary Innovation Index (SII) and the Lisbon index and subindices

	SII		Lisbon index and subindices					
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The value of the subindex “Information society” shows to what extent is the ICT industry in Serbia used for sharing knowledge and improving productivity. Innovation in products and processes is unsatisfactory, especially for a country that is lagging behind in terms of technology. According to the subindex “Innovation and R&D”, which is an indicator of the quality of scientific research institutions and the extent of their cooperation with the industry, Serbia is also among the countries with the poorest results.

4. NEW INDUSTRIAL POLICY. It goes without saying that the industry represents a driver and a key factor of sustainable economic development in developing countries, emerging economies and countries in transition. Serbian industry is expected to be an engine, as well as the carrier of the country's economic development. Thus, it is necessary to give industrial policy the same importance it has in developed industrial countries. It is also important to take into account current concepts and experiences of other countries when designing industrial policy. However, it should be kept in mind that its implementation will be carried out in conditions of internal and external constraints caused both by the global factors and internal weaknesses, which reduces the success of the new industrial policy implementation.

The need to intensify industrial and economic development of the country requires clearly defined priorities and specialization of industrial production and exports. It is necessary to create a group of products that would be leading export products, as well as to increase the share of products that are more sophisticated and innovative, of better quality and improved technology intensity, which would allow for an increase in industry's GVA.

Such strategic approach, necessary from the position of sustainable growth and development, requires great investments that especially include domestic resources. However, the growth of domestic investments (over 25% of GDP) requires greater domestic savings, increase in the efficiency of public sector investments, changes in the structure and lowering of irrational public spending in order to achieve developed economy status. In this way, state funding would have a greater relative and absolute share in GDP. Foreign investments make one of the pillars of the industrial policy implementation. In order to achieve higher absolute inflow of foreign investments compared to the current situation (5 bln. USD), and reach the level of the Central and Eastern European countries (45% of total FDI inflow), it is necessary to significantly improve the status and the state of industry.

The growth of industrial production (to or above the level of GDP growth) and the increase in exports require such industrial policy that would target selected industrial sectors, which would in turn create surplus goods for the domestic market, as well as exports. However, it is necessary to increase efficiency, productivity and competitiveness of the industry. Therefore it is imperative to turn to the concept of competitive advantages based on scientific knowledge, technological development and innovation as the key factors of productivity. Competitive advantage should be also created by strengthening other economic and social factors and determinants, as well.

Successful reindustrialization of the economy implies that industrial policy should be focused on restructuring, innovations, use of new technologies and building of the knowledge-based economy, improvement of business environment – especially concerning small and medium-sized enterprises, higher employment rates and flexible labor market. At the same time, industrial policy should also target the creation of large companies, which are the carriers and leaders of production, exports, employment and technological development. In this way, SMEs as the providers of outsourcing activities to large companies would operate more efficiently. Industrial policy should encourage the formation of industrial clusters, which, according to M. Porter (1990), are the driving force of the economy's competitiveness.

In order to overcome neglectedness, devastation, permanent and profound crisis in Serbian industry, a combined approach is required which includes various types of industrial and other related policies. After all, the global economic crisis shows that position on credibility, validity and dominance of a single model of industrial policy is unjustifiable, no matter whether such policy is based on state interventionism, or on the liberal concept. In the case of Serbia, moderate pro-active role of the state can give results only when the market starts to function properly and when the rules of competition are established. The state is expected to support the creation of the industrial structure that will enable an increase in production, exports and employment. State intervention measures should be of limited duration, i.e., their limiting of the effects of market mechanism should be as little as possible. Therefore, industrial policy, in addition to the dominant horizontal, should also include selective and structural elements, which are contained in the WTO principles, as well as the laws on the protection of intellectual property rights.

It is upon Serbia to build its own model of active and sophisticated industrial policy which would be a driver of the country's reindustrialization. However, in doing so, the experiences of other countries must be taken into account, since these can serve as a valuable input for the formulation of the key aspects and different manners of industrial policy implementation and successful establishment of necessary institutions. Design and implementation of an appropriate industrial policy requires commitment and cooperation of all relevant institutions and stakeholders (government, employers, entrepreneurs, trade unions, research institutions). The cooperation and joint efforts of entrepreneurs and the state are of particular importance, i.e. those actors who know how to best accomplish the set objectives, and those who have adequate mechanisms, measures and means at their disposal. In the implementation of the industrial policy, the economy cannot be passive and expect that only the state should assume responsibility for structural change, improved competitiveness and increase in exports.

5. CONCLUSION. The concepts related to reforming Serbian industry, which usually came down to institutional reforms aimed at downsizing of natural monopolies, market liberalization and privatization and commercialization of the existing industrial enterprises, did not give satisfactory results. On the contrary, the reform process resulted in the devastation of the industry, which limited its contribution both to GDP and employment generation. Furthermore, unsatisfactory technical and technological structure is not able to provide a higher level of competitiveness, which according to the Global Competitiveness Index, puts Serbia nearly at the bottom of the list of the countries in the region. Therefore, this paper points to the importance of creating and implementing industrial policy as a means of starting a new cycle that would result in dynamic growth, development and modernization of the economy and society.

A mechanism necessary for the successful implementation of industrial policy is a set of legal, economic, financial, organizational and other measures used to support the building of a competitive industry and ensuring its effective functioning. Activities related to implementation of industrial policy, aimed at forming competitive, high performance industries, must result in more efficient production, as well as better quality of life. This issue of industrial policy will certainly be the subject of future studies due to its importance and contemporaneity, as well as a means of examining key issues related to industry as a significant sector of the economy in a scientific and methodological manner.

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