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INNOVATION AND CREATIVE INDUSTRIES AS A BASIS FOR SERBIAN REINDUSTRIALISATION*

Inovativnost i kreativne industrije kao osnov
reindustrijalizacije u Srbiji

Abstract

A deep economic crisis affecting all the economies of South-Eastern Europe (SEE), including Serbia, has reignited the debate concerning the need for a new type of industrialization. While many other authors call for strong state intervention in select economic sectors, we strongly maintain that the best way to avoid the middle-income trap is to support the development of clusters and creative industries, buttressing innovation processes and the overall competitiveness of the economy. In this article, building upon the ongoing research on the importance of innovation and creative industries as key forces in the process of economic development, we analyse and shape policy recommendations, aiming to restore the growth of GDP_{pc} and gradually reduce the development gap in SEE region relative to developed countries. Serbia, specifically, needs to shift from the investment-driven stage of competitiveness to innovation-driven stage, by completing outstanding tasks from the factor-driven stage, especially relating to institutions and infrastructure development, and by focusing on innovation infrastructure. A favourable circumstance for Serbia and the SEE lies in their success in improving Global Innovation Rankings during the crisis; nonetheless, analyzed global reports also show weaknesses that need to be managed. In addition to supporting innovation policy and clusters, more comprehensive measures should be undertaken in improving the business-enabling environment, education (especially multidisciplinary approach) and access to finance.

Key words: *innovations, competitiveness, creative industries, reindustrialisation*

Sažetak

Duboka ekonomska kriza, koja je zahvatila privrede jugoistočne Evrope (JIE), uključujući Srbiju, ponovo je otvorila raspravu o potrebi za nekom novom vrstom industrijalizacije. Dok mnogi drugi autori pozivaju na državnu intervenciju u izabranim privrednim granama, mi se zalažemo za snažnu podršku razvoju klastera i kreativnih industrija, inovacionih procesa i sveukupne konkurentnosti zemlje, kao najbolji način da se izbegne zamka srednjeg nivoa razvoja. U ovom članku, nadovezujući se na aktuelna naučna istraživanja o značaju inovacija i kreativnih industrija kao motora ekonomskog razvoja, proučavamo i predlažemo mere javnih politika sa ciljem obnove rasta BDP_{pc} i postepenog smanjenja jaza razvoja u region JIE u odnosu na razvijene zemlje. Neophodno je da Srbija, koja se ovde posebno sagledava, dovrši nezavršene reforme iz stadijuma konkurentnosti vođene činiocima proizvodnje, pogotovo kada se radi o institucijama i logističkoj infrastrukturi, a da istovremeno ojača inovacionu infrastrukturu kako bi prešla u stadijum konkurentnosti vođene inovacijama. Povoljna okolnost za Srbiju i JIE leži u poboljšanju ranga mereno Indeksom globalnih inovacija tokom krize, mada analizirani svetski izveštaji iz ove oblasti takođe ukazuju na slabosti koje treba prevazići. Pored podrške politika inovacija i klastera, sveobuhvatnije mere je potrebno sprovesti kako bi se unapredilo poslovno okruženje, obrazovni sistem (posebno višedisciplinarni pristup), kao i pristup finansiranju.

Ključne reči: *inovacije, konkurentnost, kreativne industrije, reindustrijalizacija*

* This article was produced as part of the research project "Advancing Serbia's Competitiveness in the Process of EU Accession", no. 47028, during the period 2011-2015, supported by the Serbian Ministry of Education, Science and Technological Development

Introduction

A deep economic crisis affecting all the economies of South-Eastern Europe (SEE), including Serbia, has reignited the debate concerning the need for a new type of industrialisation, particularly to increase manufacturing. In shaping these processes, however, there are understandable differences with regard to key elements and policies to be implemented (*see*, for example [16], [48], and [40]). While other authors call for strong state intervention in select economic sectors, we strongly maintain that the best way to avoid the middle-income trap [25] is to support the development of clusters and creative industries, buttressing innovation processes [11] and the overall competitiveness of the economy [38], [38]. In this article, building upon the ongoing research on the importance of innovation and creative industries as key forces in the process of economic development, we analyze and shape policy recommendations, aiming to restore the growth of GDPpc and gradually reduce the development gap in SEE region relative to developed countries.

Role of innovation in economic development

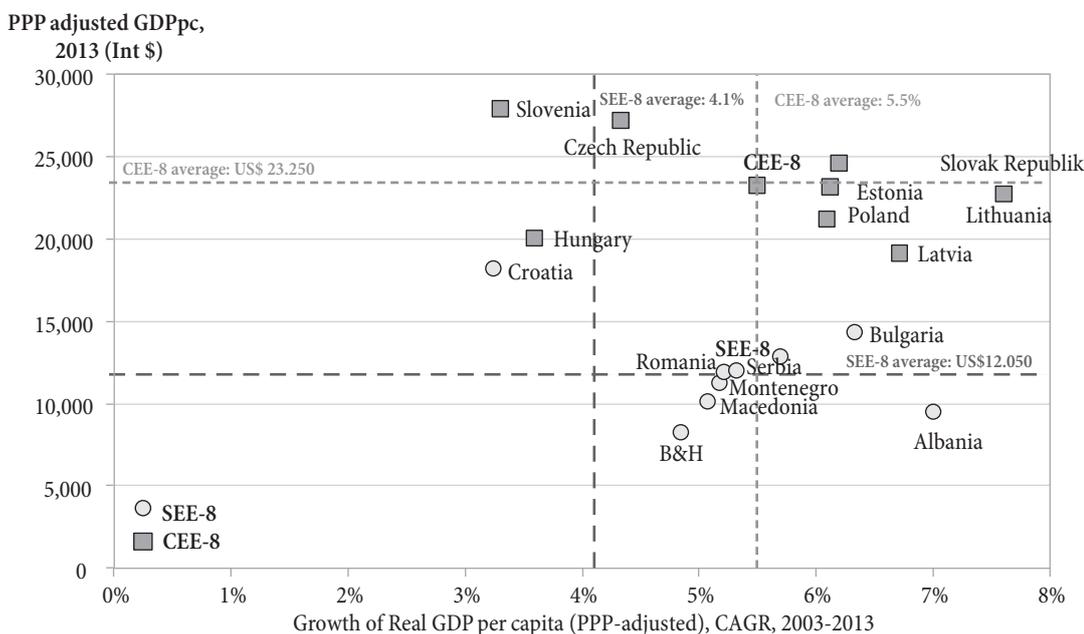
The current situation in the world economy is shown in Figure 1, illustrating the differences in character and rate

of prosperity among countries. The vertical axis shows the level of PPP adjusted to GDPpc in USD for 2013. The more developed the economy, the higher the level of prosperity. The horizontal axis shows the annual average growth rates of real GDP per capita (PPP-adjusted, CAGR) during the period 2003-2013. The greater the upward distance of the country from the origin of coordinates, the more developed the country, demonstrating higher growth rates and faster pace of development.

Figure 1 also reveals that countries with similar levels of GDPpc recorded very different growth rates during the period 2003-2013. In the case of Central European economies (CEE), they range from 3% to over 7%, while in the case of the South-Eastern European economies (SEE), they have a similar, though slightly reduced range from 3.5% to 6.5%.

Traditional economic theories fail to capture many of the underlying forces at work in today's global economy. While there is an understanding that competitiveness is the only means to achieve sustainable job growth and raise the standard of living, the real meaning of competitive advantage continues to puzzle economists. An explanation of significant differences among countries, illustrated in Figure 1, has been provided, among others, by Porter [31], by defining stages of national competitive development and identified policy imperatives. For every economy it is crucial

Figure 1: Prosperity performance



Source: Authors' recalculations based on IMF Database

to properly set the key transition points in the economic development process. Successful economic development is a process of successive upgrading. National business environment should foster increasingly sophisticated and productive ways of firm-level competition. *Porter* described this process as a sequence of stages, each with a different set of economic characteristics and challenges. Factor-driven economies are economies at lower levels of development, whose competitiveness is based on low-cost inputs (labour, natural endowments and alike). Competitive advantage in these economies is based exclusively on endowment of labour and natural resources. Investment-driven economies are economies at the medium level of development, whereby increasing productivity is a path to advance competitiveness. Dominant source of competitive advantage at investment-driven stage is efficiency in producing standard products and services. Innovation-driven economies are developed economies whose competitiveness is based on innovations, delivering products and processes with a unique value. Dominant source of competitive advantage at this stage is the ability to produce innovative products and services at global technology frontier; clusters become critical and firms compete with unique strategies. In essence, enhanced prosperity, i.e. GDPpc PPP, implies continuous improvement of competitiveness that can only be achieved by constant innovation, anticipating new dimensions of competitiveness. Therefore, it is essential to create a quality business environment that would encourage innovation, entrepreneurship and the development of small and medium-sized enterprises (SMEs).

According to *Rodrik* [35], [36], economic policies will be conditioned upon local constraints and opportunities, with each government reflecting on whether it is doing enough to support the expansion of capacity in sectors with greatest potential to absorb workers from the rest of the economy. *Vujovic* [49] shows that countries caught in the middle-income growth trap (MIGT) are unable to compete with low-income, low-wage economies in manufactured exports or with advanced economies in high-skill innovation goods. The root cause of the MIGT is failure to shift from lower middle (LMI) income to upper middle income (UMI) growth strategy. The former is designed to support supply-oriented capital accumulation and labour

relocation from agriculture to higher productivity industry, while the latter seeks to support skill (knowledge) intensive manufacturing activities (“moving up the value chain”) and business services. LMI strategies embrace diversification and simple export expansion, while UMI strategies foster specialisation and export growth based on innovations (new processes, new products, new markets) and highly educated labour force.

Porter [31] defines competitiveness based on productivity and focuses on the microeconomic foundations of competitive advantage that underpin productivity in nations, regions and clusters. *M. Delgado, C. Ketels, M. E. Porter* and *S. Stern* [10] define foundational competitiveness as the expected level of output per working-age individual that is supported by the overall quality of a country as a place to do business. Their competitive framework highlights three broad and interrelated determinants of competitiveness. Endowments, as a first determinant of competitiveness create only a foundation for prosperity, but true prosperity is created by productivity with which we use endowments. Second determinant of competitiveness, macroeconomic competitiveness consists of: (i) sound macroeconomic policy (monetary and fiscal policy) and (ii) human development and political institutions; this determinant sets only the potential for high productivity. The third determinant, microeconomic competitiveness, consists of (i) quality of the business environment (illustrated by “Porter’s diamond”), (ii) state of cluster development and (iii) sophistication of company operation and strategy, finally determine the level of productivity and sophistication of local competition. Level of productivity ultimately depends on improving the third determinant of competitiveness – microeconomic capabilities of the economy. Finally, it is not what a location competes in that determines its prosperity, but how productively it competes – how, not what.

Knowledge-based society and creative industries

Pointing to the significance of knowledge, innovations and creative industries in the contemporary economy, *Savic, Pitic* and *Trbovich* [40] discern their role in the development of the Serbian economy. They recall that

the important economic thinkers of the second half of the 20th century, specifically *Drucker* [13], [14], [15], *Bell* [5] and *Toffler* [43], [44], [45] advocated the position that the future of advanced economies would be closely related to the use of knowledge and information, maintaining that just as agrarian economies were once transformed by industrialisation, industrialised economies would be transformed by knowledge-based innovations. Successful transition into knowledge society is the utmost matter of development, which has strong economic, social and cultural dimensions [22], [1]. According to *Araya* [2], we are entering a new era in which the major raw materials are not coal and steel produced by machines, but creativity and products innovated by human imagination. Therefore, *Florida* [19] considers it crucial for society and politics to ensure the development of creative capacity, which is in essence possessed by all human beings. According to the *OECD* [28], knowledge has now become the key factor of production and growth, thus encouraging an increase in investments in high technologies, labour force education and an increase in productivity. Today, the highest share of value added in developed economies is not derived from the so-called material production, but from improvements in productivity and innovation. The *OECD* [28, p.12] has defined four types of knowledge: know-what, know-why, know-how and know-who.

In his analysis of major changes occurring in the modern world, *Florida* [19, p. 21] singles increasing human creativity as the key determinant of economic life. Creativity has become a value because the system has evolved in such a way that new technologies, new industries and new wealth are derived from it. The emergence of this creative era is based on the following three principles:

- Creativity is the essence of today's way of life and work – *Romer* [37, p. 9] says that major improvements in the standard of living, especially great competitive advantages on the market, are always derived from “*better recipes, not just more cooking*”;
- Creativity is multidimensional – it is not reduced to technological innovations or new business models; creativity is not kept in a box and taken out of it when needed; the multidimensionality of creativity permeates everything, thus reshaping the way we see

ourselves as economic and social actors, influencing our identity; and,

- Creativity is a social process (not an individualistic process), requiring appropriate organisational forms that encourage creativity; here *Florida* turns attention to the fact that life in the first half of the 20th century was characterized by the dominance of big and highly specialized bureaucratic organisations; this was also indicated by *Schumpeter* [41] when speaking about the “cold” effect of big organisations on creativity, which suffocated from great strength of capitalism and ultimately stemmed from entrepreneurs, who revolutionised the production structure.

Florida identified the new economic class – *working class* that will dominate the economic and cultural life of this century just as the working class dominated in the early 20th century and the service class over the past decades. Although the creative class is not so massive in numbers like the service class, it is an agent of growth and change in the economy and society. *Florida* [19, pp. 12-13] adds that American blue-collar and white-collar jobs have been turned collarless. Artists, musicians, scientists and other members of the creative class have traditionally determined their work hours and were dressed in relaxed and appropriate clothes while working in a stimulating environment. Collarless jobs today replace the traditional hierarchical system of control with new forms of self-management and new forms of motivation.

Florida [21] refers to the present economic era as a “Great Reset”, similar in scope and nature to the crises of the 1870s (the First Reset) and 1930s (the Second Reset), remarking that recovery will result not only in the accelerated rate of innovation and enhanced productivity, but also in the new sources of consumer demand that stem from significant shifts in lifestyles and a new geography. He argues that the current crisis is more than a financial or economic crisis and that it is an even deeper structural divide as the productive and innovative capacities of the emergent knowledge-based creative economies came smack up against the outmoded institutions, economic and social structures and geographic forms of the old industrial age. According to *Florida* [19, p. 67] the development of creative industries is conditioned by the

rise of the creative class consisting of individuals whose main economic functions are reflected in the creation of new ideas, new technologies and new creative contents. Using data from the 2006-2011 US Current Population Surveys, *Gabe, Florida* and *Mellander* [24] indicate that members of the creative class had a lower probability of being unemployed over this period than individuals in the service and working classes and that the impact of having a creative occupation became more beneficial in the two years following the recession.

Focusing on occupations provides particularly useful insights into the nature of work in times of crises. For example, people in jobs with more standardized work may be easier to replace than individuals with more advanced, less routine-oriented occupations [4]. As a result, we expect that working and service class jobs were more likely to be cut during the recession. Another explanation as to why members of the creative class might have fared better than individuals in service and working class occupations has to do with the nature of development that occurred alongside residential construction during the housing boom. In many places, housing growth during the early 2000s took place hand-in-hand with expanding retail and food-service-related employment. This pattern of development, referred to as a “great growth illusion” [21], is a false economy of sorts based on residential and commercial construction, expanding retail development and related service employment. *Gabe* and *Florida* [23] found that regions characterized by high shares of employment in retail and food service occupations, along with specialisations in construction, fared poorly during the recession. This means that, along with construction workers, individuals in retail and some service occupations – two large segments of the service class – might have been more adversely impacted by the recession than creative workers.

Potts [34] also states that creative industries are the main agent of economic modernisation. Advocating a new, evolutionary economic approach to creative industries, he makes a radical shift away from the hitherto dominant neoclassical model and offers the model of innovation dynamics and cultural co-evolution. In this model, the focus is placed on something that makes up the essence of creative industries, and he concludes that they have been

the agents of innovation processes in socio-cultural and economic systems. Therefore, the primary economic value of creative industries is not legacy or entertainment, but a deep affirmation and expansion of innovation during economic evolution. *Potts* [34, p. 152] also points to the importance of creative clusters and innovations, confirming *Porter’s* [29], [30] concept of linking agglomeration and innovation.

According to the management guru *Peter Drucker* [15], the basic economic resource in the era of knowledge-based economy is not capital, or natural resources, or labour, but education. Thus, in essence, he laid the foundation for knowledge-based economy. In *The Creative Economy*, *John Howkins* [26] argues that intellectual property is far more important today than “hard goods” and that creativity itself should be treated as a key commercialisation factor. At the same time, *Florida* [20] points out that the highest paid workers today are those who belong to the creative class. Just as factories were the key institutions in the industrial era, schools and universities are becoming the key institutions in the era of innovation. Shaped for some other times, contemporary universities function like parastatal institutions. Schools and universities must abandon their current position of isolated islands and evolve into cultural centres providing support to creativity and innovation.

Creative industries include a great number of micro-businesses and SMEs, as well as the largest corporate brands like Time Warner, BBC and the like. They need new public-private partnerships. The economic success of Silicon Valley and creative industries in London and a number of other large cities has always been accompanied by the significant involvement of universities and government agencies in the creation of an environment in which creative clusters can be developed. In this way creative industries also exert influence on the development of completely new social development models. In analyzing the development of creative industries after a decade of debate, *Flew* and *Cunningham* [18] conclude that creative industries are becoming increasingly important for economic well-being, while proponents suggest that human creativity is also an economic resource and that the industries of the 21st century will depend on the generation of knowledge through creativity and innovation.

The first industrial revolution began in Britain in the late 18th century with the mechanisation of the textile industry – craft production was replaced by machine production. The second industrial revolution began in America in the early 20th century with the assembly line, which ushered in the era of mass production. In describing the third industrial revolution, *The Economist* [42] points out that the factories of the future will enable competitive production in small lots and greater flexibility, coupled with a much lower input of labour, thanks to new materials and completely new processes, such as 3D printing, easy-to-use robots and collaborative manufacturing services available online. The shift from mass production towards individualized production is evident. Therefore, manufacturing firms are committed to introducing new and innovative products. Here we need to recall that in the United States, for example, the share of manufacturing in GDP is only 11%. At the same time, 68% of its expenditures accounts for R&D. In these processes there is a sharply increasing need for human capital with superb skills. An increasing number of goods will be sold on a service basis. Therefore, *Atkinson and Ezell* [3, pp. 182-184] emphasize that a new race for global economic advantage is well underway and that its winners will be those that are most innovative.

Supporting SME innovation capacity, especially in manufacturing, is the key component of the innovation strategies of most countries. Numerous countries have introduced expanded services with the aim of strengthening productivity, innovation and export capacity [17], including the use of innovation vouchers as SME support. These vouchers ranging in value from USD 5,000 to USD 30,000 enable SMEs to “buy” expertise from universities, national laboratories, or public research institutes. The intent is to provide an incentive to research institutes to be reactive to SME needs and encourage knowledge transfer, either as assistance to SMEs in addressing special technological challenges, or as assistance in the implementation of innovation systems. According to the Dutch Innovation Agency, this system has significantly spurred innovations – 8 out of 10 vouchers have produced the results that could not be possible without this programme. Since 2005, 80% of new R&D projects have been created in this Agency through

innovation vouchers. If innovation is the elixir that amplifies incomes and advances economic competitiveness, and if innovation policy is required for an even more potent elixir, *Atkinson and Ezell* [3, pp. 184-185] pose the question why India is still poor, why Japan cannot speed up its growth, why the United States is lagging behind in introducing digital platform technologies, why education systems are the same as 50 years ago, why some diseases, like cancer, have not yet been conquered, why recoverable energy is more expensive than coal and oil? They point to the fact that it took 24 years (1984-2008) for world GDP to double. As things stand now, global GDP will double until 2034, and to reach that level by 2026, it is necessary to increase competitiveness, that is, long-term productivity from 3.1% to 4.1%. Should the level of productivity be increased, the incomes of billions of people being trapped in the vicious circle of poverty will increase by factor of 5 in 41 years instead of 54.

In developing the concept of disruptive and sustaining innovation, *Christensen et al.* [8] point out that innovation has now become a dominant force in the processes of opening new markets to new entrants. A disruptive innovation, stemming from *Shumpeter's* school of creative destruction, is an innovation that helps create a new market and value network, and eventually disrupts the existing market and value network (over a few years or decades), replacing earlier technologies. The term is used in business and technology literature to describe innovations that improve products and services in the ways that the market does not expect (e.g. by creating different positions of consumers on new markets and lowering prices on existing markets). In contrast to a disruptive innovation, a sustaining innovation does not create new markets or value networks, but rather only evolves existing ones with better value, enabling firms to compete against each other's sustaining improvements. Sustaining innovations may be either “discontinuous” (i.e. “transformational” or “revolutionary”) or “continuous” (i.e. “evolutionary”). Three enablers of disruptive innovation are: (i) simplifying technology, (ii) business model innovation – which brings about simplified solutions for customers being interested in them (it always ranges from the value proposition – a product that helps customers do more effectively, conveniently and affordably jobs

that they have been trying to do, which requires people, technology, products, equipment, brands and cash in order to deliver the value proposition to target customers) and (iii) embedding this into a new value network (customers, distribution, suppliers). A disruptive (or empowering) innovation creates a base for new employment. A sustaining innovation is very significant but, due to its nature, does not generate new employment. Such innovations make a good product better. When customers buy the new product, they usually don't buy the old product. Toyota created the Prius, a phenomenal innovation product, and when it sells a Prius, the customer rarely buys a Camry, too. Consequently, sustained innovations are significant, but they do not create jobs.

Christensen [6] argues that successful companies often put too much emphasis on customers' current needs and fail to adopt new technologies or business models that meet their customers' unsatisfied or future needs. In his latest work, *Christensen* [7] places the focus on the outcome of innovation-based growth and categorizes innovations in the following way:

- (i) *Performance-improving innovations* replace old products with new and better models; since these innovations are in essence substitutive, they are characterized by the modest creation of new jobs; when customers buy the new product from this group, they will not buy the old product, too; in this case sustaining innovations are dominant and a good example is Toyota's model Prius (when the customer buys a Prius, he will not buy a Camry, too);
- (ii) *Efficiency innovations* enable the production and sale of goods and services to the same customers at lower prices; some of those innovations are so-called low-end disruptions and are related to the creation of new business models (Walmart was a low-end disrupter in retailing, Toyota's just-in-time production system represents process improvement); efficiency innovations play two important roles: (1) they increase productivity, which is essential for maintaining competitiveness, but has a painful effect – a decrease in the number of employed people, and (2) they free up capital for more productive uses; and

- (iii) *Market-creating innovations* deeply transform complicated and costly products so radically that they create a new class of consumers, or a new market (mainframe computers cost hundreds of thousands of dollars and were available to a small number of people; then, personal computers knocked down their price to USD 2,000 and made them available to millions of people in the developed world; a similar thing happened to smartphones whose price of USD 200 enabled billions of peoples throughout the world to dispose of computers; these innovations reduce costs with an increase in the volume of production and enable the innovator to reach new customers); as a rule, these innovations create new jobs, but require capital investments.

The essence of recent *Christensen's* message is that we need a mix of these types of innovations – capital freed up through an efficiency innovation should be invested in market-creating innovations. *Christensen* and *van Bever* [7] point to the phenomenon that we encounter today that firms do not invest in innovations that may spur growth despite the historically lowest interest rates and enormous amounts of cash. Reliance on old metrics based on the obsolete assumption that capital is a “scarce resource“ has been brought into question, because capital is not scarce today (over USD 1,600 billion in cash are now available in corporate balance sheets) and if companies wish to maximize their returns, they must change their behaviour and start the battle for talent. Recently, *Porter* and *Heppelmann* [32] have argued that there have been three waves of IT-driven competition, which radically reshaped competition in the past 50 years. The first wave of IT, during the 1960s and 1970s, automated individual activities in the value chain, ranging from order processing and bill paying to computer-aided design and manufacturing resource planning. The rise of the Internet unleashed the second wave of IT-driven transformation in the 1980s and 1990s. The Internet enabled coordination and integration across individual activities; with outside suppliers, channels, and customers; and across geography. It allowed firms, for example, to closely integrate globally distributed supply chains. These first two waves gave rise to huge productivity

gains and growth across the economy. While the value chain was transformed, products themselves were largely unaffected. Now, in the third wave, IT is becoming an integral part of the product itself. “Smart, connected products” – made possible by vast improvements in processing power, device miniaturisation and ubiquitous wireless connectivity – are expanding and transcending industry boundaries, disrupting value chains, altering industry structure, and raising a new set of strategic choices for competitors. This type of transformation will unleash a new and even greater wave of innovation, productivity gains and economic growth.

Innovation as a potential for growth in Serbia and the CEE/SEE region

The previous analysis, researching the work of the most relevant scholars, has deduced that innovation and creative industries play a key role in future economic development. It is now crucial to determine how Central and Eastern Europe (CEE) and Southeast Europe (SEE) as sub-regions, and specifically Serbia, stand in terms of innovation as potential for growth. For this purpose we will analyse the Global Innovation Index, Global Competitiveness Index and GDPpc PPP, and provide additional empirical data on the level of innovation and cluster development in Serbia.

According to *Savic, Pitic and Trbovich* [40], Serbia is currently at the investment-driven stage, conditioning further development upon new investments in increased productivity of goods and services. Although Serbia has entered the second stage of development, it has done so without a sufficiently developed infrastructure (roads,

railways, airports, ports and the like) or administrative infrastructure (weak rule of law, public administration, corruption, etc.), and with poor basic human capital. All this has contributed to a relatively low level of Serbia’s competitiveness, ranking as 94th of 144 countries in 2014. On the other hand, Serbia has achieved significant advantages in some competitiveness elements: elementary education, primary health care and part of telecommunications infrastructure. Therefore, Serbia should commit to resolutely completing the outstanding tasks from the previous stage, including development of logistic and administrative infrastructure, and focus on improving human capital quality. At the same time, it must strengthen the elements of competitiveness linked to innovation infrastructure (skills and innovations), which will enable it to shift to the most advanced innovation-driven stage of competitiveness in the future. In the skills segment, Serbia needs to further improve the quality of math and science education, to increase tertiary education enrolment, and to eliminate deficiencies in the overall quality of the educational system, and specifically the quality of management schools. In the innovations segment Serbia should further encourage the development of patents and enhance quality of scientific research institutions, while at the same time eliminating distinct weaknesses in university-industry R&D collaboration and country capacity to retain and to attract talent. Both the business sector and the government play a role in providing impetus to these processes.

As a general conclusion, based on the analysis of GCR rankings (see Table 1), it can be stated that, insofar as the macroeconomic determinant of competitiveness is

Table 1: Macroeconomic determinants of competitiveness (ranks)

	Macroeconomic competitiveness		HD&PI (former SIPI)		MFP	
	2008	2014	2008	2014	2008	2014
Serbia	74	91	75	87	75	116
B&H*	84	58	94	59	47	51
Romania	78	89	80	81	66	68
Bulgaria	81	78	87	94	56	41
Macedonia, FYR	70	69	75	62	48	48
Montenegro	50	50	51	54	47	52
Albania	88	76	87	83	90	79
Croatia	66	74	64	70	74	71
SEE	74	75	76	76	63	68

Note: Authors’ recalculations based on Porter et al. 2008. Rank versus 144 countries; * For B&H we used data for 2013
Source: *Global Competitiveness Report* [50], [52]

Table 2: Microeconomic determinants of competitiveness (ranks)

	Microeconomic competitiveness		NBE		SCOS	
	2008	2014	2008	2014	2008	2014
Serbia	88	106	85	102	106	129
B&H*	106	90	103	90	121	93
Romania	70	81	68	79	79	87
Bulgaria	80	85	75	81	102	98
Macedonia, FYR	88	66	85	62	103	80
Montenegro	72	71	69	69	85	85
Albania	100	86	98	88	108	86
Croatia	67	79	68	77	62	83
SEE	84	82	81	80	96	93

Note: Authors' recalculations based on Porter et al. 2008. Rank versus 144 countries; * For B&H we used data for 2013

Source: *Global Competitiveness Report* [50], [52]

concerned, Serbia and all SEE must act toward improving human development, rule of law and efficient political institutions - HD&EPI (former SIPI).

Since value is created only at the microeconomic level, we will further analyse the microeconomic determinant of competitiveness as the most important component. Table 2 shows the two key components of the microeconomic determinant of competitiveness – NBE (national business environment) and SCOS (sophistication of company operations and strategy). Data show that microeconomic determinant of competitiveness in Serbia to be at a lower level than the macroeconomic determinant. A key generator of the deterioration of microeconomic determinant of competitiveness, SCOS (Sophistication of company operations and strategy) which dropped from 106th in 2008 to 129th place in 2014. The second generator of the deterioration of microeconomic determinant is quality of NBE (national business environment) which dropped from 85th to 102nd place in the same period.

Additional analysis was devoted to NBE as the essence of microeconomic competitiveness (see Table 3). This analysis was carried out using the Porter's diamond on the basis of NGCI methodology (see Table 3). Within the Diamond, Serbia achieved the best ranks in terms of factor conditions and the lowest ranks in terms of supporting and related industries and demand conditions. These results are unsurprising and reflect the fact that competitiveness in Serbia primarily improved in the first two components of the Porter's diamond – factor conditions and the context for strategy and rivalry. In order to achieve a considerably higher competitiveness rank, Serbia should also significantly improve the other two components (supporting and related industries and demand conditions).

Consequently, it is strategically important that Serbia bases its reindustrialisation process on the strengthening of innovation, since the latter that provides a basis for shifting to the higher stage of competitiveness, as well as on the development of knowledge-intensive creative

Table 3: Porter's Diamond in SEE

	1. Factor conditions		2. Context for strategy and rivalry		3. Supporting and relating industries		4. Demand conditions	
	2008	2014	2008	2014	2008	2014	2008	2014
Serbia	77	90	95	117	100	122	89	127
B&H*	97	84	106	100	118	103	123	109
Romania	64	85	74	99	76	113	72	108
Bulgaria	73	73	78	89	82	92	71	52
Macedonia, FYR	75	71	97	85	105	95	100	118
Montenegro	68	60	64	71	93	101	65	64
Albania	96	80	92	68	119	122	110	54
Croatia	58	66	85	107	79	80	67	123
SEE	76	78	86	92	96	103	87	94

Note: Authors' recalculations based on Porter et al. 2008. Rank versus 142 countries; * For B&H we used data for 2013

Source: *Global Competitiveness Report* [50], [52]

industries that are deemed essential for accelerated GDP growth. To that end, Serbia must be intensively involved in processes described by *Porter* and *Kramer* [33] with regard to the emergence of new capitalism in which businesses fulfil their mission by creating shared value. According to *Porter* and *Kramer*, business at its best is an innovation that satisfies society’s needs and builds profitable enterprise, since these two twin goals represent the next competitive frontier for companies.

During the times of recession induced by the Global economic crisis, in the period from 2008 to 2014, SEE maintained their competitiveness rank (ranked at 80th place), while the score increased from 3.87 to 3.99. The region’s rank in terms of GDPpc ppp also remained unchanged (ranked at 80th place), with the average annual growth rate stood at 2.3%.

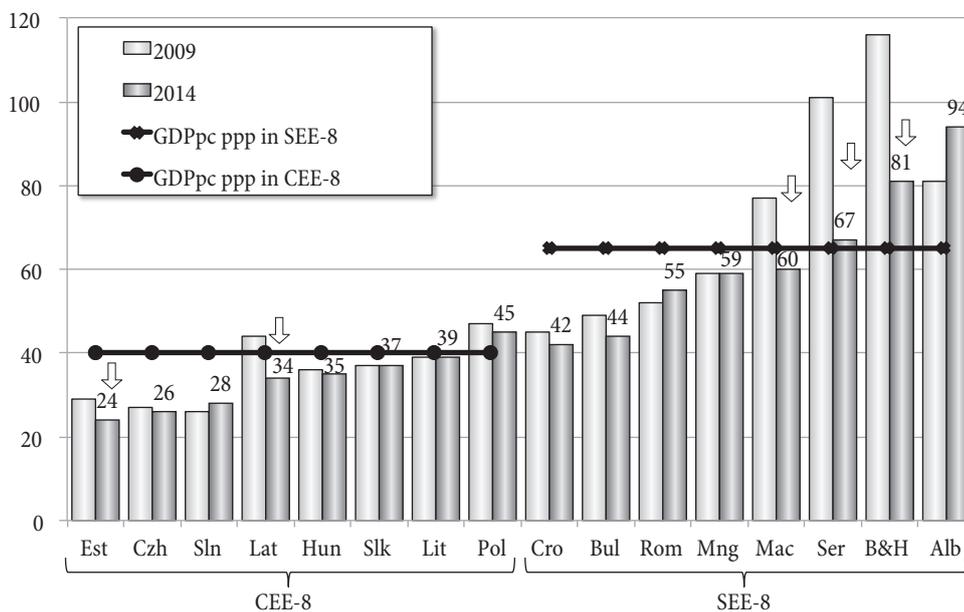
However, the competitiveness dynamics among the countries in the region exhibited substantial differences. The greatest improvement in competitiveness was recorded by B&H, Albania and Bulgaria, while the greatest deterioration was recorded by Croatia, Romania and Serbia.

Within the scope of Porter’s diamond analysis, in 2014 SEE established competitive advantages primarily in factor conditions (parts of administrative, communication and innovation infrastructure) and then in a certain elements of strategy and rivalry context. On the other hand,

there are distinct competitive disadvantages found in all four segments of Porter’s diamond: in factor conditions (especially in logistical infrastructure, part of administrative infrastructure, capital market infrastructure and part of innovation infrastructure), than in the strategy and rivalry context (primarily due to low intensity of local competition, extent of market dominance and insufficiently developed labour-employer relations), than in supporting related industries (primarily due to the low level of cluster development and low quality and quantity of local suppliers) and, finally, due to undeveloped demand conditions (primarily due to the low level of buyer sophistication).

The Global Innovation Index (GII, 2014) relies on two sub-indices – the Innovation Input Sub-Index and the Innovation Output Sub-Index and four overall measures: (i) the Innovation Input Sub-Index, which consists of five input pillars capturing elements of the national economy that enable innovative activities (institutions, human capital and research, infrastructure, market sophistication, and business sophistication); (ii) the Innovation Output Sub-Index based on innovative activities within the economy (knowledge and technology outputs and creative outputs); (iii) the overall GII score, which is the simple average of the Input and Output Sub-Indices, and (iv) the Innovation Efficiency Ratio, which is the ratio of the Output Sub-Index over the Input Sub-Index which shows how much

Figure 2: Global innovation index rankings



Source: Cornell University, INSEAD and WIPO, *The Global Innovation Index 2009/2010 and 2014* [9]

innovation output a given country is getting for its inputs. GII for 2014 includes 143 economies with 81 indicators, representing 92.9% of the world's population and 98.3% of the world's GDP (in current US dollars).

GII 2014 confirms the continued existence of global innovation divides. Despite the increased globalisation of R&D, the literature has noted that the actual production of high-quality scientific research papers over the last three decades is spiky and geographically concentrated in only a few centres of excellence. The world's leading cities for the production of scientific papers at the highest levels have remained essentially the same for the past three decades. The GII takes a more holistic view of innovation, which includes several factors other than R&D spending and scientific publications, but GII findings show that even with such a broader view, sharp divides in innovation results remain widespread.

Innovation leaders among the CEE (Central European Economies) are Estonia, the Czech Republic and Slovenia (see Figure 2). The leaders according to the GII level among the SEE are Croatia and Bulgaria. According to this indicator, when the financial crisis of 2008 began, Serbia was ranked 101st with only Bosnia and Herzegovina in the

region ranked below. Since then, Serbia has improved its ranking – in 2013 it was ranked 67th, but it was better only compared to Bosnia and Herzegovina and Albania in the region. Table 4 shows the rankings of these countries in terms of GDPpc PPP, GCI (Global Competitiveness Index) and GII. A country achieves a GDPpc PPP that reflects the level of its prosperity, that is, the standard of living (column 2). Column 3 shows GCI ranks. This index shows the level of productivity with which a country uses all available resources. The countries whose GCI rank is higher than the rank in terms of GDPpc PPP use their available resources in a more productive manner; they are more competitive and thus ensure a higher standard of living. Four out of the CEE countries are ranked better in terms of GCI than in terms of GDPpc PPP – Estonia, Lithuania, Poland and Latvia, while five of the SEE countries are also similarly ranked – Bulgaria, Romania, Montenegro, Macedonia and Serbia.

All CEE and SEE countries are ranked more highly in terms of innovation than in terms of GDPpc PPP. In addition, the positions of all countries (except Poland) are better in the GII than in the GCR. These data demonstrate that both the CEE and SEE countries have recognized the

Table 4: Competitiveness and innovations in Central and South-eastern Europe (ranks)

Country	GDPpcPPP 2013	GCI – rank in 2013	GII– rank in 2013	Relative GII position (2013 vs 2009/08)
CEE				
Estonia	45	29	24	+5
Czech Republic	37	37	26	+5
Slovenia	35	70	28	+8
Latvia	53	42	34	+26
Hungary	51	60	35	+12
Slovakia	41	75	37	-2
Lituania	47	41	39	+3
Poland	49	43	45	+11
Average CEE	45	50	34	
SEE				
Croatia	57	77	42	+20
Bulgaria	69	54	44	+30
Romania	74	63	55	+14
Montenegro	81	67	59	+12
FYR Macedonia	88	63	60	+29
Serbia	83	94	67	+25
B&H	100	87	81	+26
Albania	95	97	94	+27
Average SEE	81	75	63	

Note: calculated by authors

Source: *Global Competitiveness Report 2014-2015* [52], *The Global Innovation Index* [9]

importance of innovation in the process of improving competitiveness, and hence the standard of living. The last column in Table 4 points to relative changes in the GII during the crisis (2013 vs. 2008). During this period, all CEE countries except Slovakia improved their rankings. All SEE countries significantly improved their rankings: Bulgaria by 30 places, Macedonia by 29, Albania by 27, Bosnia and Herzegovina by 26, Serbia by 25, etc. These data demonstrate that, despite the impact of the 2008 Global economic crisis, the SEE as a whole succeeded in significantly improving innovation competence, partly due to the region's own efforts and partly due to lagging by other regions.

As for Serbia (see Table 5), the innovation strengths in 2013 included: (i) knowledge and technology output (especially scientific & technical articles – 5th place and ISO 9001 quality certification – 6th place, among 142 countries), (ii) innovation infrastructure (especially ISO 14001 environmental certificate – 9th place, ecological sustainability – 28th place) and (iii) human capital research. On the other hand, the crucial disadvantage of Serbia lies in the component of market sophistication, primarily due to the low intensity of local competition, low investments, trade and level of competition.

Insofar as relative innovation changes in Serbia in 2013 are concerned (relative to 2008, as the year when the Global economic crisis began), it can be observed that it moved up 25 places as measured by GII. In terms of innovation, Serbia improved its rank from 92nd to 67th place. Improvements were especially pronounced in the components of human capital and research, creative output and knowledge and technology output.

Clusters and creative industry development in Serbia

To this day, one cluster mapping study was conducted in Serbia using the European Cluster Observatory methodology that was initially developed by *Michael Porter*, focusing on employment distribution within 38 cluster categories (defined according to EU standards valid at the time of the study), though with noted limitations in employment statistics available in Serbia. The study, undertaken in 2009 by an EU-funded project, Support to Enterprise Competitiveness and Export Promotion (SECEP), found a) a high concentration of 11 cluster categories comprising various service industries in Serbia's three largest cities (Belgrade, Novi Sad and to a lesser extent Niš; Business Services; Communication and Equipment; Distribution Services; Education and Knowledge Creation; Entertainment; Financial Services; Hospitality and Tourism; Information Technology; Publishing and Printing; Sporting, Recreational and Children's Goods; and Transportation and Logistics), b) 14 clusters dispersed more widely across Serbia (Agricultural Products; Apparel; Biopharmaceuticals; Building Fixtures, Equipment and Services; Chemical Products; Construction Materials; Forest Products; Furniture; Heavy Construction Services; Lighting and Electrical Equipment; Metal Manufacturing; Plastics and Rubber; Processed Food; and Production Technology); and c) a number of cluster categories were insignificant in Serbia with low levels of employment and/or a small number of registered companies. (Aerospace; Analytical Instruments; Automotive Components; Fishing and Fishing Products; Footwear; Heavy Machinery; Jewellery and Precious Metals; Leather Products; Medical Devices;

Table 5: Innovations in Serbia (ranks)

	2013	2008	Relative change (2013 vs. 2008)
GI	67	92	+25
Institutions	69	94	+25
Human capital & research	59	120	+61
Infrastructure	53	81	+28
Market sophistication	134	59	-75
Business sophistication	83	104	+21
Knowledge & technology output	44	74	+30
Creative output	79	128	+49

Note: calculated by authors

Source: *GI (2008-9, 2014-15)* – Cornell University, INSEAD and WIPO [9], *The Global Innovation Index 2014* [52]

Oil and Gas Products and Services; Power Generation and Transmission; Textiles; and Tobacco) [27]. Since the study was conducted, service industries continue to dominate as cluster activities. Furthermore, an automotive components cluster (AC Cluster) has gained in significance due to market entry of a large automobile producer, Fiat, and positioned itself regionally, creating a SEE supplier database. Government assistance to clusters continues (usually grants distributed by Ministry in charge of economy and Regional development agencies), but it is more limited due to pending fiscal constraints (for instance, no grants were distributed in 2014), while donor assistance has subdued, with no ongoing EU projects in this area, one USAID grant in ICT as part of exit strategy, and a small cluster project funded by Danish government in Southeast Serbia. As a result, most clusters are poorly organized with low activity level. Notable exceptions are clusters in information and communication technologies – ICT (ICT Network, Vojvodina ICT Cluster, NICAT cluster, ICT Cluster of Central Serbia, ICT Hub Belgrade), apparel (FACTS), metals (Vojvodina Metal Cluster), tourism and, to an extent, furniture clusters, due to recognized value they provide to company members but also initial donor and government support. Film and engineering clusters (in form of Serbia Film Commission, and Association of Consulting Engineers in Serbia, respectively) have also been gaining increasing traction for similar reasons. Clusters in Serbia continue to require assistance to improve management, design and fund activities, and promote awareness on synergetic effects of clustering, not just at national but also at regional level.

Conclusions

Reindustrialisation in Serbia should be strongly focused on processes that buttress innovation, since this is the essential basis for shifting to the higher stage of competitive development. The strengthening of knowledge-intensive clusters of creative industries should provide a foundation for upgrading Serbian prosperity.

Synergetic effects could be achieved if SEE countries coordinate regional competitiveness more closely.

Stemming from our previous analysis, the following recommendations apply:

- (i) In the context of improving NBE it is necessary to strengthen regional infrastructure (logistical infrastructure, as well as energy, financial and research-educational infrastructure), remove trade and investment barriers, reduce market dominance and local monopolies and protect consumers;
- (ii) In the context of macroeconomic policies and access to finance, it is necessary to coordinate measures in financial markets and enhance investments by the European Investment Bank and the European Bank for Regional Development, as well as achieve full utilisation of new financial instruments within the Western Balkans Enterprise Development and Innovation Facility – EDIF, combined with national instruments such as the Innovation Fund of the Republic of Serbia and other regional funds such as the Small Enterprise Assistance Fund - SEAF; and,
- (iii) In the context of political institutions it is necessary to coordinate efforts on reducing corruption and strengthening regulatory bodies, while sharing best practices, improving dispute resolution mechanisms and economic statistics.

Clusters in Serbia, and in the region, require further support, which should be devised after further analysis including regional-level cluster and creative industries mapping. Specific cluster support should be combined with broader measures to improve the business-enabling environment, access to finance and education reform, teaching students and arts and humanities business and entrepreneurship, and enabling linkages among the traditional lines of industry to transform outputs into more value added outputs of creative industries.

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