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INDUSTRIAL POLICY FOR SERBIA: A MATRIX APPROACH*

Industrijska politika za Srbiju – matrični pristup

Abstract

There are not many things in economic policy that raised so much controversy about its worthiness like the industrial policy did. Through decades, it followed the path from worshiping to total rejection. The main culprit for displacement of industrial policy from the economic policy throne to a historical trash bin was the Washington Consensus and the neo-liberal doctrine it represented. After it became obvious that the key winners of the neo-liberal economic policy reside in the financial sector, and especially after the burst of the fairytale in 2008, the adreamed advocates raised their voices again. This paper is dedicated to the reborn debate on the necessity of industrial policy in conducting structural changes in the economy, and for attaining an equilibrium as well as sustainable growth path. The aim is to create and propose a comprehensive set of measures adequate for Serbia's economy case. When the suggestions flow from the academic viewpoint, they take the form of the optimal framework for attaining specific goals. We intended to provide a framework that is fact-based, concrete, inciting and realistic.

The main output of the analysis presented here is an industrial policy program for Serbia in the form of a matrix with joint horizontal, as well as sector-based vertical measures. In case of strategically important sectors with high growth potentials, sector-based measures resemble traditional vertical policies, while in other cases they merely imply adhering to the sector's specifics in the implementation of the horizontal measure. The matrix shows the most important policy measures required to stipulate growth in a particular industry given its specifics and current conditions. The industries are selected carefully with a genuine belief that they truly represent the key fulcrums of sustainable growth in the future.

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Keywords: *industrial policy doctrine, vertical approach, horizontal approach, the matrix approach, industrial policy program for Serbia, heterodox economic policy framework*

Sažetak

Nema mnogo stvari u oblasti ekonomske politike koje su pokrenule toliko polemike u pogledu vrednosti i značaja kao što je slučaj sa industrijskom politikom. Tokom decenija, industrijska politika prolazila je put od obožavanja do potpunog odbacivanja. Glavni „krivac" za premeštanje industrijske politike sa trona ekonomske politike u kantu za otpatke ekonomske istorije je Vašingtonski konsenzus i neoliberalna doktrina koju je on predstavljao. Nakon što je postalo očigledno da su glavni dobitnici neoliberalne politike u finansijskom sektoru, a naročito nakon završetka bajke 2008. godine, uspavani advokati podigli su ponovo svoj glas. Ovaj rad posvećen je ponovo rođenoj debati povodom neophodnosti industrijske politike u sprovođenju strukturnih reformi ekonomije, dostizanju ravnoteže i održivog rasta. Cilj rada je da se kreira sveobuhvatan skup mera industrijske politike prilagođenih slučaju srpske ekonomije. Kada predlozi dolaze sa akademskog stanovišta oni uzimaju oblik optimalnog okvira za dostizanje odgovarajućih ciljeva. Namera je da se ponudi okvir koji je zasnovan na činjenicama, stimulativan za kreatore ekonomske politike i realističan.

Glavni rezultat prezentirane analize je program industrijske politike za Srbiju u formi matrice koja istovremeno daje pregled horizontalnih i sektorskih, odnosno vertikalnih mera. U slučaju strategijski značajnih sektora sa velikim potencijalom za rast, sektorske mere odslikavaju tradicionalne vertikalne politike, dok u drugim slučajevima jednostavno upućuju na poštovanje sektorskih specifičnosti u implementaciji horizontalnih politika. Matrica ukazuje na najvažnije mere ekonomske politike neophodne za podsticanje aktivnosti određenog sektora imajući u vidu njegove specifičnosti i trenutno stanje. Prioritetni sektori odabrani su pažljivo, sa iskrenim verovanjem da predstavljaju istinska uporišta održivog rasta u budućnosti.

Ovaj rad nastao je uz podršku profesora D. Đuričina, čiji su korisni saveti, kao i zajednički rad u okviru ranijih istraživanja na ovu temu, doprineli u velikoj meri oblikovanju predstavljenih zaključaka i predoga.

Ključne reči: *doktrina industrijske politike, vertikalni pristup, horizontalni pristup, matrični pristup, program industrijske politike za Srbiju, heterodoksni model vođenja ekonomske politike*

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Introduction

One of the key questions in contemporary economics refers to the role of the state [13]. Economic history has taught us that there was a time when economists believed that only government interventions could save the economy from crisis, as well as a time when economists started to believe that government interventions represent the greatest evil of all and that only the invisible hand of the market could lead the economy toward growth and prosperity. Today, there are many of those who follow the thoughts of Stiglitz, Rajan and Rodrik, who believe that the invisible hand of the market and the visible hand of the state can transform their shake into economic success, hardly seen nowadays, in terms of sustainable growth, as well as economic and social development.

This paper is dedicated to the abovementioned ideological strand, since scholars in Serbia, along with the rest of the developing, but also developed countries, struggle to find possible solutions to crawling and jobless economic growth. The key ideas that form the essence of the paper are a part, the vital one, of a broad multipronged reform, one that is much more far-reaching and inter-generational and that holds up the structure of the heterodox policy platform emerged after the 2008 crisis [10], [11] and [12]. Industrial policy lies at the heart of the proposed reform. Furthermore, we will provide arguments that support the claim that, although industrial policy should maintain its horizontal nature and aim to promote adequate framework conditions in the way that neo-liberal capitalism proposed, the specific needs and characteristics of individual sectors must also be taken into account. Hence, we followed the matrix approach where horizontal measures are intersected with the key sectors' requirements and offered a possible industrial policy program, set with concrete measures as a guidance for near-future policy decision-making.

The paper is structured as follows. After the introduction, the second part is dedicated to the evolution of the industrial policy doctrine. We follow the changes in the character, goals, as well as the prevailing standpoints regarding industrial policy over time. The third part discusses obstacles and possibilities to learn from past failures and to pave the way toward the new approach. The fourth part deals with contemporary industrial policy discourse dedicated to attaining the best possible combination and synergy between positive aspects of different approaches from the past, marked as "the big comeback" [3]. The fifth part represents the industrial policy set of measures for Serbia, based on the key industries symbolizing the real fulcrums of sustainable growth in the future. The sixth part concludes the paper.

Evolution of industrial policy doctrine: The old meets the new

As noticed in K. Aiginger [3. p. 297], industrial policy in the real world has two constant companions: poor design and heavy opposition. What is worse, good intentions have too often been overshadowed by bad outcomes. Consequently, industrial policy has been seen as a wide-ranging ill-assorted collection of micro-based supply initiatives designed to improve market performance on a variety of occasionally mutually inconsistent ways [15]. Another contradiction comes from the fact that no commonly accepted definition exists, and that interpretations vary across regions, across stages of development and, what makes the situation even more complicated, across time in the same regions and within the same stage of development. According to [3. p. 299], the definitions disagree on the following trade-offs: a. sectoral targeting vs. horizontal measures, b. passive vs. active policies, c. general measures vs. "picking winners", d. restructuring vs. promoting positive spillovers.

As far as the first trade-off is concerned, the question is whether to give priority to specific industries or to set broad measures with impact on many or even all industries. The second trade-off refers to whether to restructure large firms (which often decelerates the speed of change) or to promote entrepreneurship, innovation spinoffs and new capabilities. The third question is actually a choice between boosting competitiveness by creating an adequate framework and micro-interventions for specific firms, regions or industries. The last question is whether to give subsidies to prevent exiting the market or to promote innovation, training and other dynamic feed-backs.

Despite numerous opponents, economic history teaches us that the visible hand of the state played a

significant role each time the economy has taken off. Yet, we have never seen the rise of a specific theoretical corpus dedicated to industrial policy as one of the main tools in that hand. On the other side, a significant body of literature is divided between the part promoting industrial policies in the light of market failures, and the one criticizing industrial policies in the light of state failures and "picking losers" cases [9]. H. Pack and K. Saggi [31, p. 267] provide a "skeptical summary of rationales" for industrial policy and conclude that "there appears to be little empirical support for activist government policy, even though market failures exist, that can in principle justify the use of industrial policy".

The widest difference in definition exists, of course, between opponents and advocates of industrial policy. The former tend to equate industrial policy with subsidies, while those favorably inclined toward it see it as a way to promote innovations, education, technological spillovers as well as a way to improve institutional setting and attractiveness of the business environment.

The doyen in the field of industrial policy, D. Rodrik, admits that for lack of a better term he continues to use the term "industrial policy" for the policies aimed at restructuring the economy [33, p. 2]. He points out that the initial purpose of industrial policy to support industrial production and manufacturing is long surpassed and is now, although the term does not suggest it intuitively, more often than not used for other sectors such as agriculture and services.

Vertical approach in the postwar period

Industrial policy saw its rise after WWII, particularly in Asia and Latin America, but also in Europe (notably, in France). During this period, even though it was changing its pace and impact, the industrial policy was essentially sector-based. Furthermore, it was predominantly related to manufacturing. Despite a short standstill at the end of the 1970s, after the emergence of Japan as a manufacturing superpower, the industrial policy discourse regained strength in many countries at the beginning of the 1980s [8, p. 213]. Although still leaning on the vertical approach [16], [24], [37], the focus was not on manufacturing anymore. Industrial policy was seen as any government measure (or set of measures) to promote or prevent structural change [32], to create optimum conditions for the necessary structural transformation [22] or as everything that is useful to improve growth and competitive performance [1].

The export-driven growth model which ignores openness of the world market and in part favors closure within domestic markets, as well, had recorded the best results (South Korea, Japan, Taiwan, France, Uruguay, etc). This model started fading out as the globalization process and the emergence of supporting institutions such as the WTO took place. Finally, the Washington Consensus, in all its glory, almost entirely wiped out the vertical industrial policy.

In the first phase, vertical policies promoted sectors in which state intervention took place because of national independence, technological autonomy, failure of private initiative, decline in traditional activities and geographical balance (as it was the case in former Yugoslavia). By means of such approach, embryonic hybrids of administration and privately held companies in many developed and developing countries transformed themselves from national champions into globalized firms [8, p. 215]. Hyundai, Sony, but also Airbus, are just some of the examples [8], [17], [23].

Counterfactual evidence exists. Great successes, but also a number of major failures (computer industry project Plan Calcul in France, for example) were recorded. In cases where industrial policy did not deliver the desired results, the problem originated from the fact that protectionism was not possible due to prevalence of the private sector demand. Yet, a number of "national champions" created by means of industrial policy became "global champions", taking the highest positions in the world's largest companies' list [8, p. 218].

The national champion policy proved to be successful in case of large firms, large scale economies, lead-edge technologies, and low product variety. However, governments are not necessarily worse in picking winners than the markets are, but they are far inepter in terminating projects that turn out to be unsuccessful [34].

Characteristics of industrial policy before the Washington Consensus encompass the following [8, pp. 215-17]:

1. *Offensive protectionism*. The state creates the means for accumulation of scientific and financial resources, secures the market through public procurement policies and forbids foreign entries. Success in the international marketplace is the ultimate goal.
2. *Innovation*. Even though scientific and technical in nature, it played a crucial role in bringing together actors from different fields and making them accountable for the success of an important venture. This is particularly true for sectors such as nuclear power generation, vehicles and telecommunications.
3. *Flexible state*. The success of the "grand projects" is possible only in the presence of the administration-enterprise collaboration that combines regalian authority, on one hand, and the logic of an enterprise, on the other.
4. *Capitalism without capital*. At the beginning, the state has the upper hand over entrepreneurs and industrialists, but once an enterprise is capable to generate most of its revenues on the free market, moving away from public procurement logic, it is capable of freeing itself.
5. *Convergence of objectives*. Success comes only when the objectives of industry participants match the objectives of the industrial policy.

With the emergence of neo-liberal capitalism, industrial policy was confined to the trash bin of economic history, along with other outmoded policies such as central planning and trade protection [33, p. 28].

Horizontal approach as a product of neo-liberal capitalism

The horizontal approach has been mentioned explicitly in policy documents since the 1990s, but at the same time and from the very beginning lost its role as a separate policy strand [3, p. 306]. Horizontal approach, in essence, means the implementation of adequate framework policies (including competitive policies, environmental policies, social, as well as macroeconomic policies). It encompasses a wide array of measures which have an impact on most or all industries.

At the beginning, it had a fundamentally opposite aim compared to the initially developed vertical approach. It was meant to promote competition policy that favors prohibition of dominant position and market abuses, regulation of state aids, trade policy inspired by free movement of goods and services (based on the theory of comparative advantage) and R&D and technology policy that creates positive externalities for the entire economy [8, p. 215]. Unfortunately, the reality soon proved that the institutional setting often does not predate but rather accompanies growth.

How could we ever have expected that the two approaches with essentially different purposes and tools would actually hit the same target? Indeed, as various authors suggest, competitive environmental policies in Europe did not deliver the desired results [3, p. 297]. After switching from the sectoral to the horizontal approach, we faced never-ending problems with targeting, large projects and specific technologies. By putting vertical policies in a trash bin and choosing competitive environment and sound macroeconomic framework based on neo-liberal policy platform as the key drivers of growth, the EU took a great risk. As seen in [8, p. 221], in most of the EU member states, macroeconomic policies of competitive disinflation and promotional policies of competition within the framework of a single market made the EU lagging substantially behind the U.S. in terms of productivity, growth, innovativeness, etc. Just as an example, when it comes to legislation on concentration, the U.S. has been less rigorous than the EU.

Is the match between the two approaches actually possible?

Renewed interest in industrial policy in the academic circles, but with very little reaction on the policy level, emerged at the turn of the century. It was only at the onset of the global economic crisis that the emergence of new initiatives in the field of industrial policy announced the big comeback [26], [27], [36]. It was a reaction to the first signals of China's growing economic power. Today, low growth and high unemployment stand as the main reasons for the renewed interest in industrial policy, particularly in the EU [3]. Also, a more proactive policy approach as compared to the horizontal industrial policy

is needed. The new approach is supposed to solve the long-prevailing dichotomy between the vertical and horizontal approach. Namely, the new approach is supposed to be an amalgam of the previous two, keeping the broad range of horizontal measures while simultaneously echoing the old type of industrial policies (*via* regional cluster programs, for example).

Washington Consensus was celebrated globally, promising that the rest of the world would enjoy the progress experienced in the countries that gave birth to this neo-liberal doctrine. Unfortunately, all across the world, the Washington Consensus mostly brought disappointment. This is particularly true for catching-up and developing countries where market-oriented reforms were taken the farthest, and the disappointment with the outcomes was accordingly the greatest [33]. From a developing economy's perspective, there was a fundamental problem in the implementation of such approach. No developing economy has ever grown rapidly from poverty to riches by using postulates offered by the neo-liberal policy platform. Namely, developing economies do not have the adequate density of relevant private, industrial and financial organizations due to a lack of managerial skills to take advantage of the proposed setting [13].

As Rodrik [33, p. 28] noticed, despite the fact that the Washington Consensus firmly renounced industrial policies, they have run rampant during the shiny decades of liberal capitalism, and nowhere more so than in those countries that gave birth to the Washington Consensus and put in a great effort to promote it and implement it in the rest of the world. If somebody still believes that industrial policy was dead during that time, it is because it went by other names such as "outward orientation" and the like. This policy firmly supported foreign investments and exports, but from the already established winners. This is exactly one of the key reasons why the Washington Consensus did not deliver the desired growth on the global level, especially regarding income convergence and catching-up. Subsidizing already successful companies can do very little to enhance the overall productive and technological capacity. Similarly, there have been very little evidence of positive technological or any other spillover from foreign direct investment [18], [33].

Industrial policy is closely tied with regional policy, education and training policy and finally, yet most importantly, with innovation policy. There are even thoughts that the new industrial policy has been recently transformed in the direction of innovation policy (including social and environmental innovations). We are not prone to claim so, but it is true for a number of countries. The U.S. industrial policy focuses on science and technology, small firms and clusters [25]. Industrial policy in Finland targets the unknown, frontier technologies defining competitive edge in the future. It is proactive by nature, making the technological entrepreneurship the main driving force of transformation [38]. In the UK, the attraction of the FDI always dominated in the industrial policy [6]. Japan has now placed its focus on the linkages between business and science [28]. Innovation is becoming the main pillar in Chinese industrial policy [20]. Obviously, the world is changing, and the previous success stories will have no encore. At least not in a congruent manner.

Innovation essentially enables restructuring and productivity growth. For example, innovation in ICT triggered radical restructuring in many industries. As noticed in [33, p. 4], in the developing world innovation is constrained not on the supply side, but also on the demand side. It means that the countries do not lack good scientists, R&D labs or intellectual property laws, but the real constraint lies on the potential users' side – the business sector is short-sighted and perceives new activities to be of low profitability. The same goes for human capital. Depressed economic activity erases returns on better education and investment in human capital. Such is the case with Serbia.

Industrial policy's big comeback

Contrary to the expectations of the neo-liberal admirers, industrial policy has not seen its twilight. As demonstrated in various cases, industrial policy does not distort, but complements the market forces. Additionally, over the last period, industrial policy gained a new theoretical support for its pivotal role in economic development in the form of "new trade theory", "new economic geography" and the "new", as well as "evolutionary growth theory". These

new strands highlight the importance of scale economies, the importance of learning, the role of proximity and agglomeration, the quality of inputs, the role of formal and tacit knowledge and discovery and innovation [3, p. 314].

The ability of industrial policy to respond to the abovementioned challenges depends on the present level of economic development. The new industrial policy supports basic education, training and entrepreneurship in developing countries, promotes the FDI and exports in catching-up economies and merges with innovation strategies, cluster policy and dynamic competitiveness in high-income countries. The new industrial policy goes beyond market failures in terms of [33], it builds on economic laws, comparative and competitive advantage and changing specialization patterns [3]. Also, shifting of the labor focus from import-substitution to export expansion, through lifetime learning, is becoming an essential part of industrial policy [3], [30], [35].

The rationales for the industrial policy have changed since the time it first appeared. Globalization made most of the old rationales obsolete. Traditional vertical policies became difficult to implement due to trade agreements and laws, as well as due to international organizations such as the WTO. Also, favoring national champions, picking winners and "industries of the future" proved to be generally difficult and followed by failures [3, p. 312]. Yet, there is a growing recognition that in the last two decades the pendulum between policy autonomy and international rules may have swung too far in the direction of the latter [33, p. 35]. In addition to this, today's static market failures have less importance, but dynamic market failures, information and coordination externalities play an important role [33, pp. 8-14]. Dynamic market failures are particularly present in knowledge and technology-based industries. The rationales for industrial policy are related to first-mover advantage, experience curve and capacity building. Furthermore, there is a need for each country to intervene in favor of "strategic industries", for which it is important not to rely on import, but to have own products, such as energy and water.

Diversification is a consequence of experimentation and cost discovery that result in new profitable areas of production. In principle, it is up to businesses to do this job but in reality, it remains unfinished for a very logical reason. Revealing information about new profitable areas of production produces widespread social effects, but brings poor remuneration. On the other hand, the risk is completely held by the entity that conducts this cost-discovery experiment. This perverted relationship between risk and return and between risk/return for business and risk/return for society is at the heart of market failure in the form of informational externalities that prevent the discovery process and diversification of economic activity.

Market prices cannot reveal the profitability of allocation of resources that do not exist yet. Hence, the uncertainty about what new product could be produced profitably constitutes a key obstacle for economic restructuring. These externalities are a firm reason to believe that diversification, in the sense of economic development, is unlikely to take place without directed government action [33, p. 8].

How do governments deal with market failures and consequent externalities that hinder potentials for growth? As D. Rodrik [33] suggests, the first-best solution is to subsidize those sectors and non-traditional activities that might end up as successful attempts. There is one extremely important constraint to this kind of solution – weak monitoring possibilities. R. Hausmann and D. Rodrik [19] recommended "the carrot and stick" approach. They suggest that subsidies, trade protection or provision of capital on one hand should be carefully followed by close monitoring and performance requirements on the other in order to make sure that unsuccessful projects are timely phased out. This holds for investments in new areas of production, but for the already existing sectors we suggest a different approach. Namely, subsidies and other forms of incentives should be tied to the achieved results, not to the activities performed.

To be honest, there is no way to achieve zero failure with the industrial policy program. Yet, what is critical is to have enough successful projects whose business results and social returns will surpass the losses undergone by the unsuccessful ones.

The other problem that the market has failed to deal with successfully refers to the coordination of externalities. More often than not, projects aimed at fostering economic

position and competitiveness of national economy require investments in infrastructure, logistic support, initial marketing and so forth. These upstream and downstream investments assume high sunk costs that the private sector entities do not have capacity or willingness to sustain. Just as in the previous case, the problem grows bigger if industrial policy measures are aimed at new activities and diversification of production structure within the economy. In the case of well-organized clusters and/or powerful players, the role of government support could be less significant. However, the appropriate policy measures are not focused on sectors or industries, but on the activities and technologies that have the potential to produce a coordination failure [33, p. 14].

The main argument for the industrial policy is not the claim of superior knowledge of the government, but the limited knowledge about the size and nature of externalities on the side of both economy and the government [33].

Real-world industrial policies more often than not deviate from theoretical concepts. Aiginger and Sieber [4] explore different approaches to industrial policy set of measures in European countries and find that it is possible to distinguish the countries based on three important characteristics: a. implementation of the old approach based on subsidies (state aid), b. the single-market strategy of deregulation and opening the markets and c. the future-oriented approach of fostering innovation. Placement of a country in either of the groups turns out to be in a firm correlation with the outcomes, such as high shares of sophisticated industries, quality of education and macroeconomic performance [3] and [29].

Small northern European countries belong to the first group (Sweden, Finland, Denmark). They invest heavily in research, education, information technology and lifelong learning. These countries spend little money on state aid and their regulation of product and labor markets can be characterized as low-to-medium. As expected, the outcome of this policy is a high share of technology-driven and skill-intensive industries.

Large continental countries belong to the second group (Germany, Italy, France). They spend more on state aid. Regulation is medium to high. Even though some of them have moderate-to-high level of R&D expenditures, these countries are lagging behind in terms of dynamics of research expenditures, while lifelong learning, broadband penetration and ICT expenditures are below the EU average.

The third group is reserved for small continental countries (Belgium, Austria, the Netherlands). These countries record low expenditures on state aid. They engage in administrative regulation (license and permits systems, sector-specific administrative burden etc.), but less in economic regulation (public enterprises regulation, antitrust regulation etc.). These countries are short of venture capital and have a low share of science and engineering graduates. They occupy a moderate position in research and a slightly better position in the ICT. The share of technology-driven and skill-intensive industries is smaller than it would be expected from the high levels of GDP per capita.

The last group is made of South European countries (Spain, Portugal, Greece). These countries spend abundantly on state aid and have rather strict regulations and low levels of investment into the future. The share of sophisticated industries is low.

It is not difficult to identify a matching group for Serbia. By all means, Serbian economy resembles those in the last group. However, for every future-oriented strategy, there are two key ingredients. First, the understanding of the current position, and second, a clear picture of the desired future position. Moreover, when there are past experiences and a history of failures and successes in the picture, the industrial policy is no longer a matter of ability, but the question of will and courage. It is difficult to expect that Serbia could catch up with the countries in the first group, even in the longer run. But it is a picture worth striving for. Besides, the previous analysis provides enough information for policymakers to build a step-wise platform of activities and measures that will bring Serbia closer to the long-distance vision, the transition of existing brokerage society into the knowledge based society.

Industrial policy program for Serbia

As D. Rodrik noticed [33] there was a time when economists believed that only visible hand of the government could save the economy from poverty, and, after, a time when

economists started to believe that only invisible hand of the market could lead the economy towards growth and prosperity. The reality invalidated both sets of expectations. Namely, apart from some exquisite examples, more often than not both of these extreme approaches produced results that fell well below the expectations. It now seems that economists need to accept that only a handshake thereof can produce valuable and sustainable results.

The way in which industrial policy is conceptualized and formulated should depend primarily on the economic situation in a particular country, but also on the current level of economic development. As J. Imbs and R. Wacziarg [21, p. 64] noticed, there is a very predictable pattern in the process of economic development of a country in terms that, starting from the lower level, as a country's GDP per capita grows larger, the economy moves from specialization based on comparative advantage toward a more diversified economy in terms of sectoral production and employment. This goes on the late stages of the development process. Namely, only after reaching higher levels of GDP per capita (around USD 50,000), an economy shifts toward specialization again, and production becomes more concentrated. Hence, increasing specialization is reserved only for high-income countries, and most of the countries diversify most of their path of development.[1] The previous finding is entirely inconsistent with the principle of comparative advantage as a driving force of economic development. This is an extremely important notion for Serbia as a middle-income country.

As a country whose government happily embraced the Washington Consensus after 2000, but which first hesitated and then forgot to reinforce one important detail, proper institutional setting, Serbia suffered a double loss. Firstly, it did not enjoy (modest) fruits that neo-liberalism brought to certain developing countries, (Slovakia, for example), and secondly, it did not provide support to the real economy, which is something the Washington Consensus was never meant to provide for, even in its purest form of implementation. Just as any other country that strived to reach a full-fledged market economy following the well-known blueprint, Serbia put in an effort to attract foreign investors and provided tax holidays, as well as direct subsidies (almost exclusively) to foreign companies. By doing that, the strategically shortsighted politicians undermined the foundations of the national economy. Just as we mentioned previously, government support to the FDI, as well as to the already successful business players, does not produce virtually any productive or technological spillover, nor does it create grounds for higher economic growth rates and sustainable development. It might soften the unemployment problem in the short run, but it does not solve the problem of unsustainable growth.

Just as any business strategy, industrial policy requires a vision of future development of the economy, analysis of the key competitive strengths and weaknesses and the desirable position, taking into account that other economies, as well, are striving to improve their positions in the global market. The main objective of the industrial policy is to enable dynamic competitiveness of the national economy. Dynamic competitiveness is the ability of a firm or a country to increase economic growth, to make use of and to develop available resources [2], and to comply with the long-term objectives of a circular economy (economic growth, social cohesion and environmental responsibility) [3].

In 2005, the European Commission released a concept of the industrial policy that complements both the horizontal and vertical approach, broad measures in line with sector-specific actions [5] and [39]. The essence of the new approach is that although industrial policy should maintain its horizontal nature and aim to promote the framework conditions necessary for competitiveness, the specific needs and characteristics of individual sectors must also be taken into account. It is acknowledged that the impact of horizontal policies on specific industries will vary, and that complementary measures, differing across industries, may be needed [4] and [3].

Following the above mentioned ideas, when formulating the industrial policy set of measures, the output could be presented in the form of a matrix. In our case, columns represent individual sector policy lines, while framework

1 The U.S. enjoys the highest level of productivity with a very specialized industrial structure [25], and specifically successful Scandinavian countries are also specialized in quite a few knowledge and technological-intensive industries [3].

policies define the rows. We decided that, for the sake of allegory, rows should represent horizontal policy measures, while columns should demonstrate priority sectors representing vertical policy measures. In both cases, cells of the matrix show whether a certain policy is important in the specific sector and how it should be implemented.

The manner in which sector-based industrial policy is implemented historically depended on the conditions existing in a particular industry. As demonstrated in [8, pp. 215-219], there are three situations, one referring to the existence of powerful industrial actors, the established "national champions" the state wishes to bring under its influence, the other referring to placing under control politically destabilizing lame ducks, and lastly, the situation of absence of industrial actors in the sector observed as having strategic importance for national independence which represents a terrain for the so-called "grand projects". It should be remarked, however, that the old type of sectoral policy as we know it no longer enjoys support due to external constraints in the form of regulation, as well as due to poor potentials for success. However, even the regulatory bodies such as the WTO predict situations in which a country is allowed to take "safeguard actions" in order to protect domestic industry from an import which is causing or threatens to cause an injury to the industry (national security, fair competition, macroeconomic reasons, etc.) [33, Appendix 3].

The new sector-based policy as such is not discriminating and must be future-oriented, with time-restricted focus on those industries where investment generates the highest impact on the value added [3, p. 316]. Thus, sectoral policy will never be abandoned, and there are strong reasons to believe that leaning on the existing strengths and capacities of the national economy is much less costly than supporting everything or trying to build new capacities from scratch. Furthermore, the Ministry of Education, Science and Technological Development has to formulate research and innovation strategies that specify priority areas, as is the case in the EU (the EU technological platforms). Even though in essence it is not a sectoral policy, it actually is an approach that leads to discrimination between fields.

Having in mind all of the abovementioned, we created a matrix with joint horizontal, as well as sector-based vertical measures, where sector-based measures are closer to the traditional vertical policies in case of strategically important sectors with high potentials, while in other cases they merely mean having in mind the sector's specifics in the implementation of the horizontal measure (see Table 1). Rodrick [2004, p. 3] states that once we design proper framework, we should not worry about suggesting a proper measure or choosing priority sectors. Although we do not disagree entirely, we think it is important to provide a restructuring program which is as comprehensive as possible.

We decided that horizontal measures should be divided into six blocks:

1. Horizontal measures focusing on knowledge enlargement (research and innovation, skills, trainings, etc.)
2. Horizontal policies providing better access to finance
3. Horizontal policies providing better regulatory framework
4. Horizontal policies providing better conditions for export
5. Horizontal policies focusing on environmental protection and green energy
6. Horizontal policies enabling structural changes

The matrix shows the most important policy measures required to stipulate growth in a particular industry given its specifics and current conditions. The industries are selected carefully with the genuine belief that they truly represent the key fulcrums of sustainable growth in the future. Our analysis is very much in accordance with the research results given in [7]. As the table denotes, the majority of the selected sectors belong to the field of manufacturing.

The situation in manufacturing in Serbia resembles rather that of the high-income countries. It is true that starting from the 1980s, most of the countries in the world experienced a decline in GDP's share of manufacturing. The decline was the sharpest in the high-income export-oriented countries. For example, in the U.S., the share of manufacturing dropped form 19.3% in 1980 to around 12.1% in 2006, and in the EU15 from 23.5 to 15.6% during the same period [3, p. 301]. There is a very logical explanation for this. Namely, services have higher income elasticity and thus have a rising share in the rising GDP, along with

Table 1: Industrial policy measures: A matrix approach

POLICY MEASURES		ICT	Organic food processing	Life science	Health tourism	Energy	Transport & Logistics	Wood & furniture	Textiles & Fashion	Agriculture	Metal industry	Automotive
KNOWLEDGE	R&D/Innovation	X	X	X		X		X	X	X	X	X
	Basic Education	X	X					X	X	X		X
	Higher education	X	X	X	X						X	
	Skills		X	X	X	X	X	X	X	X	X	X
ACCESS TO FINANCE	Development bank		X	X	X			X	X	X	X	
	Subsidies		X							X		
	Venture capital	X		X		X			X		X	
	Government bonds					X	X					
	Credit guarantees	X	X		X		X					X
CONCEPTUAL FRAMEWORK	Admin burden	X	X	X						X		X
	Laws and regulation	X	X	X	X	X		X				
	Technical standards	X	X	X							X	
	Tax credits	X	X	X	X				X	X		
EXPORT AND TRADE	Access to market	X	X		X			X		X		X
	Access to raw materials		X					X			X	X
	Trade distortions, dumping								X	X		
	Competitive market					X			X			
ENVIRONMENT AND ENERGY	Climate change					X		X				X
	Waste		X			X		X		X	X	X
	Water		X			X			X	X		
	Air					X	X					X
	Energy		X			X	X			X	X	X
STRUCTURAL CHANGE						X	X	X	X			X
PHYSICAL INFRASTRUCTURE			x		x		X			X	X	X

Source: Author's work based on [39].

economic development of the country and population ageing. On the other hand, technical progress reduces manufacturing costs, keeps the prices down and hence, the share of manufacturing in GDP, as well. However, medium-income countries from the Visegrad group maintained their manufacturing share at around 20% of GDP, which is comparable to Japan. There is, therefore, no logical economic reason for the declining manufacturing share in Serbia [11, p. 4]. Moreover, the GDP level in Serbia has never reached its 1980s level, which removes the development argument out of the picture.

Therefore, the decline in manufacturing in Serbia represents rather a structural imbalance than the expected consequence of economic laws on the path of development. It is a structural imbalance that cannot be banished by the invisible hand. On the other hand, the arguments in favor of a more planned and well-organized support toward manufacturing are all but few. Generally speaking, in any given country, manufacturing is the key to exploiting the new knowledge economy. In the EU, over 80% of R&D expenditures are disbursed on manufacturing [39, p. 286]. Furthermore, the impact of manufacturing on export is extremely significant. Just like in the EU, manufacturing in Serbia dominates the current account; 90% of exports comes from the manufacturing sector. Also, manufacturing makes intensive use of inputs from other sectors, including services, thus accelerating the overall economic activity in a country.

To start with the first column, the ICT is perhaps the only industry in the world (apart from food and

beverages) that calls for prudent policy to support its activity growth in every corner of the world. As we elaborated several times before, Serbia possesses certain distinctive strengths in this area, which could result in a firm and sustainable competitive advantage in the global market [12] and [13]. Since it is a technology and knowledge-driven industry, the first block of policies focusing on research and innovation is maybe the most important. In other words, the scope of state aid should be increased to cover various aspects of the innovation process. Also, public R&D projects are welcome every time resources appear. Basic, as well as higher education must reflect the country's commitment to the digital era. Creating favorable grounds for an industry to flourish also implies lifting the existing burden. It means no excessive red tape, a favorable and stimulating regulatory environment, as well as tax relaxation.

Despite being one of the main pillars of future social and economic development, it is difficult to expect that the ICT is going to be the main growth engine. Hence, other sectors deserve to get equal attention.

Organic food is a great opportunity for Serbia's agriculture and food export in the highly competitive European food markets, as well as a prerequisite for competitive advantage in tourism. Appropriate policy in this sector creates a basis for support that results in more resilient and sustainable systems of organic food production. Also, a broader use of innovative tools from the ICT field could improve the production of high value-added products in the organic food value chain. Industrial policy supporting organic farming, particularly in dairy and food systems, is also critical for the development of rural areas and related regional and demographic policies. Providing access to finance, as well as better regulation, are the challenges for further growth of this industry. It relies upon continuous adaptation to changes imposed by external regulations, while at the same time ensuring health and quality standards. One way to shape government support to this sector is financing the feasibility studies for organic agriculture.

Key challenges in life science, being a highly innovative industry, refer to R&D, protection of intellectual rights and financing the innovation for highly innovative SMEs [39, p. 289]. Regarding the last challenge, venture capital funds targeted at technology development could be created. Also, other mechanisms for higher risk finance should be developed, for example, development banks, public venture capital funds and government guarantees for longer term bank loans. Public R&D project are also a great potential for the life science sector in Serbia.

Unlike some other key sectors, when it comes to health tourism, skill shortages are not an issue. What lacks is a clear infrastructure for conducting activities and joint promotional activities on the international level. Also, the government should help by providing access to the global market. This includes formulation of a market access strategy, as well as instruments to focus on the markets with the greatest potential for strengthening competitiveness [39, p. 292]. The other strand in health tourism refers to the old spas. The performances in this segment are still at a very low level due to inadequate regulatory framework and mismanagement, but great potential exists. However, unlocking this potential requires transformation of the traditional concept of spas in Serbia into the new concept of health tourism based on medical and wellness tourism. Health tourism should be based on new technologies, particularly in the area of life science and pharmaceutics.

The energy sector has always been an infrastructure for sustainable growth. However, the rising awareness of the importance of climate change and urgency for decrease in greenhouse gas emission, results in the rising number of regulatory documents which aim at achieving a cleaner and more sustainable energy in the future. As in other sectors, technology will play a vital role in addressing sustainability of nature. Carbon capture as well as carbon and energy storage technologies will definitely be embedded in the future policy framework, tackling Serbia's energy initiatives as well. Emission Trading Schemes are just one part of it. Consequently, a comprehensive policy framework for the energy sector must adhere to the previous limitation, but at the same time, provide foundations for future investments (feed-in tariffs, for example). Restructuring of the strategic sector from the state companies portfolio towards emancipation is one of the Government's big tasks in the near future. Also, growth and competitiveness of

the energy sector could be supported in various ways. Financing feasibility studies for green energy as a state's share in PPP is just one example. Finally, yet importantly, in the period of scarce and expensive financial resources, potentials for bringing together the necessary means for investing in big projects in the energy sector, as well as a way for mobilizing national savings, lie in government bonds issued in the domestic market [10].

In transport and logistics, the main challenges are to develop a physical infrastructure in order to reduce bottlenecks and to modernize and improve efficiency of the existing infrastructure. Also, a great priority is the facilitation of access to the railway and post networks to strategic investors. Air transportation gains an increasing importance. The Government should therefore think of a possibility to develop a service cluster around the expansion of the national airports. Also, just as in the case of the energy sector, government bonds issued and aimed at domestic savings could be a way to provide necessary resources for large-scale infrastructural investments with prevailing domestic components.

Fashion and design industries include textiles, clothing, leather, footwear and furniture. These industries account for 12% of Serbian export. The key challenge is to make successful structural adjustments in order to move up the product quality ladder. Since these industries predominantly belong to the private sector, special funds could provide support to this type of change.

Skill shortages are a major challenge for the agriculture sector. This refers to management skills, above all. The government could play an important role in this regard by providing various training opportunities to those engaged in agriculture, be it employers or employees.

Metal industry in Serbia deserves special attention for various reasons. Lack of resources to undertake higher levels of R&D and innovation to protect and enhance the competitive position is one of the key problems in this highly competitive industry in Serbia [7]. However, in case of increasing the innovativeness of the industry, the lack of highly skilled workers required to operate new technologies and to drive innovation would emerge as a new weakness. Consequently, there has to be more agility in the education segment in order to be prepared for the future changes. Also, access to raw materials and firmer linkages with downstream suppliers in Serbia could be orchestrated by the Government.

Research and innovation on one hand and access to finance and availability of investment on the other are perhaps the key drivers of competitiveness in the automotive sector. Also, it is necessary to identify all the skill gaps in Serbia in order to maintain, as well as to attract the FDI in the future. Environmental, as well as energy challenges in this sector are great, and the Government could make room for support in these specific areas.

The emphasis on research, innovation and access to finance, as well as the density of the suggested measures in the matrix in the case of industries such as ICT, life science and organic food, on one hand, and the emphasis on structural adjustment in traditional industries such as energy, transportation and logistics, on the other, illustrate the difference between growing industries of the future and the troubled industries of the past.

Based on the previously presented matrix, we can conclude that the overall industrial policy of the country covers three interrelated elements.

Firstly, a purely horizontal approach, which means the creation of a generally favorable framework of conditions with the purpose of fostering development of competitive and innovative enterprises [39, p. 286]. Competition policy, innovation policy and R&D policy are all meant to achieve this purpose. The regulatory framework should stimulate innovation, provide stability for R&D investment and encourage development of new and more efficient business models. Creation of some sort of coordination council [33] can also serve to the same goal. The purpose of the council is to seek out and gather information (from the private sector, academia etc.) about investment ideas, to achieve coordination between different government offices and agencies, to push forward the changes in legislation or even to generate subsidies and other forms of financial support and so forth. Very importantly, the regulatory environment has to stimulate technological entrepreneurship in micro and small enterprises. The third block of this kind of measures refers to government support and organization of bilingual trainings, encouraging lifelong learning and the like.

Secondly, a combination of horizontal measures with sector specifics, which means optimizing sectoral framework conditions. Feed-in tariffs in the energy sector are an example of an adaptation of the regulatory framework to the individual sector.

Thirdly, a sectoral approach where market failures due to information or coordination externalities inhibit potentials for growth. Public R&D in life science and feasibility studies in organic production are just some examples. How to solve the information externality market failure? Clearly, by subsidizing the cost discovery process. In order to distribute the funds correctly, this should be organized in the form of a contest in which private-sector companies bid for resources by submitting pre-investment proposals [33].

The type of policy measure and approaches used depends essentially on a country's own circumstances. However, what is interesting is that it might appear to be true that, in countries where it is already conducted, the industrial policy could be rendered more effective by actually reducing its scope [33, p. 32]. Thus, narrow sectoral policies could prove to be of great value even though there is not much support for this concept in the professional circles.

Conclusion

The visible hand of the state has so far taken a baton each time the economy diverted from the growth path. However, managed capitalism has too often been equated with centralized planning in the communist countries as the great evil necessary to be forgotten and displaced from the economic policy regime list. However, after it became evident that the neo-liberal policy brought disappointment more than anything else, at least when it comes to real economy, in developing, as well as in some developed countries, government support in providing necessary structural changes and in paving the way toward sustainable circular economy reached the top of the economic policy agenda.

For the industrial policy to be successful, it is important that the government cooperates with the private sector in an ongoing relationship, but at the same time to keep the private sector at an arm's length so as to minimize possibilities for rent-seeking and corruption. The delicate balance between autonomy and embeddedness is labelled as "the embedded autonomy" [14]. As noticed in [33], the task of the industrial policy is as much about eliciting information on significant externalities and their remedies from the private sector as it is about implementing appropriate policies. Also, much more important than looking for the right policy instruments and modalities of interventions is to put a process in place which helps reveal fields of desirable interventions. In that sense, industrial policy is a particular state of mind for politicians and statesmen, more than anything else. Another point worth remarking is that industrial policy is much more than shaping the desirable framework and then sitting back to wait for the results. It requires an ongoing agility of all relevant stakeholders and experts in economics, business, education, social affairs, as well as environment [3, p. 318].

The essence of the approach presented here is that although industrial policy should maintain its horizontal nature and aim to promote the framework conditions necessary for competitiveness, the specific needs and characteristics of individual sectors must also be taken into account. Hence, we followed the matrix approach where horizontal measures are intersected with the key sectors' requirements. We wanted to offer a framework and key measures for conducting an industrial policy that would contribute to Serbia's economic growth and sustainable development. The aim of all the studies conducted jointly with Professor Đuričin was to propose ways for Serbia to reach a favorable position within the corridor of possible developments in the future [10], [11] and [12]. We should learn from the past that the focus of the analysis is not to be on policy outcomes, as they can hardly be predicted and depend on numerous uncontrollable factors (unknown unknowns), but on setting up the proper framework and processes for policy implementation.

The program laid out above might seem too unrealistic from today's standpoint. To the contrary, it is not unrealistic; it is the only way forward. It is an agenda for economic policies with already demonstrated results that takes an intelligent intermediate stand between the two extremes:

market-oriented platform and government interventions [33]. Another important point for policymakers raised by Aiginger [3, p. 314] is that comparative advantages themselves are not static. What the Serbian economy does well in the present might not be what it will superiorly do in the future. The research base and knowledge could be developed and enlarged, and comparative advantages, spillovers and positive externalities could be shaped and increased.

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