European Union as an Industry Leader? Positioning European Union Industrial Policy in Danube Regions Reality

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Abstract The world is rapidly changing. Impacts, ranging from technological innovation to health challenges the global economy. The EU has faced industrial policy struggles, lagging behind the USA and China in its industrial competitiveness. In 2021, the EU launched a plan to revive its industrial policy through a green and digital twin transition. The key question of the presented discussion is how are Danube region countries positioning themselves in relation to current EU industrial goals of twin transition. A tentative conclusion suggests that reindustrialisation, aligned with EU policy, is contributing to positive developmental opportunities, especially for competitively intermediate countries.

Keywords: • European Union • industrial policy • reindustrialization • social fields • Danube region • country performances

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1 Introduction

The starting point of the present discussion is the communication on the industrial strategy of the EU, as one of the tools to significantly increase the competitiveness of the EU (Renda, 2021) and particularly individual member states since the EU is an entity of broad differences; in (Pandiloska Jurak, 2021). In this context, special emphasis is placed on the Danube region as one of the most diverse regions of the European Union when it comes to economic development. The process of the "industrial renaissance" (Renda, 2021) or in other terms, the re-industrialization (Besednjak Valič et al., 2023) is understood as one of the main processes to achieve the goal of increasing the competitiveness of the Danube Region.

The industry was, on many occasions contextualized and in many public narratives associated with heavy environmental impacts. Due to this, we have, in the past decades, seen much offshoring as a way of pushing the question of pollution to less developed nations – a process we can associate with the so-called "not in my backyard" mentality. Nowadays, the narrative seems to be changing and industry is getting associated with innovation and knowledge (Camarinha-Matos et al., 2019) gaining more favorable public views (Heymann & Vetter, 2013). This process of re-imagination can be sociologically understood, also as the process of changing the imaginary (Sum & Jessop, 2013). The nature of change is triggered by the crisis which challenges the main narrative and we are now facing the crisis (Sum & Jessop, 2013), delivering it through to main global trends therefore the narrative is in a phase of changing. The imagination of industry as something dirty and environmentally unfriendly is now changing into an imaginary of industry where knowledge, innovation, sustainability, and environmental protection are at the forefront. This purposeful change of narrative should be supported by the strong role of the government (Aiginger & Rodrik, 2020), ensuring framework conditions for the change. At the same time, the government must ensure the establishment of services to monitor the success of the transition. But is it possible to steer the developmental performance through strong industry policies? According to Lane (2020), the evidence is scarce yet promising. Rich retrospective cases, collected data, and institutional details should contribute to understanding whether policy interventions in the field of industry are successful (Lane, 2020). Research shows the public narrative (Makarovič, et al., 2014) and consequential political legitimacy (EPSC, 2015) also plays a role when it comes to the success of a particular policy (Makarovič et al., 2014).

However, it seems that the European Union was not very successful when it comes to medium-term growth and development strategies (Renda, 2017), as it always seemed, the targets and ambitions of EU and member states were not always aligned with the daily practice of policymaking (ibid). The Lisbon agenda never materialized, Europe 2020 agenda also, and today the EU puts forward another ambitious agenda, this time in line with the UN Agenda 2030 and the Sustainable Development Goals (Gregersen et al., 2016) by placing the person and their inherent dignity (Kleindienst 2017; 2019;

Kleindienst and Tomšič 2018; 2022) at the heart of development efforts. Today, the focus of the European Commission goes to "competitive sustainability" and the implementation of the Sustainable Development Goals (Fric et al. 2023; Fric, O'Gorman, and Rončević, 2023; Fric, and Rončević 2024). This should be done through a twin transition via European Green Deal (Renda, 2021).

Having said all that, the research problem of this discussion follows the logic where each individual member state has to transform its industries to reach the goals. Within this, we adopt a path dependency view where we assume the path set forth towards the development is inevitably interrelated with the level of industrial development individual member states currently exhibit. In this frame, we are interested whether the countries of the Danube region have the potential and the capability to successfully transition to what is understood as a sustainable and resilient industry. As elaborated above, this transition is interlinked with the process of re-industrialization. The main research questions are therefore: RQ1) What are the prospects of individual Danube region countries when it comes to positioning the EU industrial policy goals into their current country performances? and RQ2) Can the reindustrialization encompassing the current stream of the EU industrial policy in any way, contribute to successful developmental opportunities?

2 The need for an industrial renaissance?

As noted by Besednjak Valič et al., 2023 several EU countries deliberately diverted from industrialization, strongly supporting services sectors, particularly tourism. It is Spain and Greece, particularly stand out as the dominant cases. For those two countries, the evidence shows, throughout the past years, neither of them is progressing in terms of increasing GDP per capita (see also Pandiloska Jurak 2024). The logical conclusion to this is that orientation towards the service sector with little value-added does not contribute towards increase in GDP per capita. To support this argument Besednjak Valič et al. (2023) mention countries like Ireland, Poland, Czech Republic, Bulgaria, Slovenia and Slovakia as countries with increase in industry shares in GDP who are also experiencing GDP growth per capita. Furthermore, the countries who seem to preserve a part of industries and did not divert to full service sector seem to be prospering the most out of the given situation as Heymann and Vetter (2013) claim. Furthermore, they note the decline in shares of manufacturing GDP until 2013 is detected in all the countries except Germany (Heymann & Vetter, 2013). Economic success of the country is connected to industrial activities in the past years has changed public attitudes towards more positive ones (Camarinha-Matos et al., 2019).

Based on this, we can relate some particular social trends, speeding up the process of industrialization. It is not only the economic success per se especially related to the jobs creation (Besednjak Valič et al., 2023), and overall well being connected to it, but there are also some other trends related predominantly to digitalization, sustainability, and

nature preservation related. The most appealing technological advances, which are getting connected to industrialization are automatization (robotization) and advanced manufacturing. Other applications of advanced manufacturing, like 3-D, printing and artificial intelligence are contributing to increased value added, and making production not only more efficient and flexible, but also more cost effective. The principles of advanced manufacturing are inevitably connected with the customization of products. The second social trend underpinning the speed of the industrialization is the overall turn of the society towards sustainability (Džajić Uršič, 2020; Fric, 2019) and more detailed towards the processes of circular economy (Džajić Uršič & Rončević, 2017; Uršič & Jelen, 2022) and industrial symbiosis as business model to support the strive for the sustainability (Boshkoska et al., 2018). Digitalization is another social trend, which is not only supporting the re-industrialization, but it is the main tool to achieve it as digitalization is at the core of the twin transition. The process of digitalization signifies the increasing usage of digital on several levels within and outside the organization. Digital transformation can help optimizing business processes, but also optimizing the logistics and supply chain management in fields ranging from finance to health. Mentioning things optimization through digitalization one has to notice the momentum that has occurred after the experience of the COVID-19 pandemic. Namely, as the global supply chains (Gangaliuc, 2022) were hindered in the period between 2020-2022, this has led to an increased interest in restoring production, considering the variance with industrialization and the legacy of several Danube region countries, the particular countries have understood the nature and the potential for economic growth and development through the processes of reindustrialization.

There are several trends that are supporting the industrial transformation and re-industrialization, not only of the EU as a whole, but particularly as the Danube region. The Danube region traditionally faces vast developmental differences from the more developed west to the less developed east. The success in in the process, depends, not only on following the momentum (Camarinha-Matos et al., 2019), but also on the successful re-imagination (Sum & Jessop, 2013a) when it comes to shared imaginary on the role of industry in the EU society.

3 New actors in the processes of change

The industrial policies of present times need to promote the manufacturing as one of the modes to achieve growth and wellbeing (Aiginger & Rodrik, 2020). Adopting this narrative, the manufacturing needs to become associated with individual capabilities (skills), ambitions and also preferences. All mentioned should be intertwined with technological progress (Fric et al., 2020). Aiginger & Rodrik, (2020) promote the idea where industrial policy should systematically coordinate innovation, regional trade and manufacturing. Jointly with this, the communication from EU emphasizes the industrial policies supporting and promoting twin transition (digital and green) to enhance EU's strategic autonomy (COM, 2021).

To sped up the process of re-industrialization via twin transition the proper steering capacity is needed. The steering capacity is the skill to ensure the policy makers pursue domestic strategies efficiently (Yülek et al., 2020). It is too often seen grand strategies are not properly steered in the public narrative and as such, without potential to succeed. But who are the real actors of re-industrialization? The adoption of new technologies and digitalization, yes, but too neglected question is on who is the actor of re-industrialization? Should it be guided by old-industrial actors who, through investments in R&D, innovation and foreign direct investment contribute to re-industrialization? Or could local entrepreneurs through their past knowledge and skills, based on industrial heritage (Eisenburger, Doussard, Wolf-Powers, Schrock, & Marotta, 2019) take advantage of new technologies and be the drivers of re-industrialization?

Eisenburger et al., (2019) introduce the term of Making as the Small-scale, integrated design and production of physical goods, using low-cost equipment. This activity attracts polity policy attention as a potential means of encouraging, original manufacturing, entrepreneurship and innovation (ibid.). in this context authors introduce the term Maker entrepreneurship (Allan, 2014; Cavalcanti, 2013) where the actors, the Makers, recognize and adopt strategies building upon regional industrial capabilities (Eisenburger et al., 2019). This way, regional capabilities and incumbent firms typically present the baseline for new industries and new firms (Cainelli & Iacobucci, 2016). In this context we are adopting once again the view of evolutionary economic paradigm, much similar to path dependency ideas. The local industrial baseline forms the pool of knowledge that enables the innovation and stems new firms, contributing to re-industrialization of the ecosystem. Old industrial specializations therefore inevitably shape new emerging firms and industries, where the latter do not only benefit from existing knowledge (through processes of knowledge transfer) but also benefit from work experience and professional networks embedded in related industries. In the presented context the Makers rely on novelty and own inventiveness, districting their work from prior modes of manufacturing. The distinction is predominantly technological, as they rely on small-scale process technologies, novel fundraising, and marketing platforms (Eisenburger et al., 2019). As it was historically manufacturing connected to high technology costs, the technologies are nowadays more affordable than event – from cheap 3D printers to computer numerical control mills (CNC) to cloud-based modelling software that is available for monthly subscription (ibid). Such technological availability severely reduced the obstacles outlined for the entry to manufacturing market (see also Browder, Aldrich, & Bradley, 2017). In this way technological innovation and diffusion contributed to making manufacturing more democratic - accessible to wider number of actors. As research show the legacy manufacturers play a key role in the entrepreneurial ecosystems (Wolf-Powers, 2005), the same goes for Makers who successfully scale up into economically significant manufacturing enterprise (Eisenburger et al., 2019). It is up to the policy makers to recognize the potentials of both and establish framework conditions for regional innovation system to evolve in a way where both can co-exist. Strategic steering of

development is of crucial importance at this stage (see also Makarovič et al., 2014; Rončević & Besednjak Valič, 2022).

4 Methods and Data

It is difficult to define strictly whether a group of countries is ready for the transition. However, we can prepare a mental framework for assessment of such readiness. For the purposes of this chapter. We will prepare a short analytical overview of the current situation in different countries of the Danube region. We are fully aware that for a successful twin transition the re-industrialization seems to be a prerogative (for more on the process of re-industrialization of the Danube Region see Besednjak Valič, 2019). For successful re-industrialization and later twin transition, the existing industrial base is important. In the Danube region, the countries exhibit diverse industrial sectors ranging from automotive to electronics, including machinery (ibid.). Following the uneven, developmental stages of different venue provision countries, we inevitably note and even success rate in the process of re industrialization leaving some countries to develop faster than the others.

Our conceptual model for industrial reindustrialization will inevitably include elements as investment flows, skills of workforce, work-related pressures and general market framework conditions. We finally believe that these are the main elements of successful reindustrialization since we understand the processes re-industrialization as the process of changing the social field. The three main social forces need to be adequately analyzed and taken in consideration.

4.1 The three developmental stages of Danube region countries

The Danube region countries remain in the focus of our interest especially through the prism of understanding the dynamics of technology transfer (Besednjak Valič, Kolar, & Lamut, 2021) but also within the segments of understanding the dynamics of Development of cultural and creative industries (Besednjak Valič, 2022). Countries remain on the focus also through the development of innovation eco-systems and social fields (Besednjak Valič et al., 2023).

For the present research, we utilized the grouping of the Danube region countries to 3 competitively different groups. The grouping was first utilized in research by Besednjak Valič et. al (2022) and is based on the level of competitiveness for a particular country. The grouping follows the classification by Schwab (2018). The first group is the group of competitively advanced countries. The second group is the group of competitively intermediate countries and the third group is the group of competitively leading countries. The table 1 below, elaborates further, the countries belonging to each of the mentioned groups.

Table 1: Countries' grouping based on the level of competitiveness of the individual country

No.	Group according to Global Competitiveness Index (2018)	Country
1.	*competitively advanced*	Austria
2.		Czech Republic
3.		Germany (Baden- Württemberg)
4.		Slovenia
5.	*competitively intermediate*	Bulgaria
6.		Hungary
7.		Romania
8.		Slovakia
9.	*competitively lagging*	Croatia
10.		Bosnia and Herzegovina
12.		Montenegro
13.		Serbia

Source: (Schwab, 2018), own interpretation.

For each of the groups we will analyze the state of the art in terms of development of industrial policy, and readiness to participate in the processes of twin transition. This will be done through comparing the statistical data provided by Eurostat (EUROSTAT, 2023) We expect to find a distinct patterns between the countries belonging to each individual groups, and furthermore, we expect to find similarities between the countries of the same group and differences between the groups. This way we will be able to draw further conclusion on the developmental trajectories of the group and individual level.

To be able to structurally present the baseline of the countries we utilize the social fields theory, as developed by Beckert (2010) and frequently tested in similar settings when aiming to understand on how ecosystems function (see also Dubois & Méon, 2013; Rončević, 2012; Rončević & Modic, 2011; Rončević et al., 2022). Following the three dimensions of social field as a baseline for understanding the innovation ecosystem (Asheim et al., 2016) we further elaborate the three main social forces as characteristic of the social field that de-facto shape the topography of the social field. The interplay between the three forces contributes to stability and change. To understand the ground of the discussion we further elaborate the institutions, as main frameworks that guide the frameworks of action and further limit the scope of actions between the actors (Beckert, 2010; Besednjak Valič, 2022). Further, networks contribute to positioning the actors against one another within the field and outside the field (ibid.) where the cognitive frames provide necessary mental toolkit (Rončević & Modic, 2011) for individual actors who desire to get engaged in particular social field.

5 Results

5.1 Institutions: GDP per capita, purchasing power and productivity in industry

The table below demonstrates the state of the art in terms of defined institutions within the selected countries of the Danube region. As indicators for institutions, we selected the three indexes: Manufacturing production index, described as »*the industrial production index shows the output and activity of the industry sector. It measures changes in the volume of output on a monthly basis. Data are compiled according to the Statistical classification of economic activities in the European Community. Industrial production is compiled as a "fixed base year Laspeyres type volume-index". The current base year is 2015 (Index 2015 = 100)*« (EUROSTAT, 2023). The value of the index ranges from 140 as top value in 2nd half of 2022 in Slovenia, to 90 as the value of 1st half of 2023 in Montenegro. With cut off at 100 as the value for 2015, we note the consistent low values for Germany (97 and 98) on one hand and Slovenia with highest values (140 for 2nd half 2022 and 138 for 1st half 2023).

Second index is the GDP growth index, where »*gross domestic product (GDP) is a measure of the economic activity, defined as the value of all goods and services produced less the value of any goods or services used in their creation. The calculation of the annual growth rate of GDP volume is intended to allow comparisons of the dynamics of economic development both over time and between economies of different sizes. For measuring the growth rate of GDP in terms of volumes, the GDP at current prices is valued in the prices of the previous year and the thus computed volume changes are imposed on the level of a reference year; this is called a chain-linked series. Accordingly, price movements will not inflate the growth rate.*« (EUROSTAT, 2023). For the purposes of present discussion, we compiled the data in terms of calculating the 10-year average. This way, the EU average for 27 countries scores the 1,2% of average GDP growth rate, with lowest growth rate noted in Germany at 1,1% and highest growth rate noted in Hungary (3,3%).

Lastly, the third index is the GDP per capita in PP. The index is described as »*The volume index of GDP per capita in Purchasing Power Standards (PPS) is expressed in relation to the European Union average set to equal 100. If the index of a country is higher than 100, this country's level of GDP per head is higher than the EU average and vice versa.*« (EUROSTAT, 2023). Apart from that, the data presented serve only as cross-country comparisons, showing the Austria and Germany as the only two EU countries with purchasing power higher than EU average, with other countries below the mentioned average. For example, with Bosnia and Herzegovina on the lowest bar with 32 until Czech Republic with 90. Further details are available in Table 2, below.

Table 2: Institutions structuring Danube Region countries

	Manufacturing production index with 2015=100		**GDP growth**	**GDP per capita in PPS**
TIME	**2/2022 avg**	**2023 Avg until April**	**10year avg**	**10year avg with 2020=100**
Euro area – 20 countries (from 2023)	111	109	1,2	106
Euro area - 19 countries (2015-2022)	111	109	1,2	107
European union - 27 countries (from 2020)	114	112	1,4	100
Bulgaria	133	129	2,2	51
Czechia	119	118	1,9	90
Germany (until 1990 former territory of the FRG)	97	98	1,1	123
Croatia	110	109	2,1	64
Hungary	126	121	3	71
Austria	123	124	1,2	128
Romania	111	112	3,4	64
Slovenia	140	138	2,4	86
Slovakia	112	112	2,2	73
Montenegro	96	90	2,4	45
Serbia	122	123	2,3	41
Bosnia and Herzegovina	108	107	2,6	32

Source: (EUROSTAT, 2023), own calculation.

Following the grouping of competitively advanced countries, we can observe Austria, Czech Republic, Germany, and Slovenia: Czech Republic and Slovenia are overall performing above the EU 27 averages with the exception of the GDP per capita in purchasing power. We argue this is due to the fact the GDP per capita in purchasing power is calculated as a 10-year average. The exact opposite is the picture of Germany, where the GDP per capita in purchasing a power is, in fact, the only index where the Germany exceeds the EU 27 average. In contrast to all Austria is overall performing above the EU 27 average in all analyzed indexes.

Analyzing the performance of competitively intermediate countries we detect interesting results. The most interesting yes, the fact they exceed the EU 27 averages in 2 out of 3 indexes. The index, where they exceed the EU 27 average is the index on GDP growth. If the EU 27 value is 1.4 the most impressive values go for Slovakia are 2,2% and 3,0% for Hungary or even 3,4% Romania. It is worth noting all the countries are below the EU 10-year average GDP per capita in purchasing power. This situation is easily explained by the developing nature of the listed countries, therefore justifying their position in competitively intermediate group of countries.

Analyzing the performance of competitively lagging countries, we are able to detect some patterns. This particularly holds true for outperforming the index of GDP growth and severely underperforming the GDP per capita in purchasing power. On the other hand, an interesting result is noted for Serbia who is outperforming the indexes on manufacturing production. If the average for EU 27, reaches 114 for 2nd half of 2022, and 112 for 1st half of 2023 the index for Serbia reaches 122 for 2nd half of 2022, and 123 for 1st half of 2023. In time, it will be evident how much of these outperforming values are related to EU sanctions against Russia, which Serbia was not the part off.

5.2 Networks: inward FDI, outward FDI, FDI flows intensity in share of GDP

The table below demonstrates the state of the art in terms of defined networks within the selected countries of the Danube region. As indicators for networks, we selected the three indexes predominantly stating the levels of foreign direct investment: FDI flows intensity, the outward FDI and inward FDI, both in % of the GDP. All FDI related flows.

The index of FDI flows is defined as »*Average of inward and outward Foreign Direct Investment (FDI) flows divided by gross domestic product (GDP). The index measures the intensity of investment integration within the international economy. Data are expressed as percentage of GDP to remove the effect of differences in the size of the economies of the reporting countries.*« (EUROSTAT, 2023). The whole area of EU 27 member states, the value is calculated to 0,6 as average for the timespan 2013-2021. the results show, the flows are the greatest in Hungary (8,9% of GDP) with Austria experiencing the negative values of -2,0% as share of the GDP. All other countries of the Danube region seem to obtain the values above the EU 27 averages with Slovakia, reaching 0.3% of GDP and Czech Republic average reaching the value of 2.1%.

The outward FDI is defined as follows »*Foreign direct investment (FDI) is the category of international investment made by a resident entity (direct investor) to acquire a lasting interest in an entity operating in an economy other than that of the investor (direct investment enterprise). The lasting interest is deemed to exist if the investor acquires at least 10% of the equity capital of the enterprise. For this indicator stocks of FDI made outside the reporting economy are expressed as percentage of GDP to remove the effect of differences in the size of the economies of the reporting countries.*« (EUROSTAT, 2023). The 2013-2021 average for EU 27 is 117% of GDP, with Highest numbers reached in Hungary at 132% of GDP on one hand, and with lowest numbers reached in Romania with 1% of GDP. Unfortunately, the data for Montenegro, Bosnia and Herzegovina and Serbia are not available.

The inward FDI »*Foreign direct investment (FDI) is the category of international investment made by a resident entity (direct investor) to acquire a lasting interest in an entity operating in an economy other than that of the investor (direct investment*

enterprise). The lasting interest is deemed to exist if the investor acquires at least 10% of the equity capital of the enterprise. For this indicator stocks of FDI in the reporting economy are expressed as percentage of GDP to remove the effect of differences in the size of the economies of the reporting countries.« (EUROSTAT, 2023). The 2013 to 2021 average Of the EU 27, reaches 99% of GDP. Highest values are again reached by Hungary with 172% of the GDP and the lowest values are reached by Germany with 25%. Unfortunately, again, the data is not available for Montenegro, Bosnia and Herzegovina and Serbia. Reveals further interesting information with virtually all countries below the EU-27 average.

Table 3: Networks of the Danube Region countries

	FDI flows – intensity average 2013-2021	**outward FDI in % of GDP from 2013-2021**	**inward FDI in % of GDP from 2013-2021**
GEO (Labels)			
European Union – 27 countries (from 2020)	0,6	117	99
Bulgaria	1,6	4	81
Czechia	2,1	14	66
Germany (until 1990 former territory of the FRG)	1,6	43	25
Croatia	1,8	9	51
Hungary	8,9	132	172
Austria	-2,0	66	55
Romania	1,2	1	41
Slovenia	1,4	14	31
Slovakia	0,3	4	55
Montenegro	n/a	n/a	n/a
Bosnia and Herzegovina	n/a	n/a	n/a
Serbia	n/a	n/a	n/a

Source: (EUROSTAT, 2023), own calculation.

Following the grouping of competitively advanced countries, we immediately get surprised by the low score in Austria, where the FDI flows intensity reach a negative value of -2% of the GDP in the time span 2013-2021. On the other hand, it is Austria, who is experiencing far the largest outward FDI in percentages of GDP, reaching up to 66% for the same time span. Additionally, the inward FDI in percentages of GDP for the same time span reaches 55% of the GDP. In the group of competitively advanced countries, we can observe the positions of Slovenia and Czechia, where Czech Republic's inward FDI reaches up to 66% of the GDP. On the other hand, in Slovenia, this figure reaches 31% of the GDP. The countries are closer in the shares of the outward FDI, which, for both cases reaches 14% of the GDP. We conclude based on the given data that it is Czech Republic far more interesting for attracting foreign direct investment than

Slovenia. The Slovenian FDI flows intensity, reaches 1.4% of GDP positioning Slovenia near Germany, whose FDI flows intensity, reaches the value of 1.6% of the GDP. Germany's outward FDI reaches the value of 43% of GDP. Where is the inward FDI, in percentages of the GDP, reaches the value of 25%.

The figures on FDI movements, particularity the inwards FDI, in competitively intermediate countries are to some extent expected to be larger. The table 3 reveals the outstanding case of Hungary, where the average FDI flows intensity reaches a positive 8.9% of GDP. To add to this, the outward FDI in percentages of GDP reaches 132% and inward FDI reaches 172%.

The remaining members of the group of competitively intermediate countries struggle with the same problem. Due to their less favorably position in the developmental scale, the companies are not able to perform the outwards FDI, explaining the modest percentages of GDP for outwards FDI ranging from 1% in Romania up to 4% in Bulgaria and Slovakia. More promising are the figures on inward FDI in percentages of GDP, which range from 41% in Romania to 55% in Slovakia and 81% in Bulgaria. Comparing the FDI flows intensity, the lowest is in Slovakia with 0.3% of GDP, followed by Romania with 1.2% of the GDP, and lastly, followed by Bulgaria with 1.6 of the GDP.

Unfortunately, for majority of countries pertaining to the group of competitively lagging ones, the data is missing. Namely, we do not have any data for Montenegro, Bosnia and Herzegovina, and Serbia. However, we do have data for Croatia revealing rather high FDI flows intensity, reaching 1.8 percentage of GDP. The situation in Croatia is somehow similar to the situation as described above when speaking about competitively intermediate countries with low share of Croatian outward FDI flows with 9% of the GDP and higher shares in the inward FDI, reaching up to 51% of the GDP.

5.3 Cognitive frames: digital skills, work in high-tech sectors, work motivation

The table below demonstrates the state of the art in terms of defined cognitive frames within the selected countries of the Danube region. As indicators for cognitive frames, we selected the three indexes predominantly stating the levels of employment in high-tech sectors, the scope of basic or above basic digital skills, and self-perceived demand for work in high speed and tight deadlines. Each of the three indexes was selected to present the work conditions.

The index titled Employment in employment in high- and medium-high technology manufacturing sectors and in knowledge-intensive service sectors is calculated as a share of total employment. (EUROSTAT, 2023). For EU 27 the index reaches to 6,08% for a 10-year span. The data span is calculated as the average values of data from 2012 to 2022. The data reveals highest values in Czech Republic at 11,18% and Slovakia on the second place at 10,78%, both followed by Germany at 9.81%. The lowest values are noted in

Croatia with 3,55% and Serbia with 4,34%. The data for Montenegro and Bosnia and Herzegovina are not available.

Individuals who have Basic or above basic overall digital skills »*is a composite indicator which is based on selected activities related to internet or software use those individuals aged 16-74 perform in five specific areas (Information and data literacy, Communication and collaboration, Digital content creation, Safety, and Problem solving). It is assumed that individuals having performed certain activities have the corresponding skills. Therefore, the indicators can be considered as proxy of individuals digital skills.*« (EUROSTAT, 2023).

The EU 27, average ranges of 53,9% of population, reaching basic or above basic digital skills. The highest values are detected in Croatia with 63,4%, followed by Austria with 63,3%, and Slovakia at 55,2% on the other range of the scale Romania reaches 27,8%, Bulgaria at 31.2% and at Bosnia and Herzegovina at 34,7%.

The third index is titled Employed persons having to work at very high speed or to tight deadlines« (EUROSTAT, 2023). The original source of data is the European foundation for the improvement of living and working conditions (Eurofound). The average was calculated for the periods between 2005 and 2015 and the value for EU 27 countries reaches 44,7%. In the table for numerous countries above the stated average with Hungary, reaching 49,6%, followed by Austria with 47,2% and Germany with 46,5%. Way above average seem to be Slovenia with 56% and Romania with 54,8%. On the other hand,lowest rank Bulgaria with 32%, and Slovakia with 32,2% both followed by Croatia with 35,8%.

Table 4: Cognitive frames of the Danube Region countries

	Employment in high-tech sectors 10year average	Basic or above basic digital skills	Work at high speed and tight deadlines, avg for 2005-15
European Union - 27 countries (from 2020)	6,08	53,9	44,4
Bulgaria	4,04	31,2	32
Czechia	11,18	59,7	45,1
Germany (until 1990 former territory of the FRG)	9,81	48,9	46,5
Croatia	3,55	63,4	35,8
Hungary	9,26	49,1	49,6
Austria	6,1	63,3	47,2
Romania	5,88	27,8	54,8
Slovenia	9,27	49,7	56
Slovakia	10,78	55,2	33,2
Montenegro	n/a	47,2	n/a
Bosnia and Herzegovina	n/a	34,7	n/a
Serbia	4,34	41,3	n/a

Source: (EUROSTAT, 2023), own calculation.

Czech Republic, one of the countries of competitively advanced group outstand the number in the indicator employment in high-tech sector 10 years average with a total of 11.18% of the workforce. This is followed by Germany with 9.81% and Slovenia with 9.27%. Austria ranks last at 6.1% of the total workforce, however, when it comes to self-assessment on basic or above basic digital it is Austria, who reaches a total of 63.3% of the total workforce followed by Czech Republic with 59.7%, Slovenia with 49.7% and lastly Germany with 48.9% of the total force. When discussing work related pressures, it is important to assess and compare the amount of work at high speed and tight deadlines. We note the countries are very much equal when it comes to assessment of time where the work meant to be finalized at high speeds and tight deadlines. In this context it is Slovenia ranging highest at 56%, followed by Austria with 47.2%, Germany with 46.5%, and the Czech Republic with 45.1%.

When it comes to competitively intermediate countries and percentages of employment in high-tech sectors, we note Slovakia stands out with 10.78% of workforce employed in high-tech center. This is backed up by an estimated 55.2% of working population having

basic or above-basic digital skills and with 33.2% of the workforce who needs to work at high speed and tight deadlines. The situation to some extent seems similar for Hungary with 9.26% of employed in high tech sectors. Apart from this, there are, for example in Bulgaria, only 4.04%, and in Romania, there are 5.88% of workforce employed in high-tech sectors. In Hungary, a self-estimated 49.1% of the workforce has basic and above the basic digital skills compares to Romania where this self-estimate is significantly lower at 27.8%, and in Bulgaria, with a bit higher share at 31.2% of the workforce. When it comes to conditions and self-perceived need to work at high speeds in tight deadlines, the 54.8% Romanians recognizes this are daily reality, and in Hungary the figure is slightly lower at 49.6%, and Bulgaria at 32%.

Again, it is only Croatia out of the group of competitively leading countries that we were able to obtain all the data. Based on the data, we see only 3.55% of the workforce in Croatia is employed in high-tech sectors, where there is up to 63.4 people that perceive their digital skills as basic or above basic. On the other hand, there is 35.8% of workforce who needs to work at high speed and tight deadlines in Croatia. On the other hand, there are 4.34% of the employed in high-tech sectors in Serbia and 41.3% of the workforce is assigning themselves basic or above basic digital skills. Apart from that, in Montenegro this number is slightly higher at 47.2%, where in Bosnia and Herzegovina is significantly lower at 34.7%.

6 To conclude: Looking forwards, tentatively optimistic?

Across the numerous countries and their individual performances with respect to institutions, networks and cognitive frames, the diversity among them is noted. In cases where data for Danube region countries is available (non-EU member states are oftentimes problematic in terms of accessing data through Eurobarometer). However, the selected indicators offer interesting insights in the dynamics of development of individual country. To be able to draw firm conclusions on the particular processes surrounding re-industrialization through perspective of changed social field, more in-depth case study approach would be more appropriate. However, the research in front of us offers the positive responses to questions we outlined in the beginning of the discussion. Those countries that are aware of the potentials of re-industrialization place more emphasis on structuring the environment where the goal is attainable. Secondly, the re-industrialization is a promising path for the Danube regions countries, firstly through the promise of jobs and growth but also through promise on new entrepreneurial activity happening in the field of manufacturing. In any case further analysis of data is at place to ensure the more cause-effect relationship.

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