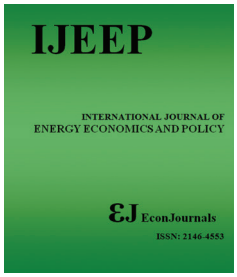

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Greening of the Manufacturing Industry in the Eurasian Economic Union

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ABSTRACT

The main purpose of this research is to reveal the current state of the manufacturing industry in the Eurasian Economic Union (EAEU) countries in terms of environmentally sustainable development. Based on UNIDO's experts - Jaime Moll de Alba and Valentin Todorov's methodology of a composite green industrial performance (GIP) index, we rank and analyse the industrial performance of the EAEU countries. Finally, we use correlation analysis to compare the GIP scores with UNIDO's competitive industrial performance index and conclude that the progress in the greening of the manufacturing industry will contribute to the improving the industrial competitiveness of the EAEU countries.

Keywords: Green Manufacturing, Industrial Production, Eurasian Economic Union, CO_2 Emissions, Industrial Competitiveness
JEL Classifications: L60, Q01

1. INTRODUCTION

More than 30 years have passed since the appearance of sustainable development concept in 1987, which raised the most important question of our time: whether the man and the natural environment could coexist. According to the concept, sustainable development is the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations General Assembly, 1987).

At the forefront of the next industrial revolution, industrial companies face the difficult task of reindustrialization, taking into account the adaptation to new conditions and business opportunities. One of the new requirements for industrial development is the modernization of production through the use of natural technologies and strict environmental restrictions. In fact, the "green" modernization of industry is becoming an integral part of the industrial revolution.

The concept of "green industry" appeared in 1995 and is defined as a business strategy that focuses on making a profit through the use of environmentally friendly technologies to achieve a competitive advantage (Hart, 1995). UNIDO (2009; 2011) defines green industry as industrial production with no negative impact on natural systems or human health. SDGs target 9.4 addresses the environmental sustainability of industrial development, calling for industries to cause less damage to the environment due to higher resource-use efficiency and adoption of eco-friendly technologies in industrial processes (Sustainable Development Goals, 2015).

According to Michael Porter and van der Linde theory (1999), pollution is a result of inefficient resource use. So, the mutual benefits for the environment and economy can be gained from introduction of environmentally friendly technologies in production processes. These authors argue that competitive advantages rely on the capacity for innovation; thus, "by stimulating innovation, strict environmental regulations can actually enhance competitiveness."

As stated in the Rio Declaration, 1992, countries should follow one common principle - prevent environmental degradation, but this principle also acknowledges the different contributions to

environmental degradation by developed and developing countries. Obviously, the developed countries bear greater responsibility as they require much more natural resources for their development (United Nations Conference on the Human Environment, 1992).

2. RESULTS AND DISCUSSION

2.1. CO_2 Emissions from Manufacturing Industry

Manufacturing is consistently reducing its emissions as countries introduce alternative fuels, energy-intensive industries, and stronger policies for energy efficiency. The indicator that measures the progress made towards achieving this target is CO_2 emissions per unit of value added, i.e. carbon dioxide intensity.

The industry sector accounted for more than 6,109 millions of tonnes CO_2 (or 6.1 Gt CO_2) in 2016, 19% of global emissions. Between 2000 and 2015 global industrial emissions increased by almost 2.4 Gt CO_2 but intensities overall decreased by 3% in the same period with a peak in 2011. Due to the shift of manufacturing from industrialized to developing countries, the share of CO_2 emissions in industrialized economies is much less than in developing countries. For example, in 2016, CO_2 emissions from industry amounted to 20% in the Americas, 27% in Europe, and 49% in Asia (International Energy Agency, 2018).

Manufacturing industries are continually reducing their emission levels as countries industrialize. At the sub-sector level, a high volume of emissions is commonly observed in the manufacturing of chemicals and chemical products, basic metals and non-metallic mineral products. Structural changes and product diversification in manufacturing can also contribute to the reduction of emissions (UNIDO, 2019).

The Paris Agreement (2014), signed by more than 190 countries in 2016, opened a new stage in world climate policy. The signatory states undertook to prepare and implement national plans to reduce greenhouse gas emissions by 2020.

The manufacturing industry is a driving factor of economic growth for any country and the Eurasian Economic Union (EAEU) is not an exception. According to the Treaty of the Eurasian Economic Union (2014), the Union aims to raise and upgrade comprehensively the competitiveness of the national economy of its members by the formation of a new development model and the implementation of coordinated industrial policy. Industrial cooperation in the EAEU is the main focus of integration processes within the Eurasian space. Modernization could serve as a positive factor in strengthening the integration (Kolomeytseva and Maksakova, 2019). Thus, for the 1st time in the post-Soviet space, industrial policy is highlighted as one of the most important elements of interaction between the members. The member-states of the EAEU are the Republic of Armenia (AM), the Republic of Belarus (BY), the Republic of Kazakhstan (KZ), the Kyrgyz Republic (KG) and the Russian Federation (RU).

Most of the countries belonging to the former republics of the Soviet Union are characterized by high energy intensity of their economies and cannot boast a low level of greenhouse gas emissions. According to Figure 1, Kazakhstan and Russia are in the most unfavorable situation here, as they have the highest CO_2 emissions within the EAEU. Belarus is in a much more favorable position, as the share of CO_2 emissions is much lower than in the mentioned countries. In addition, for the last years, the country was focused on energy efficiency. As a result, among the "manufacturing triad"[1] of the EAEU countries, Belarus has the best indicators at the greening of the manufacturing industry. Besides, at first glance, it seems that the most favorable situation with emissions is in the countries with a smaller role of industrial production in economic development - in Armenia and Kyrgyzstan. However, the figures indicate the insufficient level of industrial development rather than success in the field of energy efficiency in these countries.

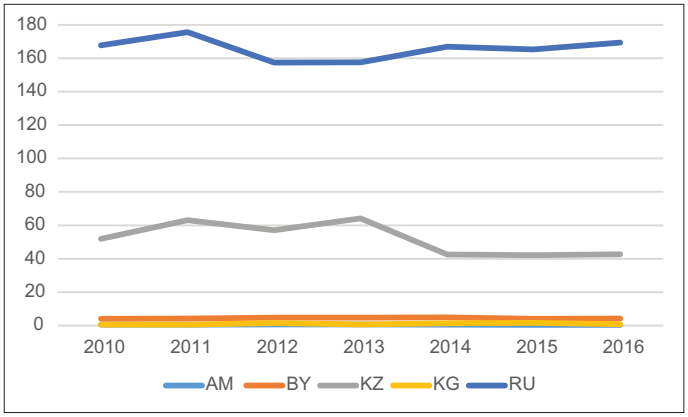
2.2. The Link between Environmental Degradation and Income

The human impact on the environment is increasing with the growth of income and, consequently, material needs, leading to the expansion of production activities and intensifying the global environmental crisis. The relationship between the growth of GDP p.c. and the level of environmental degradation can be described by a bell (or inverted-U) shape environmental Kuznets curve. The environmental curve is named for Kuznets (1955) who hypothesized that income inequality first rises and then falls as economic development proceeds. This curve shows that the growth of GDP p.c. leads to an increase in environmental pollution, and then in connection with the modernization of the economy — to a decrease. When economic growth begins with a low level of development of the country's economy and income, first of all, the primary sector (natural resources, mining, agriculture, and forestry, etc.) is developing, and this leads to the depletion of natural resources and environmental pollution (Figure 2).

Improving the technological structure of the economy and its modernization, as well as the welfare of the population, and the transition to resource-saving and environmentally friendly technologies can help to reduce the environmental damage. It is difficult to determine the proper GDP p.c. level to start improving the environmental situation. It depends on different indicators, such as: the technological and sectoral structure of the economy,

1 Russia, Belarus, and Kazakhstan.

Figure 1: Dynamics of CO_2 emissions from manufacturing in the Eurasian Economic Union (million tonnes)



Source: Author, based on UNCTADstat data portal

the level of well-being of the population, the level, and type of environmental pollution. For example, Selden and Song (1994) estimated EKCs for four emissions series: SO_2, NO_x, SPM, and CO_2 using longitudinal data primarily from developed countries. For the fixed-effects version of their model they were (converted to USD 1,990 using the US GDP implicit price deflator): SO_2, $10,391; NO_x, $13,383; SPM, $12,275; and CO_2, $7,114.

It is important to mention that different industries have different pollution intensities. What is more, during the process of economic development, the output mix changes. In the earlier phases of development, when there is a shift away from pre-industrial society with agriculture dominating in the structure of economic development toward industrial society, the development of heavy industry leads to higher emissions. To the contrary, in post-industrial society, when there is a shift from resource-intensive heavy industry toward lighter manufacturing and services sector development, which undoubtedly have lower emissions per unit of output. Kander (2002) argues that the structural shift in the economy may largely be an illusion. In manufacturing, due to increasing productivity, prices fall relative to the prices of services. As a result, the manufacturing's share in GDP declines when measured at current prices but not when measured at constant prices. Due to this productivity growth in manufacturing, its pollution intensity falls over time relative to the pollution intensity of services.

The Treaty on the EAEU does not have a special section regulating environmental relations between the countries, there is only an Agreement on cooperation in the field of ecology and environmental protection. It was also decided to establish an Interstate Environmental Council. One of the priority directions of environmental relations of the states of the EAEU is the creation of regulations that allow to unify and harmonize environmental legislation. The legal regime of economic activity in the EAEU countries should take into account the environmental interests of the members. On the one hand, the natural resource sectors of the EAEU countries occupy a significant share of their economies. On the other hand, the most important natural resources are the resources shared by the states of the Eurasian region and their exploitation by one country can cause damage to another.

The impact of industrial development on the environment also depends on the pace of structural change in the economy. For example, there is a large variation among industrial sectors in the intensity of energy use and rates of emission. Moreover, economies can shift production from high energy intensive sectors to low energy-intensive ones. Industries that use low- and medium-low technology tend to be "dirtier" in terms of emission inefficiency (UNIDO, 2017).

The sectoral intensity is defined as CO_2 emission from manufacturing divided by manufacturing value added (MVA) in constant 2010 USD.

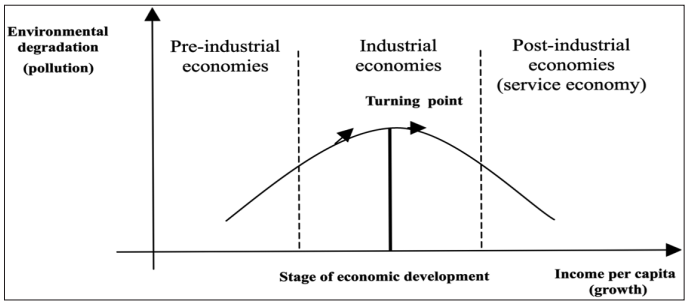
$$CO_2 \text{ emission per unit of value added} = \frac{CO_2 \text{ emission from manufacturing (in kg)}}{\text{MVA (constant USD)}} \quad (1)$$

Although Russia and Kazakhstan are the top emitters of CO_2 among the EAEU, the relative value of their CO_2 emissions per unit of MVA dropped from 0.86 kg/USD in 2010 in Russia and 3.1 kg/USD in Kazakhstan to 0.76 kg/USD and 2.19 kg/USD in 2016 respectively. What is more, Kyrgyzstan is the only country within the EAEU with a growth in this indicator within the analyzed period. The relative value of its CO_2 emissions per unit of MVA rose from 0.74 kg/USD in 2010 to 0.88 kg/USD in 2016, varying significantly within the period (Figure 3).

2.3. Green Industrial Performance (GIP) of the EAEU Countries

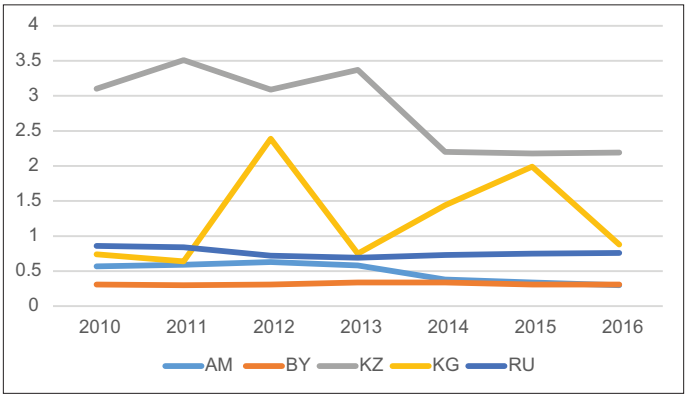
UNIDO experts - Jaime Moll de Alba and Valentin Todorov have developed the GIP index - a tool to measure countries' performance in terms of green manufacturing. It consists of six indicators, reflecting the country's GIP across the three dimensions: (1) The

Figure 2: Environmental Kuznets curve



Source: Panayotou, 1993

Figure 3: Dynamics of CO_2 emissions per unit of manufacturing value added in the Eurasian Economic Union (kg/USD, constant 2010 price)



Source: Author, based on UNCTADstat Data Portal

Table 1: Composition of the GIP index

First dimension: Capacity to produce and export green manufactured goods
Indicator 1: Green MVA per capita
Indicator 2: Green Manufactured exports per capita
Second dimension: The role of green manufacturing
Indicator 3: Share of green MVA in total MVA
Indicator 4: Share of green manufactured exports in total manufactured exports
Third dimension: Social and environmental aspects of green manufacturing
Indicator 5: Share of green manufacturing employment in total manufacturing employment
Indicator 6: CO_2 emission from manufacturing per unit of MVA

Source: Moll de Alba and Todorov, 2018. MVA: Manufacturing value added, GIP: Green industrial performance

Table 2: Competitive green industrial performance indices of the EAEU countries

	AM		BY		KZ		KG		RU	
	2010	2015	2010	2015	2010	2015	2010	2015	2010	2015
GIP rank	83	90	60	68	98	78	75	83	54	56
GIP score	0.03	0.03	0.08	0.08	0.00	0.05	0.04	0.04	0.11	0.11
GIP quintile	Lower Middle	Bottom	Middle	Lower Middle	Bottom	Lower Middle	Lower Middle		Middle	
Per capita indicators										
Green MVA p.c.	1.60	1.44	18.56	13.99	9.25	19.56	3.92	2.85	34.42	16.90
Green manufactured exports p.c.	7.47	6.23	101.24	113.21	6.97	12.24	3.05	4.93	32.11	48.47
Share indicators										
Share of green MVA in total MVA	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.03	0.01
Share of green manufactured exports in total manufactured exports	0.03	0.02	0.05	0.05	0.01	0.02	0.02	0.03	0.04	0.05
Share of green manufacturing employment in total manufacturing employment	0.01	0.02	0.02	0.02	0.02	0.04	0.07	0.05	0.12	0.13
Environmental indicators										
CO_2 emission from manufacturing per unit of MVA	0.55	0.34	0.31	0.30	3.39	2.35	0.62	1.99	0.89	0.81
GIP indices										
GMVA p.c. index	0.00	0.00	0.02	0.01	0.01	0.02	0.00	0.00	0.03	0.02
Share of GMVA in total MVA index	0.03	0.04	0.08	0.07	0.06	0.12	0.15	0.11	0.15	0.09
Share of GEMP in total manufacturing employment index	0.11	0.15	0.11	0.11	0.16	0.28	0.54	0.36	0.88	0.94
Share of GMX in total MX index	0.06	0.04	0.09	0.12	0.02	0.04	0.03	0.06	0.07	0.12
GMX per capita index	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.01	0.01
CO_2 value added index	0.85	0.91	0.92	0.93	0.00	0.34	0.83	0.45	0.75	0.78

Source: Author, based on UNIDO, 2019. EAEU: Eurasian Economic Union, MVA: Manufacturing value added, GIP: Green industrial performance

capacity to produce and export green manufactured goods; (2) The role of green manufacturing, and (3) Social and environmental aspects of green manufacturing (Table 1). Each of the six indicators is normalized into the range (0, 1), with higher scores representing better outcomes (except for the one "negative" indicator, CO_2 emissions by MVA, for which lower values mean better performance). The GIP index can be used for analyzing the inclusive and sustainable industrial development at the country level, following UNIDO's grouping by stage of industrialization: industrialized economies, emerging industrial economies, other developing economies and least developed countries (Upadhyaya and Vasechko, 2013).

One important thing is that there is no common definition of environmental goods. So, different sources are used, such as: (a) the OECD list of environmental goods (Steenblik, 2005), (b) the World Bank classification of 43 environmental goods (World Bank, 2007), (c) the APEC classification of 54 environmental goods (Steenblik, 2005), and (d) the prominent report "Measuring the green economy" produced by the US Department of Commerce (2010).

And according to Moll de Alba and Todorov, a product is considered green if it serves one of the following goals: (1) resource conservation, (2) environmental assessment, (3) energy conservation, (4) renewable/alternative energy, (5) pollution control.

The GIP index is computed for 104 economies. Yet the highest score (achieved by Germany) is only 0.69. This reflects the fact that no country leads in all six GIP indicators. According to the expanded green product list (Moll de Alba and Todorov, 2019), Germany is followed by such countries as Denmark (0.68), Czech Republic (0.61), Singapore (0.58), and Republic of Korea (0.57).

It is important to mention that industrialized economies used to outperform developing economies in terms of green manufacturing, as they use energy-efficiency technologies and also renewable sources of energy. So, the EAEU countries perform differently in GIP ranking. According to the latest available data, in 2015 industrialized Russia and Belarus ranked 56 and 68 positions with 0.11 and 0.08 GIP scores respectively. Emerging industrial Kazakhstan ranked 78th with 0.05 scores. Finally, developing Kyrgyzstan and Armenia ranked 83th (0.04) and 90th (0.03). In general, while all the EAEU countries managed to improve their positions compared to the previous ranking, Belarus (+36), Kazakhstan (+25), Russia (+7), Armenia (+1), Kyrgyzstan dropped 9 positions. One important notion is that Russia is the only country within the EAEU performing in the middle quantile group of the GIP ranking. Belarus, Kazakhstan, and Kyrgyzstan perform as a lower-middle group, while Armenia places in the bottom quantile. So, all the EAEU countries face a big challenge to improve their positions in the GIP ranking and move to top performers group (Table 2).

Despite being the top GIP performer in the EAEU, Russia ranks second both in the value of green MVA p.c. and green manufactured exports p.c., following the rest of the "manufacturing triad" - Kazakhstan and Belarus. Kazakhstan - the top performer in the value of green MVA p.c. with 19.56 USD, is followed by Russia, Belarus, Kyrgyzstan and Armenia with 16.90, 13.99, 2.85, and 1.44 USD, respectively. If we take a look at top performers, in 2015, the total value of green MVA p.c. in Germany was 1,001 USD, in Denmark - 675 USD, etc. So, the figures of the EAEU are extremely small.

When we look at the green manufactured exports p.c., it is Belarus with 113.21 USD which was the leader in 2015 with Russia, Kazakhstan, Armenia and Kyrgyzstan after (within the EAEU) with 48.47, 12.24, 6.23, and 4.93 USD respectively. At

the same time, in top-performing countries this amount is much higher - 4,450 USD in Singapore, 2,355 USD - in Denmark, etc.

In terms of green MVA in total MVA, the EAEU countries rank similarly with the share of 1-2%, while in top-performing countries this indicator varies between 10 and 15%. The situation is quite similar when looking at the share of green manufactured exports in total manufactured exports. The share is as high as 5% only in Belarus and Russia. At the same time, Russia is one of the world's leading performers in such an indicator as the share of green manufacturing employment in total manufacturing employment - 13%. In the rest of the EAEU, this indicator varies at the level above 2%. Finally, Belarus and Armenia outperform other countries of the EAEU in terms of CO_2 emissions with 0.30 and 0.34 kg per unit of MVA followed by Russia, Kyrgyzstan and Kazakhstan with 0.81, 1.99, 2.35 kg per unit of MVA. But this indicator is far lower than 0.1 in such countries as Switzerland (0.04), Ireland (0.04), Denmark (0.07), etc.

Figure 4 presents using a radar-type chart the comparative performance of the EAEU countries according to the GIP ranking. The chart underlines the untapped potential offered by green manufacturing in those countries and highlights the different performance of each of them. A closer examination of the underlying indicators comprised in the GIP index helps to reveal a number of areas for potential improvement of the EAEU countries.

Russia - the top green industrial performer in the EAEU, tops the performance in terms of green manufacturing employment share as well as is the third performer in green MVA share. On the other hand, Russia can improve its' position in the other indicators, first of all, in CO_2 emissions. Belarus is the leader within the EAEU in terms of green manufactured exports p.c. and also has the lowest level of CO_2 emissions, but it can increase share indicators. Kazakhstan despite leading in green MVA p.c. shows the worthiest results within the Union in CO_2 emissions. Kyrgyzstan displays room for improvement in per capita indicators and also CO_2 emissions, whereas Armenia despite good results in terms of CO_2 emissions, shows the potential to advance its performance in per capita indicators.

2.4. Greening of the Manufacturing Industry as One of the Key Elements of the Industrial Competitiveness of the EAEU Countries

UNIDO publishes an annual competitive industrial performance (CIP) report, in which countries are ranked by CIP index, which consolidates eight indicators, reflecting country's industrial performance across the three dimensions: (1) The capacity to produce and export manufactured goods; (2) Technological deepening and upgrading; (3) World impact (Table 3). Overall, the CIP Index can range between 0 and 1. Yet the highest score (achieved by Germany, also leading in the GIP index) is only 0.52. This reflects the fact that no country leads in all eight CIP indicators.

The CIP Index assesses and benchmarks the industrial competitiveness of 150 countries. In 2017, Russia led the industrial competitiveness list among the EAEU countries. Russia's CIP rank improved by two positions since 2010, but at the same time, there was a decrease in its CIP score from 0.12 to 0.11. What is more, Russia is the only country within the EAEU which has an impact on world MVA and manufactures trade at the level of 1.7 and 1.3% respectively.

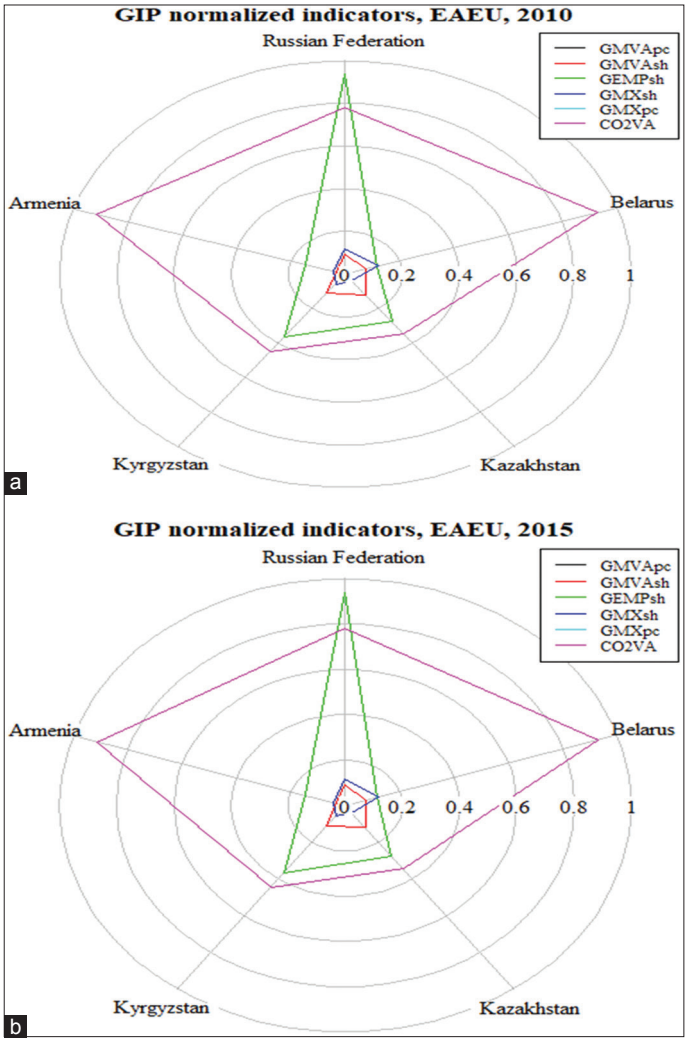
Meanwhile, the rest of the "manufacturing triad" - Belarus and Kazakhstan have shown a decline in their industrial competitiveness within the analyzed period - by four and two positions respectively. The decrease in the CIP score amounted from 0.08 to 0.07 for Belarus and from 0.05 to 0.04 for Kazakhstan.

Table 3: Composition of the CIP index

First dimension: Capacity to produce and export manufactured goods
Indicator 1: MVA per capita
Indicator 2: Manufacturing exports per capita
Second dimension: Technological deepening and upgrading
Composite indicator (3 and 4): Industrialization intensity
Composite indicator (5 and 6): Export quality
Third dimension: World impact
Indicator 7: Impact of a country on world MVA
Indicator 8: Impact of a country on world manufacturing exports

Source: Author, based on UNIDO, 2019. MVA: Manufacturing value added, CIP: Competitive industrial performance

Figure 4: (a and b) Green industrial performance indicator scores of the Eurasian Economic Union, 2010, 2015



Source: Author, based on Moll de Alba and Todorov, 2019

Table 4: Competitive industrial performance indices of the EAEU countries

	AM		BY		KZ		KG		RU	
	2010	2017	2010	2017	2010	2017	2010	2017	2010	2017
CIP rank	109	99	42	46	64	66	124	118	33	31
CIP score	0.01	0.01	0.08	0.07	0.05	0.04	0.00	0.01	0.12	0.11
CIP quintile	Lower Middle		Upper Middle		Middle		Bottom	Lower Middle	Upper Middle	
Per capita indicators										
Manufactured exports p.c.	208.76	519.22	2366.81	2641.44	792.36	723.97	61.01	138.42	983.3	1116.74
MVA p.c.	315.26	435.31	1359.98	1468.09	1022.07	1098.54	149.08	147.39	1362.17	1561.45
World share indicators										
Impact of a country on world manufactures trade	0.00		0.00		0.00		0.00		0.01	
Impact of a country on world MVA	0.00		0.00		0.00		0.00		0.02	
Share of medium- and high-tech activities										
Medium- and high-tech manufactured exports share in total manufactured exports	0.25	0.13	0.39	0.40	0.37	0.36	0.20	0.29	0.24	0.29
Medium- and high-tech MVA share in total MVA	0.05	0.05	0.40	0.39	0.13	0.13	0.03	0.03	0.25	0.30
Share of national aggregates										
Manufactured exports share in total exports	0.69	0.76	0.89	0.86	0.23	0.27	0.26	0.48	0.35	0.45
MVA share in total GDP	0.09	0.10	0.23	0.23	0.11	0.10	0.17	0.14	0.13	0.14
Manufacturing export indices										
Manufactured exports p.c. index	0.01	0.02	0.07	0.08	0.02	0.02	0.00	0.00	0.03	0.03
Share of manufactured exports in total exports index	0.71	0.78	0.91	0.88	0.23	0.28	0.26	0.49	0.36	0.46
Share in world manufacturing exports index	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.09	0.07
Share of medium- and high-tech activities in manufacturing export index	0.30	0.14	0.47	0.41	0.45	0.38	0.24	0.30	0.29	0.30
Industrial export quality index	0.50	0.46	0.69	0.65	0.34	0.33	0.25	0.39	0.32	0.38
MVA indices										
MVA p.c. index	0.02	0.02	0.10	0.06	0.07	0.04	0.01	0.01	0.10	0.06
Share of world MVA index	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.10	0.07
Share of MVA in GDP index	0.27	0.28	0.69	0.67	0.34	0.29	0.51	0.39	0.38	0.39
Share of medium- and high-tech activities in total MVA index	0.05	0.06	0.47	0.50	0.15	0.17	0.04	0.03	0.29	0.38
Industrialization intensity index	0.16	0.17	0.58	0.58	0.24	0.23	0.27	0.21	0.34	0.39

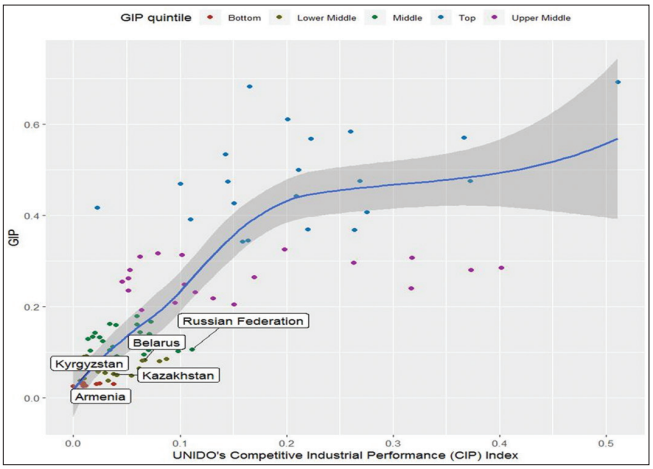
Source: Author, based on UNCTADstat data portal. EAEU: Eurasian Economic Union. MVA: Manufacturing value added, CIP: Competitive industrial performance

Armenia and Kyrgyzstan rank in the lower middle quintile of the ranking. Armenia has shown some major improvements in its industrial competitiveness within the analyzed period - by ten positions. Kyrgyzstan's CIP rank also improved by six positions since 2010, with an absolute increase in its CIP score of less than 0.001. The country also managed to transfer from the bottom quintile of the ranking to the lower middle. Such countries are likely to replicate technologies in a bid to "catchup" with innovative countries at the frontier, as they lack the capabilities to act as pioneers themselves (Table 4).

A closer look into the different dimensions of competitiveness within the EAEU shows that this group of countries of different industrial development stages faces major difficulties at the whole three dimensions: producing and exporting manufactured goods, their upgrading and technological deepening, and their challenge is even bigger on international markets as they have almost no impact.

For the purpose of our research, we use a Pearson linear correlation to compare GIP and CIP scores. GIP scores for the EAEU countries

Figure 5: Correlation between green industrial performance and competitive industrial performance indices of the Eurasian Economic Union



Source: Author, based on Moll de Alba and Todorov (2019) and UNIDO (2019)

show 0.99 correlation with UNIDO's CIP index, so the correlation is strong and the greater the value of CIP, the higher the corresponding values of GIP. On the other hand, if we compute the Spearman rank correlation, it is a bit lower (0.90), but strong as well. So, in order to be competitive in terms of industrial production, as well as "green" production, countries of the EAEU should improve their performance in the mentioned indicators (Figure 5).

3. CONCLUSION

The analysis indicates that Russia outperforms the other EAEU countries both in the GIP and in the CIP rankings. But in order to achieve environmentally sustainable development and improve positions in the GIP ranking, moving to top performers group, all the EAEU countries undoubtedly should decrease CO_2 emissions.

Besides, it is important to mention that the manufacturing sectors of countries that perform poorly in the CIP index are characterized by inefficiencies in the allocation of factors of production, such as labour and capital. And according to our research, there is a strong correlation between the CIP and the GIP Indices - the greater the value of CIP, the higher the corresponding values of GIP.

We strongly believe that the pursuit of economic growth should not entail environmental damage. In particular, the issues of ecology and environmental safety are not directly reflected in the Treaty on the EAEU. In this regard, it is important to develop environmental cooperation as one of the fundamental directions of both mutual and international relations of the EAEU countries. In the course of integration processes within the EAEU, environmental safety issues, along with economic development issues, should be given high priority.

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