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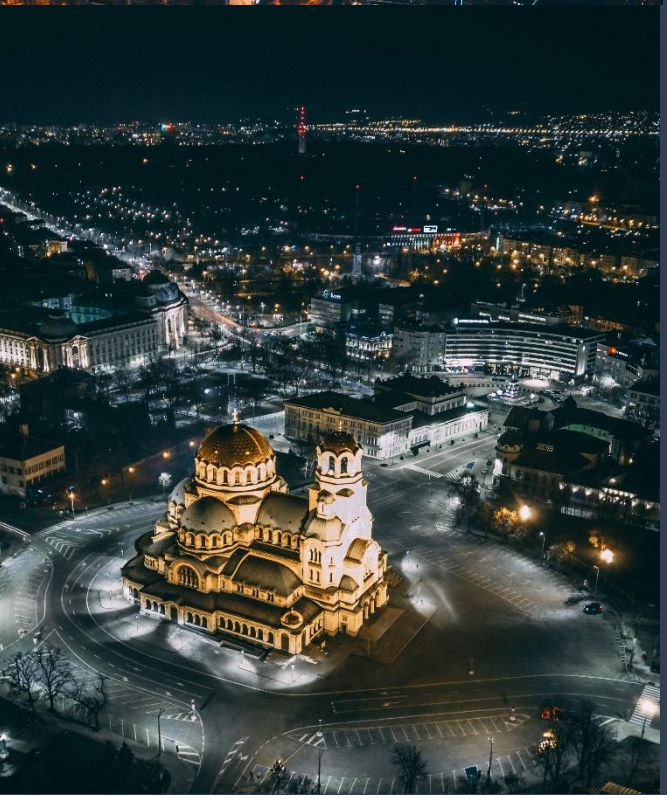

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China-CEEC Cooperation and Development

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Content

Part 1

Future Cooperation between China and Central Eastern Europe

THE GREAT ACHIEVEMENTS OF THE MILLENNIAL CULTURES OF CHINA AND BULGARIA AS PLATFORMS FOR CULTURAL COOPERATION AND EXCHANGE

Nako Stefanov*

Abstract:

China with its more than 5 000 years' old history is one of the most ancient civilizations in the world. The country is also the only one among the oldest civilizations with a continuous state and national tradition. The Celestial is the heart of the China-centric East Asia civilization, which is the cradle of a spiritual traditions, which are coming from the ancient time like Confucianism, Taoism and so on.

Bulgaria is known not only as one of the oldest countries in Europe, but also as one of the civilizational and spiritual centers on the continent. We can definitely say that Bulgaria is the "mother" of one of the main European and world civilizations – the Slavic-Orthodox Cyrillic civilization. Bogomilism - a mass, anti-clerical, anti-feudal, reformist and dualistic religious movement, which originated in Bulgaria, was an extremely interesting medieval phenomenon. This religious movement at one point in medieval history, along with Catholicism and Orthodoxy, became the third largest Christian current in Europe.

The abovementioned socio-cultural, civilizational traditions, and spiritual characteristics of both China and Bulgaria as countries and peoples represent specific "soft power" as well as steadfast platform for cultural relationship and exchange of spiritual values between Bulgaria and China.

Key Words: Socio-cultural traditions of China and Bulgaria, China-centric East Asia civilization, Slavic-Orthodox Cyrillic civilization, six classic schools of China Thought, Bogomilism, Spirituality as steadfast platform for cultural relationship and exchange

JEL: Z12

Introduction

China today is one of the greatest global powers with the biggest population on the Earth, as well as with highest GDP/gross domestic product/ calculated in purchasing power standards/PPS/ in the world.

But also China is one of the most ancient civilizations in the world, and the only one among the oldest civilizations with a continuous state and national tradition. China with its 5 000 years' old history has created the Chines civilizational cultural zone, which includes today Korea, Japan, Vietnam, etc. In its long history, China has demonstrated the highest spiritual and material achievements.

Bulgaria today is a small country with an area (111 000 square kilometres) and population (about 7 million people) located in South-Eastern Europe. It is located in the heart of the Balkan Peninsula. In this sense, it has an important geostrategic position. The country has a stable climate and favorable natural conditions for agriculture. Historically, it is one of the oldest countries in Europe and the oldest that has had its name since its creation.

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But Bulgaria is known not only as one of the oldest countries in Europe, but also as one of the cultural centers on the continent. We can definitely say that Bulgaria is the "mother" of one of the main European and world civilizations – the Slavic-Orthodox Cyrillic civilization.

All of the abovementioned means that there are wonderful prerequisites for cultural relationship and exchange of cultural values between Bulgaria and China. Research, mutual acquaintance, presentation and communication on the occasion and in connection with the highest civilizational achievements of our two countries, such as the abovementioned, as well as many others, are a good basis for cultural cooperation between Bulgaria and China.

Undoubtedly, a long-term strategy for cultural cooperation between our two peoples and countries will be most successfully developed on the platform of the proud "peaks" achieved by the Bulgarian and Chinese peoples in their millennial history.

These proud "peaks" are object of our presentation as a wonderful way how to realize the strategy for cultural cooperation between Bulgaria and China.

1. The Socio-Cultural Achievements in the long, long History of China

The "Golden Age of Chinese Thought

The Zhou Age is known as the "Golden Age of Chinese Thought." In the VI-III century BC religious-philosophical and ethical teachings are developing, some of which still influence the public consciousness During this period the so-called "Six classic schools of China Thought" were created, namely:

- Taoism - -道家 (Tao Jia) led by Lao Tzu;
- Confucianism - -儒家 (Zhu Jia), led by Confucius;
- Moism - 墨家 (Mo Jia), led by Mo Tzu;
- Legism 法家 (Fa Jia), led by Guang Jun, Shang Yang and others;
- The school of names (and forms) - 名家 (Min Jia), led by Deng Xi;
- The school of "yin-yang" - 阴阳家 (Yin Yang Jia). of significant masses of people in East Asia and around the world.

Lao Tzu

Confucius

Mo Tzu

Shang Yang

Deng Xi

Zhou Yen

Confucianism

Especially Confucianism undoubtedly became one of the main ethic and philosophical worldviews and platforms of China through the millennia of its existence.

The teaching of Confucius, who was born and teach in China, managed to conquer the hearts and minds of many countries outside China. It is present to this day in the awareness of many peoples and their personal behavior among the world. This speaks about role of this ethical teaching and its importance in the past and today.

Great Silk Road

Among the great achievements of China cannot be missed without mentioning the Great Silk Road. At a time when nations are meeting each other, especially on the battlefield, China is offering the world's largest peace project in Antiquity and the Middle Ages.

The Great Silk Road (in Chinese 絲綢之路) existed long, long before it got its name. In fact, it is a caravan route connecting East Asia, specifically China with the Mediterranean in antiquity and the Middle Ages.

Figure 1: Map of the Great Silk Road
Source: https://www.dookinternational.com/silk-route-tours-travels

The Great Wall of China

The Great Wall of China (simplified Chinese: 万里长城; pinyin: Wàn lǐ Cháng chéng) is among the masterpieces of material culture created in China. We should mention that the Great Wall of China is a series of fortifications that were built across the historical northern borders of ancient Chinese states and Imperial China as protection against various nomadic groups from the Eurasian Steppe. Several walls were built from as early as the 7th century BC, later joined together by Qin Shi Huang (220–206 BC), the first emperor of China in one wall. The Great Wall is the biggest construction project of the human mankind till today, which can be seen from the Space.

Figure 2: Picture and map of the Great Wall of China
Sources: https://sites.google.com/site/thegreatwallofchinabeijing/, https://www.pinterest.com/pin/234116880601552024/

Other China's great pioneering innovations

Among China's great pioneering innovations, which have got world recognition and dissemination are the paper, the compass, the world's first printed book, porcelain, gunpowder, and more, more others.

1. The Compass 2. The use of gunpowder 3.The world's first printed book for rockets

Figure 3: Chinese innovations
Sources: http://www.computersmiths.com/chineseinvention/compass.htm, http://php.scripts.psu.edu/users/j/x/jxl5764/Group.html

China as the biggest world economy in almost 2000 years

As a last word concerning China we have to stress out that for more than 2 000 years the Chinese civilization was the biggest economy in the world and the fact that now China once again is becoming the biggest global economy means that the world is returning once again into its normal state.

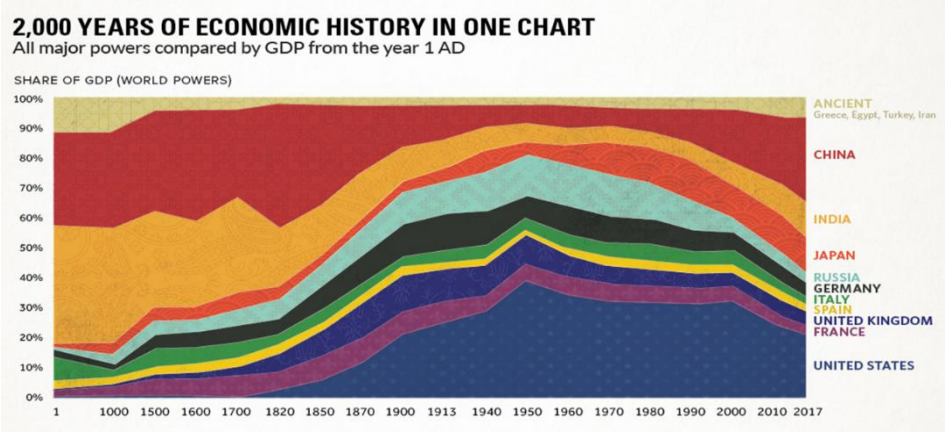

Figure 3: Map of the 2 000 years of world economic history and the role of China in it
Source: https://www.visualcapitalist.com/2000-years-economic-history-one-chart/

2. The Socio-Cultural Achievements in the long history of Bulgaria

The lands on which modern Bulgaria is located are also the bearers of the most ancient cultural artefacts. The world's oldest golden treasure has been discovered here. Varna's gold treasure is the oldest processed gold in the world, at least 1,000 years older than the civilizations of Sumer, Mesopotamia, Egypt and Mycenae. The researchers investigated that the treasure was created between 4 600 – 4 200 years BC. All this means that Bulgaria's land is the cradle at least of the European civilization.

Figure 4: Varna gold treasure as the oldest processed gold in the world
Source: http://archaeologyinbulgaria.com/varna-gold-treasure-varna-chalcolithic-necropolis-varna-bulgaria/

The Thracians

Modern Bulgarians as a people were created by the synthesis of three currents – Thracians, Proto -Bulgarians and Slavs. The first Thracians settled in the Eastern half of the Balkan Peninsula, including the territory of present-day Bulgaria around 3500 century BC. In the 12th century BC they already separately lived in groups and fill the Balkan Peninsula.

The ancient Greek historian Herodotus gives a description in his "History", saying that: "Thracian nationality is the most numerous after Indian. In each separate area Thracians have a separate name, but the customs of all separate groups are the same".

Figure 5: Thracian state in V-III century BC
Source: https://bg.m.wikipedia.org/wiki/%D0%A4%D0%B0%D0%B9%D0%BB:Tracian_state.png

Proto-Bulgarians and Slavs (V – VII century AD)

In the second half of the 5th century Slavs came from the North and live in Transylvania. After most of the Ostgots turned to Italy (488), Slavs occupy the territory of the Lower and Middle Danube. The first Slavic attack across the Danube was noted in history, in 519. at the time of the Emperor Justin I and was committed by the Ants. In the 6th century the Slavs begin settle South of the Danube in the Balkan lands. In the 7th century the Southern Slavs became the main population of the Balkan Peninsula.

Figure 6: The territory of the Slavic people in VI century AD
Source: https://www.google.com/search?q=The+territory+of+the+Slavic+people+in+VI+century+AD

In the year 479 the Byzantine Emperor Zeno, was forced to conclude an Alliance for the first time with the "so called Bulgarians" who lived between Constantinople and the Adriatic. In the year 494 the Bulgarians, who lived in Illyria and Thrace, attack the Byzantine Empire, but then turn away. Old Great Bulgaria is early medieval state with the ruler of Kubrat, It existed about 30 years after 632 in the Northern Black Sea region-today in Ukraine and Southern Russia. It is a military tribal Alliance of Proto-Bulgarians and related tribes.

Figure 6: Proto-Bulgarians went to Balkan Peninsula
Source:
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The first Bulgarian Empire (681 – 1018)

After the Great Bulgaria was conquered by the Khazars, a part of Proto-Bulgarians, led by Asparuh, and another, led by Kuber, went to the Balkan Peninsula and mingled with the Slavs, mixed with the local Thracians. After Asparuh won the victory over the army of the Byzantine Emperor Constantine IV, an agreement was concluded with Byzantium. Proto-Bulgarians and Slavs got the territory between the mountains Stara Planina and the Danube. Treaty with Byzantium in 681 years is accepted as the beginning of the first Bulgarian State.

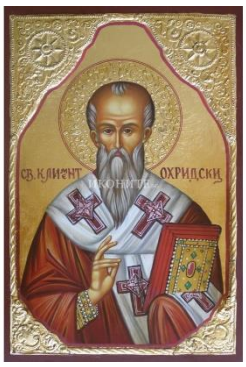
Figure 6: The Proto-Bulgarians on the Balkan Peninsula in 681 years AD
Source: https://blazingbulgaria.wordpress.com/2012/06/26/origins_of_bulgaria/

Bulgaria as "Mother" of Slavic-Orthodox Cyrillic civilization

Cyril (born Constantine, 826–869) and Methodius (815–885) were two brothers and Byzantine Christian theologians and missionaries. For their work evangelizing the Slavs, they are known as the "Apostles to the Slavs". They are credited with devising in 863 the Glagolitic alphabet, the first alphabet used to transcribe Old Bulgarian Language. Bulgarian Tsar Boris I (Michael) (852 – 889) adopted Christianity as the official religion in 864 from Byzantium. Around 886. Boris takes in Bulgaria the expelled from Moravia, the disciples of Cyril and Methodius – Kliment, Naum, Gorasd, Angelarii, etc.

St. Tsar Boris I

St. Cyril and Methodius



St. Kliment Ohridski

Figure 7: The founders of the Christian Bulgarian culture
Sources: https://www.blessedmart.com/shop/hand-painted-icons/male-saints-icons/saint-tsar-boris-i/, https://orthodoxtimes.com/memory-of-the-saints-cyril-and-methodius-equal-to-the-apostles/, https://ikonite.bg

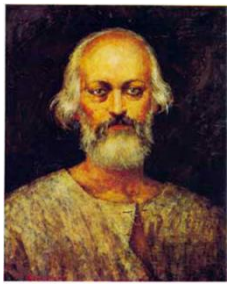
Later their disciple St. Kliment Ohridski created on the basis of the "Glagolitic" the "Cyrillic Alphabet". Soon the Cyrillic Alphabet was disseminated together with Orthodox

Christianity among other Slavonic States – Russia, Serbia and others. The liturgy language of the Slavonic Orthodox Church became Old Bulgarian Language. On that base is clear that Bulgaria became the Mother-country of Slavic-Orthodox Cyrillic civilization.

Bulgaria also has its Golden Age during the reign of Tsar Simeon I the Great - a Bulgarian ruler who ruled the First Bulgarian State from 893 to 927. His reign was also a period of cultural prosperity, later called the Golden Age of Bulgarian culture.

The Bogomilism

Another European cultural phenomenon with Bulgarian roots is Bogomilism. Bogomilism is mass anti-clerical, anti-feudal, reformist and dualistic religious movement, which originated in Bulgaria. It is an extremely interesting medieval phenomenon. At one point in history, along with Catholicism and Orthodoxy, it became the third largest Christian movement in Europe.



Priest Bogomil, the Founder of Bogomilism

Bogomillist Expansion in West Europe from X to XV century AD

Figure 8: Bogomilism in Europe
Sources: 1. https://3.bp.blogspot.com/-wGDZqy5W88Y/TdRFHPFlKVI/AAAAAAAAAE8/st4E1hhGVhk/s1600/bogomil-1.jpg, 2.https://www.youtube.com/watch?v=JoeQ-3-4f2k&ab_channel=WikiAudio

From the end of the 14th century for almost 5 centuries Bulgaria came under Ottoman yoke. Nevertheless, the country remains a State of high Spirit. Such spiritual centers as the Rila Monastery become hearts where the Bulgarian spirit was alive and the Bulgarian culture was developed.

Figure 9: Rila Monastery in Rila Mountain
Source: https://banskoblog.com/2019/03/the-rila-monastery-tour/

Instead of conclusion

The rich and deep socio-cultural traditions and significant spiritual achievements of both Bulgarian and Chinese people create the most favorable basis for multilateral and active cultural cooperation and intercultural exchange.

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STRENGTHENING THE COOPERATION BETWEEN BULGARIA AND CHINA BY BUILDING BACK AND FORTH SUPPLY CHAIN RELATIONSHIPS

Maria Vodenicharova*

Abstract:

The purpose of this study is to analyze the logistics market in Bulgaria and to outline the main trends in its development through cluster supply chain (CSC). Cluster supply chain is a special kind of enterprise network with feature of cluster and supply chain and is an important channel for enterprises close to the knowledge, resources, markets, and technologies. The research into cluster supply chains focuses on the theory of industrial clusters and plays an important role for their development and competitiveness. The report studied the relations along the supply chain – both forward and reverse, which will boost the development of clusters.

The traditional friendship between China and Bulgaria has a long history. This report will reveal new opportunities for strengthening trade back and forth supply chain relationship.

The methods of research analysis are: method for analyzing the strength of the forward and reverse relations along the supply chain; questionnaire method; statistical method for research of relations and dependencies.

Key words: logistics market, logistics companies in Bulgaria, cluster supply chain, relationship between China and Bulgaria

JEL**:** M21, L15

Introduction

Clusters have long been a feature of economic geography, but their influence on competition has grown with the shifting nature of competition and the restructuring of how companies operate.

Supply chain management integrates suppliers, manufacturers, customers to improve the long-term performance of individual firms and partnership, integration, Information sharing, Information quality (Sun Hee Youn and Paul Hong, 2008) (Bowersox, Closess, Cooper, 2002) (Ellram, L., Cooper, M., 1993). Successful supply chain management requires the integration of these value chain entities to create a cooperative and collaborative environment that facilitates information exchange and shared decision-making across the value chain (Berry, W.L., Hill, T., Klompmaker, J.E., 1999)

1. Literature review

The general concept of an integrated supply chain is typically illustrated by a line diagram that links participating firms into a coordinated competitive unit. Bowersox, Closess, Cooper illustrates a generalized model adapted from the supply chain management program at Michigan State University. (Bowersox, Closess, Cooper, 2002).

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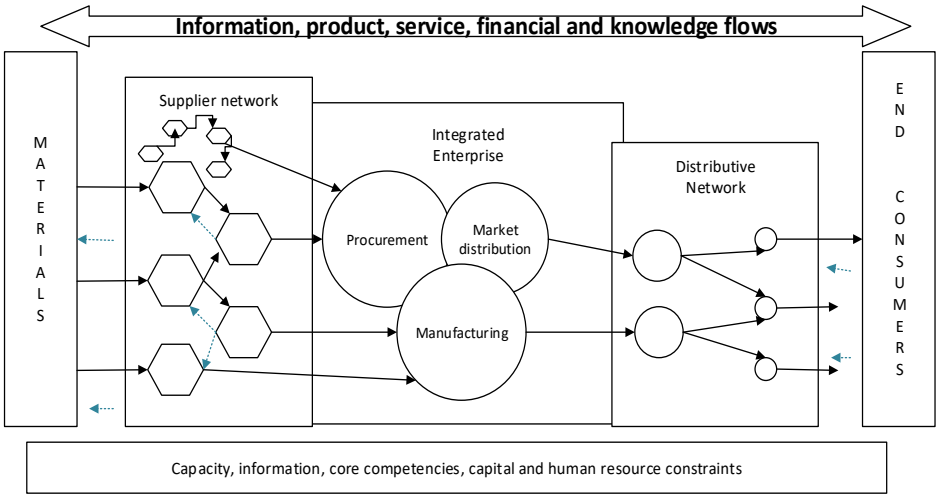

Figure 1. Generalized supply chain model
Source: Bowersox, Closess, Cooper, Supply chain Logistics management, McGraw-Hill Higher Education, First Edition, 2002

The generalized supply chain arrangement illustrated in Figure 1 logically links a firm and its distributive and supplier network to end customers. The message conveyed in the figure is that the integrated value-creation process must be managed from material procurement to end-customer product/service delivery. (Bowersox, Closess, Cooper, 2002). According to Donald Waters (Donald Waters, 2003) the simplest view of a supply chain has a single product moving through a series of organisations, each of which somehow adds value to the product. Knowing the complexity of the supply chain and the many participants that we may have in it, with the reverse material and information flows this chain becomes even more complex and the more levels and participants there is a supply chain , the more points there are at which reverse motion can occur.(Mihova L., 2020)

For SME (small and medium enterprises) the cooperation with other enterprises is often the only possibility to become part of global value chains. Forms of cooperation used are downright divers and of different intensity, however all forms of rather complex cooperation between businesses need one thing for their efficient and effective operation: management. (Günter Scheer, Lucas von Zallinger, 2007). Partnerships can lead to changes in operations. For example, the stability of a partnership might encourage suppliers to specialise in one type of product.

From a geostrategic point of view, the Republic of Bulgaria has a favorable geographical location, which provides an opportunity to create a bridge between the countries of Western and Central Europe, the Middle East, Western and Central Asia.

Despite the importance of the industry there is a lack of systematic and consistent data in logistics and the logistics sector in Bulgaria. In this study, logistics is seen as a set of services including planning, organization, management, execution and control of a company in the management of materials, information and other flows (from purchasing, production and warehousing to value-added services, distribution and reverse logistics).

All industries, both in industry and in the service sector, need to participate in inter-company cooperation back and forth supply chain. (Velikova, E., 2012) There are research in the field of logistics in the energy sector in Bulgaria, which examines issues related to compressed natural gas (CNG) physical distribution management to daughter CNG refueling stations (Stefanov, M., 2018), but the existence of cluster forms of interaction between participants in the energy supply chain have not been studied. There is still a serious shortage of primary data on the establishment and functioning of the supply chain in clusters in Bulgaria, on the strength of

internal and external links for the cluster, as well as relationship between China and Bulgaria on the impact of their influencing environmental factors and more efficient use of innovation potential at national and pan-European level.

Results of studies show that there are opportunities of development clusters for sustainable transport by liquefied and compressed natural gas along land routes of the Silk Road (Stefanov, 2018). Moreover, they can also be supported by the improved ability of logistics operators in China to provide higher level of service in international supply chains (Stefanov, 2020).

The cluster approach is based on the requirement for geographically located chains of independent organizations, but this principle is not widely advocated in organizations in Bulgaria. The methodology for cluster categorization includes a system for assessing the potential of the sub-sectors of the Bulgarian economy, which contains the following five factors.

Figure 2: Factors for assessing the potential of the sub-sectors in the Bulgarian economy

2. The structure of the Bulgarian logistics market

According to (Lambert. D., Stock, J., 2001), the theory about channels of distribution is a good foundation for studying the structure of SCs. According to this literature, the structure of channels can be seen as a function of the product's life cycle and an efficient communication network (Ellram, L., Cooper, M., 1993). According to (Duffy, R., Fearne, A., 2004); (Tuni, A., Rentizelas, A., Duffy, A., 2018), the key indicators which are set forth for the development of successful partnerships along the SC are related to the interactions in all business aspects, full electronic integration (possible now even for the smallest producers due to the heavily reduced expenditure at the modern level of communication and gained experience), sharing of information (aimed at improving and increasing the existing opportunities for production) and promotions and merchandising (it is a duty of the seller, but also a duty of the producer of fast moving consumer goods).

Logistics plays an important role in every economy and growth prospects of the sector are closely linked to economic growth. Logistics describes the entire process of materials and products moving into, though, and out of a firm. According to Dragomirov, in the conditions of intensified competition, the logistics companies are ready to respond to all the wishes of their clients. They have a high orientation towards their customers and show high flexibility which should be used more actively by trade and processing companies. (Dragomirov, N., 2016)

The activities related to logistics services are performed by logistics providers. Activities associated with transport and storage committed by employees in the service sector and industry are not included in the study. The most comprehensive source of data on the transport and logistics organizations within Europe is the database of Eurostat [1] from where you can retrieve information for the European transportation and logistics companies. The logistics sector includes divisions from 49 to 53. This list is used as a key assessment of a market structure analysis. The logistics sector includes:

Table 1: Distribution in the logistics sector

Number	**Name**
From "Division" 49	**Land transport and transport via pipelines:**
49.2	Freight rail transport
49.4	Freight transport by road and removal services
49.5	Transport via pipeline
От "Division" 50	**Water transport:**
50.2	Sea and coastal freight water transport
50.4	Inland freight water transport
From "Division" 51	**Air transport:**
51.2	Freight air transport and space transport
From "Division" 52	**Warehousing and support activities for transportation:**
52.1	Warehousing and storage
52.2	Support activities for transportation
From "Division" 53	**Postal and courier activities:**
	Other postal and courier activities

Source: Ecorys, Fraunhofer, TCI, Prognos and AUEB-RC/TRANSLOG, 2015, Fact-finding studies in support of the development of an EU strategy for freight transport logistics Lot 1: Analysis of the EU logistics sector, Lot 1: Analysis of the EU logistics sector, p.39

2.1. Market participants

According to the territorial directorate "Large Taxpayers and Insurers" the providers of logistics services in Bulgaria are 3% of the major companies in the country.

The national companies are divided into several market segments presented in Figure 1.1. Of the twenty largest logistics companies in Bulgaria 70% (14 companies) are national while the foreign logistics providers operating in the country are 30% (6 companies).

[1] Eurostat is a Statistical Office with the European Commission, which collects information on countries in the European Union and harmonizes statistical methods for data collection in different Member States. It is originally founded in 1958 with the European Community.

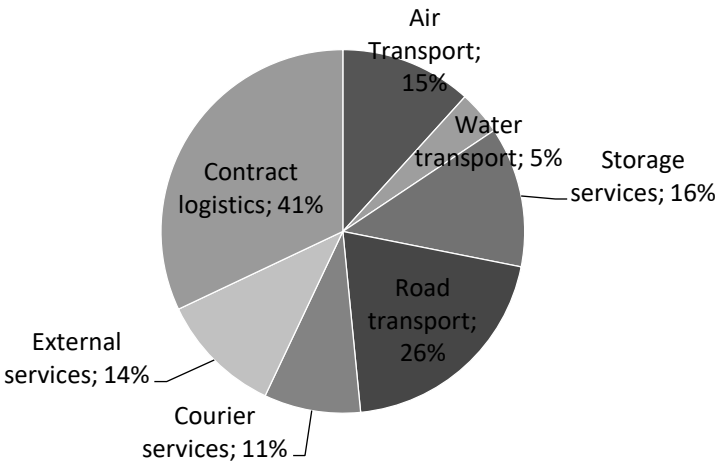

Figure 3: Transportation market segments

The graph shows the size and granularity of the logistics market as a whole. The market is determined by the logistic services and the items that are processed. One part of the segments of the market is related to the supply of transport (by sea loads and loads of courier parcels, express and courier services). A major share of the logistics market comes from the storage services where value-added services and storage are of great importance. The foreign services shown in the figure reflect the implementation of outsourcing of logistics services.

2.2. Employment in the logistics sector

Figure 4 shows an overview of the employees in the logistics sector of the country. The majority of people (76.3%) are employed in two sectors - in road freight transport (52.3%) and in activities supporting the transport (24%) - from the logistics subsectors.

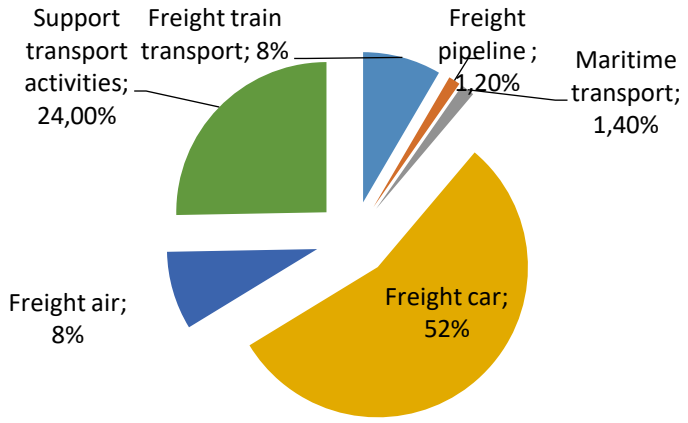

Figure 4: Employment in the logistics sector

2.3. Logistics Performance Index

The World Bank in 2007 launched an index, which measures the logistical infrastructure and environment for commerce in the country. The idea of a global index to show in which countries it is relatively easy to trade because of developed logistics infrastructure and in which ones the logistics services are less accessible or not sufficiently reliable by assessment of clients. The

measurement includes 150 countries. According to the presented LPI (Logistics Performance Index) data, it is clear that compared to 2007, when the first study was conducted by the World Bank, Bulgaria slipped from 55th to 63rd position in 2010 with 2.83 points and 58.8 percent coverage of the criteria compared to the best country in the sector. In 2012, according to the same survey, Bulgaria was now on 36th place, but in 2014 went on 47th position, although part of the criteria have been improved.

Bulgaria is in 72nd place in 2016, but in 2018 we return our position to 52nd place. China from 30th place in 2007 in 2018 is already in 26th place. While Bulgaria shows an unsustainable position, China is very consistent according to the Logistics performance index, improving its position every year. Bulgaria is second to last of the countries that comprise the Top 10 Upper middle-income. This group includes China, Turkey, Hungary, Romania and others.

Table 2: Logistics performance index in China and Bulgaria

Country	**Year**	**Place**	**Result**	**Customs**	**Infrastru cture**	**Interna -tional ship- ments**	**Logistics compete n-ce**	**Tracking and tracing**	**Time- lines**
China	2018	26	3.61	3.29	3.75	3.54	3.59	3.65	3.84
Bulgaria	2018	52	3.03	2.94	2.76	2.88	3.23	3.02	3.31
China	2016	27	3.66	3.32	3.75	3.70	3.62	3.68	3.90
Bulgaria	2016	72	2.81	2.40	2.35	2.93	3.06	2.72	3.31
China	2014	28	3.53	3.21	3.67	3.50	3.46	3.50	3.87
Bulgaria	2014	47	3,16	2,75	2,94	3,31	3,00	2,88	4,04
China	2012	26	3.52	3.25	3.61	3.46	3.47	3.52	3.80
Bulgaria	2012	36	3.21	2,97	3,20	3,25	3,10	3,16	3,56
China	2010	27	3.49	3.16	3.54	3.31	3.49	3.55	3.91
Bulgaria	2010	63	2.83	2,50	2.30	3,07	2,85	2,96	3,18
China	2007	30	3.32	2.99	3.20	3.31	3.40	3.37	2.97
Bulgaria	2007	55	2,87	2,47	2,47	2,79	2,86	3,14	3,56

Source: International lpi global ranking**,** Global Rankings 2018, http://lpi.worldbank.org/international/global,visited on 21.10.2020

By components of the index Bulgaria is best presented in the category of "respecting the terms of courier companies," and the worst - in "quality of transport and IT infrastructure" and "efficiency of the process of customs clearance." Bulgaria's score is higher than the average for the region of Europe and Central Asia, but almost all member states are ahead of us (only Lithuania is lower place while Malta is not included in the ranking).

3. Proposals for the establishment of a cluster with developed back and forth supply chain relationships, which would help expand relations with China

According to Binghua He**,** cluster supply chain (CSC) is a special kind of enterprise network with double feature of cluster and supply chain and is an important channel for enterprises close to the knowledge, resources, markets, and technologies. Cluster supply chain has special network structure and network relational which are different from general cluster and supply chain. In a particular industry cluster region, all kinds of enterprises and non-enterprise organizations around the core enterprises are connected to form local integration of supply chain through "trust and commitment" informal or formal contract. (He, B.H., 2016)

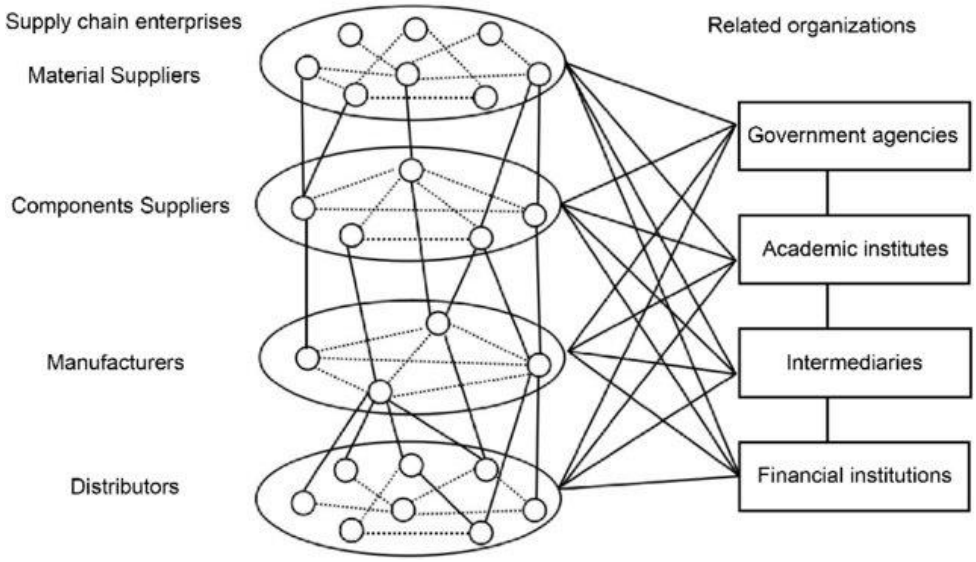

Figure 5: Cluster supply chain structure
Source: He, B.H. (2016) The Features and Evolution of Cluster Supply Chain Network. Open Journal of Business and Management, 4, 751-762.

It is important to carry out research together with cluster members to determine which services are already available in the market and which must be developed and offered by cluster management (subsidiarity). Existing products and services should simply be integrated into the cluster's range of products and services, with special conditions negotiated with the providers for cluster members (demand bundling). The cluster managers should try to consolidate the various services in an integrated "cluster service system" for which the cluster management office acts as a sort of "one stop shop". (Günter Scheer, Lucas von Zallinger, 2007). Figure 6 illustrates the increase in the average number of stock-keeping units (SKUs), the decrease in the average number of line items per delivery, and the increasing number of sales orders per channel a traditional retailer should be prepared to expect when engaging in e-commerce.(Hans Kourimsky, Marc van den Berk, 2014)

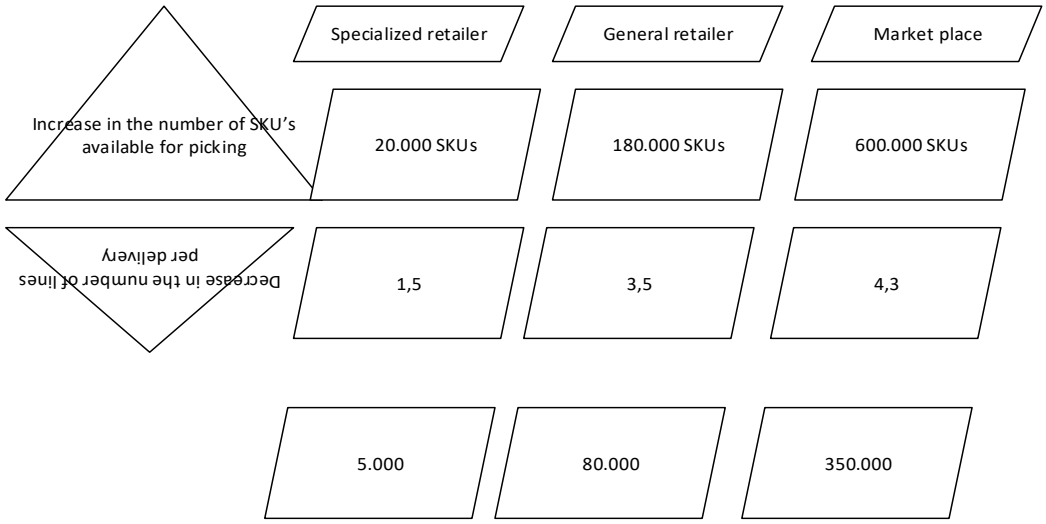

Figure 6: Fundamental effects of e-commerce engagement on a traditional retailer's supply chain
Source: Hans Kourimsky, Marc van den Berk, 2014

Based on these criteria, the most promising subsectors in Bulgaria are fruit and vegetable processing; ICT; textile articles; wine-making; General engineering; energy; tourism; woodworking and furniture, auto parts; high technologies; Transport and Logistics. The transport and logistics sectors are included in this classification, but there are only two logistics clusters in Bulgaria. Cluster organizations, on the other hand Automotive-bw (Germany), Bayern Innovativ (Germany), Clúster de la Indústria d'Automoció de Catalunya (Spain), Galician Automotive Cluster (Spain), European Automotive Strategy Network (The Netherlands), Automotive Cluster Bulgaria Association (Bulgaria), Pôle Véhicle du Futur (France), Serbian Car Cluster (Serbia) and Silesia Automotive & Advanced Manufacturing (Poland) are teaming up with the European Automobile Cluster Network (EACN) to set goals that aim to be awarded the Smart Specialization Award as a European Strategic Cluster Partnership (ESCP) and building and / or increasing trust between partners and their members. The clusters listed include more than 1,400 members - companies and research institutes, of which more than half are small and medium-sized enterprises (SMEs). In total, EACN member clusters have over 300,000 employees. The partners will concentrate their joint efforts on Industry 4.0 - Factory of the Future - Industrial Modernization.

The main priorities of cluster goals in Bulgaria are first and foremost related to modernization, growth and optimization of the supply chain, followed by growth and investment.

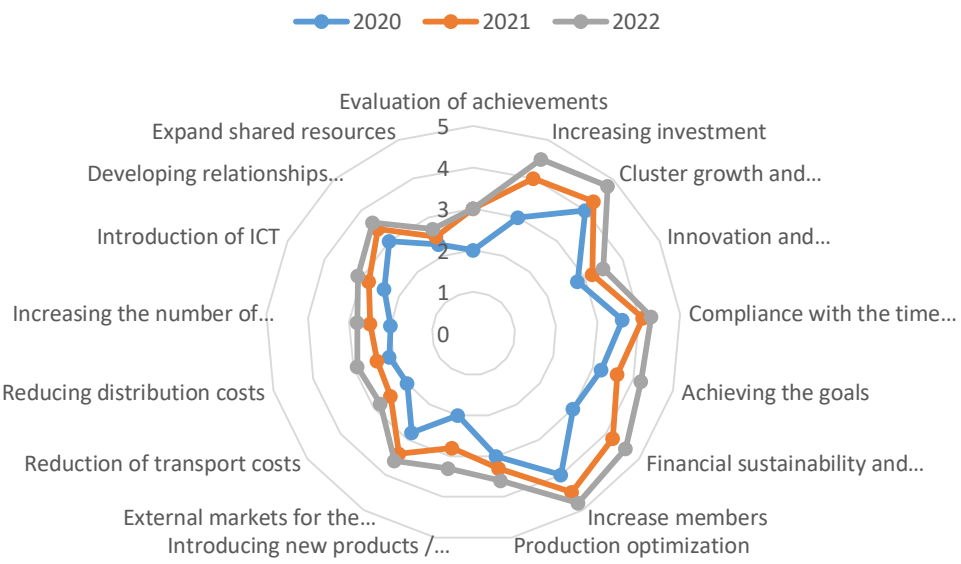

Figure 7. Radar chart of cluster efforts over the next years

The main indicator of the strength of the cluster external relations in terms of the purchases (along the reverse supply chain) shows the relative share of purchases in the cluster by external industries from the entire volume of purchases needed for production. The importance of the indicator is higher than 50% which shows that the external deliveries have higher value than the deliveries from the industries inside the cluster.

Conclusion

Logistics is an internationally oriented business and big players constantly expand their networks and services. The structure of the logistics market in Bulgaria is presented to the highest degree by road transport, which represents 75.2% of all logistics companies in the country and consequently has the highest significance in terms of the logistics sector. The sector of road freight transport still has palpable share, however, the companies in this sector are small.

The area of rail freight is dominated by companies that have significant medium size. The large size of the companies are in air freight, sea and coastal freight water transport, and transport by pipeline. In these sectors, market entry barriers for starting a business are high due to the necessary big investments in infrastructure and / or vessels and vehicles. The opposite is true for sectors of post and courier activities (mainly courier and express services). Low input market barriers generate a large number of competitors in these logistics sectors.

In conclusion, it can be noted that the logistics sector is extremely attractive for investment because of its poor development for the time being with the existing potential for the country. There is also a shortage of specialized warehouses across the country as well as lack of suitable areas for certain major tenants, leading to own construction of such premises. Last but not least, the low cost of construction and good prospects for employment and price levels lead to achieving good levels of return.

Bulgarian clusters have not built well developed forward and reverse relations along the supply chain because the results from the analysis of the strength of the inner-cluster relations in terms of sales, forward and reverse along the supply chain illustrate low importance and insufficient development. This is a good basis for expanding relations between Bulgaria and China.

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THE COOPERATION BETWEEN THE NORDIC COUNTRIES AND CHINA IN THE ARCTIC REGION

Katina Yoneva*

Abstract:

In 2014, China announced the new "One Belt, One Road" initiative, which was focused on cooperation with the rest of Eurasia and development of The Silk Road Economic Belt and the 21st-century Maritime Silk Road. In 2017, the project was extended with another Arctic component - the 'blue economic passage' (lanse jingji tongdao蓝色经济通道) as an important element of the future Chinese economic interests. In the following year, the Asian country released its official White Paper on the Arctic policy. With the growing economic relationship between China and the Nordic countries, the ambitious Arctic projects seem even more achievable than before. China has already shown interest in the Northeast Passage or the Northern Sea Route (NSR) as alternative maritime route connecting the Atlantic and Pacific Oceans. However, even with the expensive future investments in new deep-sea ports and shipping hubs, the goods landing in the European Arctic are still far from the hungry markets of the major cities further south. In this regard, the paper focuses on the side projects, which may be not principally significant in the frame of this major initiative, but still have their great importance for the Chinese interests in the Arctic region.

Keywords: Arctic, China, Nordic region, The Arctic Railway, North China town, Chunnel Helsinki- Tallinn, The Arctic corridor, Snow Dragon II.

JEL: F50

Introduction

The accelerated climate change in the last decade has brought many economic opportunities, making the Arctic region an important area for geopolitical competition. However, the growing interest in the Northern zone of other non-Arctic actors is one of the most prominent phenomena of our time. And while many countries still perceive the Arctic as a dangerous place which seems to exist too far away and not worth to be mentioned at all, China has not only developed its own polar policy but has also gained an observer status in the Arctic Council.

Nowadays, the observers often discuss the interest in the Northeast Passage, the Northern Sea Route (NSR)[1] or the future Transpolar Sea Route (TSR)[2] as new alternatives to the Suez Canal, forgetting the Chinese complex multifaceted approach towards the region. It is not questionable that the "Arctic Silk Road" might be the most important between the main four

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[1] The difference between the **NEP** and the **NSR** is that NEP connects the Atlantic and the Pacific Ocean along the northern coast of Eurasia, from Murmansk to the Bering Strait and includes the waters between the northern coastline of mainland Norway and Svalbard. NSR is only the main stretch of NEP in Russian territorial waters. It can be summed up as: NSR+ Barents Sea = NEP, but sometimes the NSR term is used as a synonym for the NEP.

[2] The Transpolar Sea Route (TSR) is a variable non-coastal sea-lane across the Arctic Ocean, including a route closer to the NSR but outside of the Russian Exclusive Economic Zone.

priorities, but the PRC has proved to be a valuable partner in scientific, economic and political developments in the circumpolar north. On the economic level, Beijing has shown great interest in Arctic resource exploration and extraction. On that matter, China identifies the Northern countries as Arctic "know-how" partners, which already possess technologies for direct access to the ice desert. For the local populations harvesting the arctic resources - minerals, oil and gas, fish and seafood have become the main livelihood. For the Chinese industries, however, operating in the High North can be a challenge. That is why the need for cooperation is acknowledged on both sides. The countries with territories above the Arctic Circle are often ready to forget about their national sovereignty rights, when it comes to receiving funds from non-Arctic benefactors, but doing business in the harsh conditions of the region requires a lot of money.

1. China's search for a sea gate to Europe

One of the major partners for China in the arctic zone is Norway. The country is very important for all kinds of shipping activities because 80 % of the maritime traffic in the Arctic passes through Norwegian waters. The Norwegian scientists also support China's polar research in Ny-Ålesund – part of the Norwegian territory of Svalbard. During the past 16 years, the PRC is gaining experience in "environment, glaciology, meteorology, marine ecosystems, meteorology, space–Earth measurements" (Jiangnan, 2019), operating in its own research station Arctic Yellow River, established by the Polar Research Institute of China.

Another point of interest for China is the city of Kirkenes. The little Norwegian town is ready to become the major logistical hub, including a massive port and train line to Finland. Moreover, while the government has concerns regarding China's commercial development in the Arctic, the local business is eager to welcome all kinds of Chinese investments. "Kirkenes is the first western harbor you meet when you start from Shanghai and go along the Russian sub-Siberian coast," (Northam, 2020) says proudly Rune Rafaelsen, the mayor of the small northern town. Another opponent to Rafaelsen's project is Washington. Regardless of its strategic location for the international trade development, Kirkenes is situated only 14 kilometers from NATO's northern land border with Russia. Therefore, in the last years, the city has become a point where the interests of four major players (China, USA, EU and Russia) overlap. While the Europeans label Kirkenes as the "North China town", the locals do not share their concerns. "I don't believe in trade wars," says Rafaelsen.

The new container terminal and a 300-mile railway to Rovaniemi (Finland) are planned to handle about 1 million containers per year, with 10 trains departing from Kirkenes every day. Nonetheless, the construction needs large funding amounts and may become the biggest Chinese investment in the region. Until now, Russia has been the biggest beneficiary of Beijing's Arctic interest, including the Yamal LNG project in Siberia and other smaller financial supports for oil and liquefied natural gas (LNG) enterprises in the Russian Arctic. In the process, the CCCC (Chinese State Communications and Construction Company) has opened an office in Oslo and COSCO Lines has planned to send several ships along the Arctic seaway in 2019. (Staalesen, 2019) However, during the latest pandemic conditions such investments might be classified as non-priority projects.

The Arctic Railway remains a controversial issue, involving the interests of many countries. Different proposals have been made with four different line options:

1. Narvik (Norway) – Kiiruna (Sweden) – Haaparanta (Sweden) – Tornio (Finland) – Kemi (Finland) – mainly traversing the territory of Sweden, with logistical hub in Norway;

2. Narvik (Norway) – Kiiruna (Sweden) – Kolari (Finland) – Tornio (Finland) - Kemi (Finland) - mainly traversing the territory of Sweden and Finland, with logistical hub in Norway;

3. Tromsø (Norway) – Kilpisjärvi (Finland) - Kolari (Finland) – Tornio (Finland) - Kemi (Finland) - mainly traversing the territory of Finland, with logistical hub in Norway;

4. Kirkenes (Norway) – Sodankylä (Finland) – Rovaniemi (Finland) - mainly traversing the territory of Finland, with logistical hub in Norway;

5. Murmansk (Russia) – Kandalaksha (Russia) – Alakurtti (Russia) – Kelloselkä (Finland) – Salla (Finland) – Kemijärvi (Finland) – Rovaniemi (Finland) - mainly traversing the territory of Russia and Finland, with logistical hub in Russia.

After long negotiations, the Kirkenes - Rovaniemi line was determined as "most feasible", with an estimated cost of €2.9 billion (€2 billion offered by the Finnish government and €900 million - by the Norwegian government). Kirkenese was selected based on its unique location – the small town is one end of the Norwegian route Hurtigruten (from Bergen), the Kirkenes–Bjørnevatn Line, the EV13 The Iron Curtain Trail, the northern terminus of the European route E6 and the European route E105. This final decision would provide a huge boost for Kirkenes' economy. In the last 2 years, the governments of the both Nordic countries have declared the project per contra as "unjustified". The decision was based not only on the high costs but also on the growing pressure from the Sámi Parliament, with a variety of environmental and cultural issues. In 2019, a new alternative emerged with private investments from China and the European Union. In 2020, China set on the negotiation table a new investment plan for building a Chunnel between Helsinki and Tallinn.

Initially, the idea faced opposition with the reminding, that the UK's Chunnel (the Channel Tunnel between the UK and France) turned profitable after 25 years. Nonetheless, China was determined to pay for this project €15 billion. The businessman Peter Vesterbacka from Finest Bay Area Development supported the plans, perceiving the Finnish-Estonian Chunnel more like a metro line rather than a train connection. The debate was stalled by concerns that the rail tunnels below the Gulf of Finland will not be profitable for Estonian trade markets. However, today's economic circumstances are not valid. Considering that the 100 km tunnel would be ready after long years of construction, the project seems beneficial for millions of people in the future. Thereby, the Arctic Railway and the Chunnel will finally fill the missing gap in the railway route between the Mediterranean and the Arctic Ocean, transforming the Arctic Corridor into a very attractive shipping alternative, connecting Finland and Europe to the deep-water ports of the Arctic Ocean.

2. The wide palette of Chinese interests - from polar research to infrastructure development

Another Chinese investment is aimed at mining or more specifically rare earth elements and uranium extraction (essential to high technology products). The Greenlandic mining sites are particularly appealing to the Asian companies, especially the mines of Kvanefjeld. The area is considered as the world's second-largest deposit of rare-earth oxides, and the sixth-largest deposit of uranium. The project supplants Russia for the first time as traditional recipient of Chinese funding. With the ongoing climate change, more parts of Greenland's coastal regions are opening up to potential mining projects (Lanteigne, 2019). Anyhow, China has to cooperate there with Australian companies. The strange partnership has already shown its benefits but PRC is looking for more than simple profit.

A breakthrough in the Sino-Greenland relations was made in 2016 with the establishment of research station on the island. The Chinese station will be not only responsive for the arctic research and climate change monitoring, but also for China's civil-military "BeiDou-2" satellite navigational system. In 2018, China has made an attempt to bid on a contract for new airports on the island. The bid raised certain concerns in Denmark and fears of the growing Chinese

economic power in the North. The government intervened and made a separate deal with Greenland to upgrade the airports. On the other hand, the event troubled the Greenlandic government by the Kingdom overstepping their prerogatives in the eternal affairs of the country. However, the Danish decision was supported by the United States which share the same concerns as the Scandinavian country.

Thule Air Base - the northernmost military base of the United States is located in the eastern part of island. The US has established the facility in 1941 to help Denmark defend its colonies against the German aggression. The military base in Greenland is home for the US Air Force (USAF) Space Command and the North American Aerospace Defense Command. Nowadays, the facility has its multifunctional aspect, becoming an operating zone for the 21st Space Wing's network of sensors that provides early missile warning, space surveillance and control. Under the terms of the 2009 Self Rule Agreement between Copenhagen and Nuuk, economic affairs were transferred to the Government of Greenland, but the emerging Chinese interest has worried Denmark. This topic appears as quite controversial because the Sino-Greenland economic projects might be an eternal issue but the Sino-Greenland relations are still in the area of the Danish competencies.

The case of Grønnedal is another key component of Beijing's emerging "Ice Silk Road". In 2016, the Hong Kong-based company "General Nice" offered to take over the abandoned naval base Grønnedal, but the Greenlandic infrastructure turns to be another sensitive question for Denmark. Additional concerned partner were again the United Stated. With the growing Chinese economic diplomacy in the Arctic, the Asian country has become an important player on the rare earth element market. Without these rare materials, the production of fighter jet engines, satellite communications systems, mobile phone or electric car motors would be impossible. For many years, the United States used only their own resources in the production, but now the county depends on imports, mainly from China (Schadlow, 2019). Gaining an access to the Greenlandic railroads, ports, mines and airports, Beijing threatens the American business and military interests in the region. Nevertheless, the US companies are already in special dependences with the Chinese enterprises, operating in Greenland, and the exchange of loans and capitals may affect the politics too.

Another controversial issue was the Huang Nubo project for a golf resort. In 2011, the Chinese businessman tried to buy land in the northeast part of the country. The Icelandic officials have some concerns that the real intent was in fact building a Chinese-controlled airfield or port (Auerswald, 2019) but the government was put under political pressure to accept the deal. On the same time, the PRC succeeded in other projects in Iceland, investing $1.2 billion in the Nordic country. In fact, the economic relationship between the two countries is growing steadily through the years. Many observers claim, that this phenomena starts in 2008, after the global credit crunch when the Nordic economy was in need for new capitals. Iceland's banks have their expectations regarding the European Union, but at that time, all neighboring countries were suffering from the financial crises. In 2012, Iceland and China signed a bilateral energy accord, followed in 2013 by a free trade agreement (the first between China and a European country).

The new Arctic cooperation between the two countries was initiated and later enriched by projects for a deep-sea port as a major shipping hub on the Northern Sea Route. The idea was never properly developed but in 2016, China's Polar Research Institute funded a northern lights research facility (Thiesin, 2016). China National Offshore Oil Company gained also a permission to explore Iceland's waters. For now, the cooperation between CNOOC and Iceland's Eykon Energy might still be in its initial stages, but it ensures supply through diversified resources in the long term (Juan, 2014).

The relations between Finland and China follow the pattern of other Nordic countries. The investments, coming from China, are available in this case, but various concerns are also

present. The Arctic topics received special attention during the visit of President Xi Jinping to Finland in 2017 and the follow-up visit by Finnish President Sauli Niinistö to Beijing in 2019. During the last years, many projects were planned, but few were actually implemented. Moreover, while the Finish government is willing to negotiate direct investments in the winter tourism and sport sector in Lapland, but China is more interested in infrastructure projects and arctic shipbuilding. A relevant example in the area is the lay of a marine fibre-optic cable connecting Asia and Europe. Per contra, the Chinese investments in the project are still under question.

3. China's Arctic fleet and the new icebreaking technologies

The Sino-Finnish cooperation succeeded at best in the design and construction of polar-class vessels and components. Ice Technology Partner - Aker Arctic has made a great effort in designing China's second polar icebreaker Snow Dragon II (Xuelong II) and corporation Wärtsilä has helped with the construction of engines, capable of operation in polar conditions. In fact, Finland is recognized as one of the best technological experts in designing polar-class vessels and Chinese corporations need the Nordic „know-how" and experience in the Arctic. However, the Finnish government is not ready to invite foreign investments into this sector.

In conclusion, the governments of the Nordic countries are often cautious in letting the PRC intervene in the regional economy of their arctic zones and sectors of particular importance for the national security. Secondly, there are concerns related to the environmental and social performance of the Chinese corporations in the region. The 2018 Chinese White Paper declares that "non-Arctic states such as China did have rights to economic activities including resource exploitation, in accordance with international law including the United Nations Convention on the Law of the Sea (UNCLOS)." According to the US Geological Society, a fifth of the world's undiscovered oil and gas resources may be in the Arctic. Until now, the big players in the Arctic were Russia, Canada and the USA. The growing political interests of China, however, may lead to geopolitical implications.

Until now, China played a role of a partner in all scientific, economic and political developments, but with the expanding Arctic policies, the country should envision also some security components to ensure the new investments. At the same time, the costs for adding "security" as an element to its Arctic policies could be higher than the economic benefits. Furthermore, the militarization of the Arctic from any country has no positive impact on Chinese interests. Currently, the main priority for Beijing is to ensure a stable economic presence in the region and secure its shipping interests in the context of the Belt and Road initiative. This project did not comprise the Arctic component until 2017 when the region was identified in an official government document as a 'blue economic passage' (lanse jingji tongdao蓝色经济通道), representing an important element of the future Chinese economic interests. In the following year, the Asian country released its official White Paper on the Arctic policy. Despite the concerns for military involvement of China, there are no indications for specific actions so far. The talks about potential Chinese port at Arkhangelsk or Kirkenes are still in progress. In fact, the 2018 White Paper promotes the peaceful use of the Arctic and cooperation in non-military security areas including emergency responses, search and rescue and emergency responses.

In that matter, China seems to be more prepared then all other countries with real Arctic territories. The Chinese icebreaker Xue Long (The Snow Dragon) became extremely popular during its rescue mission in 2013, when it helped saving 52 passengers from a Russian ship stranded in Antarctic ice (Martinez, 2013). The Snow Dragon got stuck itself, unable to make its way back to open waters, but the scientists were carried by its helicopter to the ship Aurora Australis in a five hours' extraction mission. Back then, the Snow Dragon was only a Soviet-

built vessel that China bought from Ukraine in 1993. Currently, China is preparing a new project to enhance its Arctic fleet. When The Snow Dragon II was announced, many experts believed that there would be some sort of technology agreement between the two states, because currently Russia is the only country, which operates nuclear powered icebreakers. However, only Chinese firms were allowed to issue bids. Meanwhile, China preferred cooperation with the Finnish company Aker Arctic Technology. The project was planned to conclude in 2019, when Snow Dragon II became the first home-built icebreaker. Snow Dragon II is 122 meters (about 400 feet) long and 22 meters (about 72 feet) wide and it will be added to the current fleet of two diesel-powered icebreaking vessels and its sibling Snow Dragon (Ma, 2017).

Last year, the observers announced that after Snow Dragon II China is planning to build the first nuclear-powered icebreaker aircraft carrier, incorporating the technology of Snow Dragon II for a new kind of vessel that the world has never seen before. In comparison to other countries, the Chinese performance in the Arctic region is remarkable. In fact, the USA have only two functional icebreakers, build in 2000 and 2006. The last two administrations of Barack Obama and Donald Trump showed little interest in Arctic environmental affairs. Even the idea of the US government to work on a revised policy paper on the Arctic strategy in the last years, was prompt mainly by concerns for the Sino-Russia cooperation and the development of the Northern Sea Route, than by an actual interest for the Arctic region.

Conclusion

Despite all complications, China gained more Arctic friends than enemies. Even Canada, which was in a diplomatic crisis with the PRC concerning the arrest of Huawei executive Meng Wanzhou in Vancouver, is willing to be engaged in a more closely partnership with China in the Arctic. For now, China has accomplished its first task to ensure a stable economic presence in the region. Nevertheless, there is more than that on the horizon. When talking about the Arctic, the question is not “when” but “who”. Who will be brave enough to invest without fear of failure or less profit, to show the way to new and unseen technologies and to be the pioneer in the future scientific discoveries?

For many years, the geopolitical research used the term “Arctic stakeholder” but lately a new definition entered the scientific literature – „Arctic power“. With the rapid climate change, the Arctic region has become an attractive alternative for many countries and multinational corporations. The tempting business opportunities often allure new Arctic players that pursue only commercial development. The true Arctic power, however, understands the importance of cooperation and partnership for sustainable use and exploration of the region. China has demonstrated so far its multifaceted approach towards the circumpolar north. The PRS has increased its investments in not only energy and mineral resources extraction and development of the sea routes, but also in polar research centers and environmental projects. In fact, the Asian country is less disturbed by budget and electoral cycles that other counties and it has the calmness to pursue its priorities in the long-term. Several observers believe that behind the construction of new icebreaker ships and the numerous Chinese research stations and shipping route projects lies the country's ambition to claim the land and the vast resources. In order to prove its worth for obtaining the title of an “Arctic power”, China does not need to own territory in the region, but being involved in the Arctic governance regime, promoting the international law and the Polar Code, as well as securing the future of the Arctic. Only in that case, the Chinese impact on the Northern region can be seen as geopolitical advantage for all.

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CHINA AND CEE: CHALLENGES AHEAD (VIEW FROM THE REGION)

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Abstract:

The region of Central and Eastern Europe (CEE) appears as a new strategic focus of China's diplomatic activity. The 16+1 format was launched in 2012 as a specific platform for the development of cooperation between China and the CEE countries. Since 2012, the attitude in CEE towards Sino–CEE relationship has had changing dynamics - from some initial uncertainty about the intentions and goals of China and about the rationales and essence of 16+1 initiative to enthusiasm for the prospects for their relations. Enthusiasm was then followed by some scepticism and even disappointment with the 16+1 format and its development. The paper argues that Sino-CEE relationship has the potential to further deepen and expand but in order to realize fully this potential countries need to objectively evaluate and tackle the existing challenges. Hence, this paper is focused on briefly evaluating three groups of challenges now facing the cooperation between China and the CEE countries. First, these are intra-regional challenges. Second, challenges related to developments within the European Union. The third group includes challenges arising from the growing geopolitical pressure on the CEE region.

Keywords: China, Central and Eastern Europe, geopolitics

JEL: F50

Introduction

Relations between China and the countries from Central and Eastern Europe (CEE) enter a period of growing challenges. Back in 2012, when the 16+1 format was launched by China as a specific platform for the development of Sino-CEE cooperation, there was initial uncertainty about Chinese intentions and goals. Still, there were expectations that the new initiative and the growing China's engagement with the region would help CEE countries to further develop their economies. China was perceived as an alternative source of investments in a period when the European Union was still fighting against the consequences of the 2008 crisis. However, this excitement was followed by some scepticism and disappointment with the 17+1 (Greece joined the 16+1 format in 2019 making it 17+1).

The paper argues that Sino-CEE relationship has the potential to further deepen and expand. In order to realize fully this potential, however, countries need to tackle the existing challenges that underlie the changes in the dynamics of this relationship. Hence, this paper is focused on briefly evaluating three groups of challenges now facing the cooperation between China and the CEE countries. First, these are intra-regional challenges. Second, challenges related to developments within the European Union. The third group includes challenges arising from the growing geopolitical pressure on the CEE region.

1. Intra-Regional Challenges

The first group of challenges is related to the CEE countries internal developments. These are challenges that ensue from the political and economic situation within the CEE countries. These challenges (political instability, economic and social troubles, etc.) differ depending on

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the specific historical, political and economic backgrounds as well as on the current processes taking place within each country. In terms of foreign policy, countries also follow different foreign policy priorities. Some of the CEE countries try to follow a more flexible foreign policy approach. Serbia, for example, simultaneously aspires to join the EU, develops strategic partnership with Russia and deepens its cooperation with China. There are also countries such as the Baltic states and Poland that are staunch U.S. allies.

Countries from the region have different position on sensitive issues such as Tibet and Hong Kong. The Baltic states' emphasis on human rights makes them different from other CEE countries that are less interested in this topic when dealing with China. The Czech Republic, Slovakia and the Baltic states, for examples, develops a certain level of separate relations with Taiwan and/or establish parliamentary support groups for Tibet. Other CEE countries, such as Bulgaria, strictly adhere to the "One China" policy.

Hence, some of the CEE countries are eager to further develop their relations with China, while others have more reservations about the future of these relations. Moreover, as A. Brînză notes, there are different rationale behind the relations of each of the CEE countries with China. Hungary seeks to further deepen its relations with Beijing as an "attempt to gain more leverage inside the European Union" (Brînză 2020). Poland strives for regional leadership and enhanced cooperation with China could be seen as an additional instrument in its effort to become a more active player in the process of agenda-setting in the EU.

Since 2012, the attitude in CEE towards Sino–CEE relationship and the 17+1 initiative has had changing dynamics. When China launched the 16+1 format eight years ago, there was some hesitation and uncertainty about the intentions and goals of China and about the rationales and essence of 16+1 initiative. This initial hesitation was followed by enthusiasm for the prospects for their relations. There were hopes that growing China's economic engagement could give impetus to the growth of the CEE economies.

Enthusiasm was then replaced by certain scepticism and even disappointment with the 16+1 format and its development. The reasons that underlies this change in attitudes are quite complex. Some of them are related to the belief - shared by part of the CEE societies and expert community – that the region *per se* is not valued by China. It is widely believed that China considers the CEE countries just as a "back door" and "testing ground" (Kaczmarski 2015) for China's penetration in the EU, as an "easy entry point into the EU*"* (Petkova 2020) providing for an easy access to the EU market or "the perfect playground" to test expertise and know-how in strategic fields (Leonte and Turcsány 2019). Grzegorz Stec from the European Institute for Asian Studies even emphasizes that the US Secretary of State Mike Pompeo has toured the CEE region in 2020, whereas Chinese Foreign Minister Wang Yi and Director of the CCP's Central Foreign Affairs Commission Yang Jiechi have not visited any of the CEE countries (albeit Yang did visit Greece) during their visits to Europe (Stec 2020).

There are already statements that the honeymoon period of good relations between the region and China, which had been maintained through economic ties, appears to be ending (Akita 2020). Though such statement seems exaggerated and premature, obviously there is a certain disappointment about China in the region. A growing discontent is associated with the slow progress in generating economic results. Despite the special credit line for investments in the region announced by China in 2012, still less than one-tenth of China's direct investment in the EU from 2000 to 2019 went to Eastern Europe. According to Germany-based Mercator Institute for China studies, between 2000 and 2019 out of around 160 billion euro of Chinese investments in the European Union (including the U.K.) only 9.4 euro was directed to the EU member states from the CEE region (Kratz et al. 2020). As emphasized by the authors of the study, in comparison, over the same period China invested more in Finland (12 billion euro) or the Netherlands (10.2 billion euro).

Moreover, many of the investments projects in the region launched by China since 2012 under the umbrella of the 17+1 initiative have not been fully realized. Only four out of around 40 Chinese projects were finished in the region in the last eight years (Brînză 2020). Even the 17+1's flagship project for the construction of a high-speed Budapest-Belgrade railway, which is also a key element within the Belt and Road initiative, was not implemented. The pandemic situation will further hamper the implementation of the planned projects as well as trade relations.

The 17+1 platform is relatively modest in its achievements in terms of CEE-China trade relations, as well. Though there was an increase in trade volumes between China and CEE countries, it's obvious that there is a gap between the enthusiastic rhetoric of the 17+1 and the economic reality on the ground (Eder and Mardell 2018).

The increasing disappointment among Central and Eastern European nations about cooperation with China is further nourished by the widely proclaimed narrative about the "Debt trap" danger. Munich Security Conference 2019 report is one of the documents issued by Western institution that draws attention to the growing Balkan countries' indebtedness to China and "Beijing subjecting Montenegro to 'debt-trap diplomacy" (Munich Security Report 2019: 35). Despite the fact that the increased Montenegro's indebtedness has not translated into significant Chinese political influence, this narrative is still not debunked in the region.

In terms of public attitudes, people in the region are divided in their opinions of China. Pew Research Center Global attitudes survey conducted in 2019[3] shows that more Bulgarians, Greeks, Poles and Lithuanians have favorable than unfavorable views of China; Hungarians are nearly evenly divided, whereas a plurality of Slovaks and a majority of Czechs have unfavorable views of China (Silver et al. 2019).

2. EU's internal challenges

EU's reaction to the 16+1 format was one of irritation and criticism. The initiative was assessed as an assault on the EU foreign policy unity and part of the Chinese plan for the expansion of its influence in Europe (Turcsányi, 2014).

Such reaction is exaggerated as obviously, the EU supremacy in the region is not rivaled. The EU project enjoys a full dominance both in the CEE countries that are members of the Union and the countries that are not members but apply for membership (countries from the Western Balkans). The EU membership is still seen as a guarantee for security, stability, development and source of the so needed funds. Therefore, the CEE countries – both EU members and non-EU countries - are interested in EU unity, cohesion and prosperity. Neither has China an interest in a weakened European Union. For China, the EU is an important market, source of technologies. What is more, there is no clear strategic competition between Brussels and Beijing.

Still, the reaction of Brussels has revealed the EU economic, political but also geopolitical concerns. Godement and Parello-Plesner point out: "From a European perspective, it may seem as if the Chinese are exploiting Europe's soft underbelly. The danger for Europe is that there will be a kind of 'China lobby' of smaller member states within the EU" (Godement and Parello-Plesner 2011: 2). There are concerns that China follows a divide-and-conquer strategy. The fear is that China's growing presence in the south-eastern part of the continent will further strengthen its leverage on the EU.

There is a certain level of hypocrisy in the position of the West European countries. The former Minister of foreign affairs of Poland Radoslaw Sikorski (as cited in Stec, 2020) noted that "Western Europeans have their longstanding commercial relationships with China […] and

[3] The survey included seven countries from the CEE region – Bulgaria, Czech Republic, Greece, Hungary, Lithuania, Poland and Slovakia.

they are not letting us, Central Europeans into those relationships […]. Perhaps it [17+1] should be phased out, but on one condition – that the rest of the European Union starts abiding by the Lisbon Treaty and conducts policy towards China in common." As statistics indicate Germany, UK and France are the biggest recipients of Chinese investments, whereas Chinese trade and investments in Central and Eastern Europe remain modest and the strength of China's economic presence in the region is greatly exaggerated by Brussels.

Moreover, difficulties in formulating a common EU China policy are caused not so much by the CEE countries policies toward Beijing as by the conflicting interest of some of the major EU members - some of them are eager to deepen economic relations; others are too critical towards China because of political system, human rights issues, etc.

Divisions within the European Union, primarily between "Old Europe" (Western Europe) and "New Europe" (post-communist East and South East European countries) precede China's penetration in the region. The CEE countries were perceived as the "losers" in the Cold War and the West, though starting to integrate them, demonstrated (and still demonstrates) a patronizing attitude and moral superiority. In the context of the EU integration, as Ivan Krastev and St. Holmes write, "the Central and East European countries were compelled, in order to meet the condition for EU membership, to enact policies formulated by unelected bureaucrats from Brussels and international lending organization" often neglecting the their uniqueness, national traditions and value system (Krastev and Holmes 2020: 19).

Throughout the years the Europe's East-West divide didn't disappeared. We still witness political and economic differences among the EU countries. The narrative of the East – West divide is further fostered by the lack of direction in some of the CEE countries caused by the liberal democracy crisis.

In the early 1990s, hopes for the global spread of liberal *democracy* were high. Francis Fukuyama argued that there weren't any viable systemic alternatives to Western liberalism. The European Union sought to impose the Western liberal order to the EU candidate countries from Central and Eastern Europe. In order to receive EU funding and become EU member, the candidates must meet the criteria regarding democracy principles, rule *of law, market economy*, and respect for human rights. However, as Ivan Krastev and Shephen Holmes noted, the transformation of Central and Eastern European countries gave rise to a repudiation of liberalism itself. The two authors go further and argue that the denial that any alternative to the Western model existed best explains the "anti-liberal backlash" and "the anti-Western ethos dominating post-communist societies today" (Krastev and Holmes 2020: 11-12). They also points out: "Liberal democracy's post-Cold War afterglow has also been dimmed by the Chinese economic miracle, orchestrated by a political leadership that is neither liberal nor democratic." (Krastev and Holmes 2020: 6). This statement illustrates Western liberal elites' concern that the growing number of internal problems facing liberal democracy in CEE countries, further exacerbated by the 2008 global crisis, could allow the populist forces in CEE to further contest "the ideal superiority of the West's political model" (Krastev and Holmes 2020: 40). As long as the Western system does not deliver properly, alternative models of development - China's one, among them - could further strengthen its attractiveness.

EU's apprehension is demonstrate in the European Commission joint communication "EU-China – a strategic outlook", which included a new assessment of EU's relationship with China. China is described as not only "a negotiating partner with whom the EU needs to find a balance of interests, an economic competitor in the pursuit of technological leadership" but also as "a systemic rival promoting alternative models of governance" (European Commission 2019). It seems that the European Union continues to seek a balance between mutually beneficial cooperation with the Chinese state and concerns arising from China's growing economic and political power and expansion.

3. Rising geopolitical pressure

The region of Central and Eastern Europe is a convenient platform for projecting of economic, political, geopolitical and security interests in other geo-strategically important regions such as Europe, Middle East, North Africa. It is also a significant point of intersection of different infrastructure corridors connecting Europe and Asia.

The geopolitical confrontation in the region is growing. The main actors in this competition are US, Russia, EU (Germany), Turkey and China, which is already one of the leading emerging actors in the region. Every one of these actors follows its own agenda, interests and often conflicting goals. Hence, competing projects for the region overlap and compete causing different cleavages among the countries.

Russia counts on the historic, cultural and political ties with the peoples in Southeast Europe and tries to further expand its economic and political influence in the region. However, Russian efforts in the region presently coincide with those of China. The EU has economic supremacy but the United States is the key external actor in the region at the beginning of 21st century. After a period of a relative disengagement from the region, the United States put back the region in the center of its geopolitical attention.

Rising tensions in the China-US relations have their implications for the region and strongly affect Sino-CEE relationship. Many of the recent developments surrounding different China-backed projects in Central and Eastern Europe need to be assessed exactly in the wider context of regional and global rivalry between the US and China.

The US diplomacy was quite active in Central and Eastern Europe in the last one year, exerted pressure on different CEE countries and achieved some significant results that directly concern Sino-CEE relations. In May 2020, for example, the Romanian government cancelled deal with China for the construction of two nuclear reactors units at its Cernavodă nuclear power plant, which was one of China's biggest projects in the region. It seems that the project could be transformed into an American one as Romanian minister of economy explained that a new reactor could be built by a NATO partner (Necsutu 2020). Similarly, Estonia halted plans to build an underwater tunnel connecting Tallinn and Helsinki over security concerns about the involvement of a Chinese company (Ummelas 2020).

In October 2020, during his visit to Bulgaria the US State Department's Assistant Secretary for Political and Military Affairs R. Clarke Cooper said that Russia and China are interested in "conquering the Black sea". He advised the Bulgarian political elite to deny China's access to its ports, otherwise it could "lose its national sovereignty" (Ivanov 2020).

Against the background of the efforts of Huawei to expand its 5G network in the region over the last few years, the US administration has increased its pressure on the CEE countries to reject the Chinese company classified as a security threat. Romania was the first country that signed a memorandum of understanding (MoU) with the United States that targeted Huawei's participation in the 5G network, despite not mentioning it directly. Its steps were followed by Poland. Warsaw even arrested a Chinese employee of Huawei on suspicion of spying (BBC 2019). More than half of the members of the 17+1 mechanism have either signed such MoUs or joined Washington's "Clean Network" initiative of the Trump's administration aimed at preventing Huawei access to European markets.

Washington has recently increased also its support for the Three Seas Initiative launched by Polish and Croatian presidents Andrzej Duda and Kolinda Grabar-Kitarović back in 2015. The initiative is a platform to discuss joint transport, energy and digital infrastructure projects for the countries between the Baltic, Black and Adriatic Seas. Eleven of the 12 EU countries participating in this initiative take part in the 17+1 format, as well.

Concurrently, Chinese Prime Minister Li Keqiang of the People's Republic of China put forward a similar idea during the 4th China-CEEC Summit in November 2015. Then, the

declaration signed at the fifth Riga Summit within the 16+1 format in 2016 affirmed the support of the participating countries for "the cooperation initiative involving the ports at the Adriatic, Baltic and Black Sea and along the inland waterways" (Secretariat for Cooperation between China and CEE Countries 2016). So similar yet so different – the Chinese and the US-backed initiatives demonstrate a clash of different approaches and visions for the region. The Riga declaration states that Adriatic-Baltic-Black Sea Seaport Cooperation would contribute to closer EU-China relations. The Three Sea Initiative is rather focused on building walls against China and Russia. The ideas launched in the Riga declaration, however, were not practically developed. They were overshadowed by the US-backed initiative.

The US administration consciously uses the Three Seas Initiative as an instrument to counter Chinese investments and other activities in 17+1 countries. During his visit to the CEE region, US Secretary of State Mike Pompeo emphasized the efforts needed "to counter malign actions of Russia and communist China" (U.S. Department of State 2020). In October 2020, the US House of Representatives Committee on Foreign Affairs unanimously passed a motion for a resolution supporting the Three Seas Initiative. The resolution declares: "Whereas the Three Seas Initiative provides a positive alternative for financing for transport, energy and digital connectivity projects in the Three Seas region to China's 17+1 and Belt and Road Initiatives, which have exported corruption, debt traps, and poor labor and environmental standards" (House of Representatives 2020).

Conclusion

The Sino-CEE relationship enters a new phase of increasing challenges and tensions. The uncertain prospects for the development of this relationship relate not only to the developments within the CEE countries and China itself but also to power relations in the region.

Diversity in positions, policies and priorities among CEE countries not necessarily impedes Sino-CEE cooperation but it could undermine further development of 17+1 format and the integrity and effectiveness of its initiatives. The retreat in the EU-China relations (from "comprehensive strategic partnership" to "strategic competition") also strongly affects the relations between the countries from Central and Eastern Europe and China. One of the most difficult tasks for the governments in the region will be to find the right balance between national and (common) European interests. The increased interest of the major powers towards Central and Eastern Europe adds further dynamism to the processes in the region itself. Against the background of the rising US pressure, it will be more and more difficult for the CEE countries to balance in their foreign policy and to achieve a delicate balance between economic interests and benefits brought by Chinese investments, on the one hand, and political pressures, on the other.

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TRANSPORT ALTERNATIVES IN SUPPLY CHAINS BETWEEN CHINA AND CEE IN THE POST PANDEMIC WORLD

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Abstract:
This paper discusses the modal shifts in freight transportation between China and CEE caused by the pandemic and the opportunities for the future development of the land corridors in the post pandemic world. After a brief introduction to the Belt and Road initiative, a literature review of the existing researches on evaluation of the current and emerging trade corridors is performed. An analysis of key indicators for the supply chains transportation, including cost, time, availability and reliability is made for the period before and during the pandemic. The results demonstrate that the pandemic impacts the development of the NELB corridor, helping this initially government-driven initiative to become market-driven sooner than expected.

Key words: BRI, COVID, supply chains, transport mode

JEL: R42, R41, L91

Introduction

Today different factors impact the decision of transport modal choice in global supply chains. Decisions based solely on shipping costs no longer meet the needs of today's business. Air transport is expensive, but more and more manufacturing companies prefer this mode because of the greater flexibility, reliability and lower inventory cost. Less expensive option for moving goods is by sea, but the lower cost of the transport comes with extensive transit times associated with the higher inventory costs. Just a few years ago these were the only two options for exchanging goods between China and Europe. An initiative started in 2013 by the Chinese president Xi Jinping laid the foundation of a third option – rail transportation. The Belt and Road initiative (BRI) includes the development of 6 major land corridors ("New Silk Road Economic Belt") and 1 maritime corridor "21st Century Maritime Silk Road" to enhance the diversity and connectivity of the international logistics network of China. The significance of the New Silk Route Economic Belt is the rail mode, i.e., the freight train service connecting China to Europe through Russia and Central Asia and this is the most relevant route for CEE from the BRI corridors.

Maritime transport is currently the dominant mode of cargo transport between Asia and Europe. At the same time however, the international shipping industry faces great uncertainties. Factors such as fluctuation of the oil price and new environmental regulations are making the market very unpredictable. The higher security risk along with the low reliability because of the nature of maritime transportation is another reason for shippers to consider different modes and look for alternatives. Air industry is also facing challenges with the oil prices, but also capacity demand and protectionism. In addition, the COVID pandemic seems to create even more obstacles and uncertainties for the air and maritime sectors. The New Eurasia Land Bridge Economic corridor (NELB) is in between the sea and maritime transport in terms of transit time and cost with a speed advantage by speed against sea and price advantage against air, thus it

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seems to fit a market niche in modern supply chains with great potential to grow its market share (Schramm and Zhang, 2019).

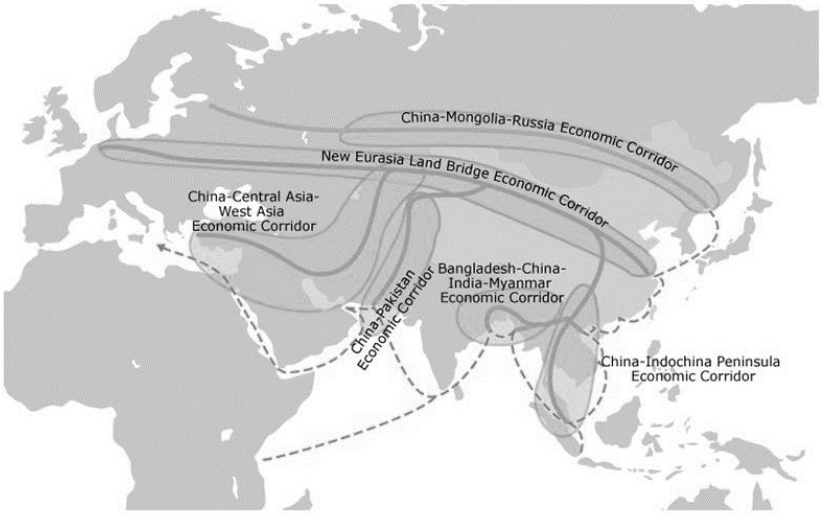

Figure 1: The Belt and Road Initiative corridors
Source: Hong Kong Trade Development Council (HKTDC) Research

1. Methodology of research

The study aims to demonstrate the impact of the pandemic to the development of the New Eurasia Land Bridge Economic Corridor between China and CEE.

To achieve the goal the traditional scientific methods are used– analysis, induction, and deduction. Several factors, including cost /price, time, reliability, and flexibility are broadly used as criterions in mode choice (Yang et al., 2018) as they can be used to indicate the effectiveness of the transport process in logistics. First literature review of the existing researches on evaluation of the current and emerging trade corridors is performed for the abovementioned key indicators, followed by an analysis of same criterions during the pandemics.

2. Literature review

Recently, a considerable literature has grown up around the theme of BRI. The focus of recent research has been on topics related to economic and political implications and motivations of the initiative, logistics distribution flow forecasts, network constructions and improvements and logistics hub problems. Little attention is given to empirical studies related to the different transport alternatives decision.

A recent study has analysed the opportunities and challenges for the European transport system resulting from the BRI (European Parliament, 2018). Based on data gathered by desk research (Table 1) authors tried to estimate the extent to which cargo travelling by sea or air in 2016 might in future transfer to rail as a result of new and improved rail services, including those attributed to the BRI. Study suggested that if cargo sent by sea had a value higher than €85,000 per TEU, it would be more cost-effective to shippers to send it by rail. If cargo sent by air had a value under €550 per kilogram, it would be more cost-effective to shippers to send it by rail.

Table 1: Assumed air, rail and sea levels of service

Mode	Effective transit time	Unit transported	Price
Air	5 days	One kilogram	€2
		10 tonnes, or one 20-foot container (2 TEU)	€20000
Rail	16 days	One 40 foot container (2 TEU)	€4250
Sea	35 days port to port		€2000

Source**:** European Parliament, 2018

Schramm and Zhang (2019) have also used collected data (collected in 2017) to calculate the value of the cargo that is suitable to transfer to rail, but they divided the cargo in two groups based on its sensitivity. The service quality of NELB was examined based on transit times and transport costs and compared with the service level of other modes of transport. Different scenario analysis was performed based on the value of the cargo and its sensitivity and the authors concluded that transporting via NELB is faster than sea and cheaper than air. The results showed that even the value of the good might be lower (around €41000) then the proposed value by the European's parliament study, it is still more cost-effective to use rail instead. If the cargo is time-sensitive the value of the cargo might be as low as €21000 and still be cheaper using rail transportation. The route is good alternative to air for time-sensitive goods but also alternative to sea for low-value goods (Table 2). From the supply chain perspective, the value of short transit time should also be considered. Nevertheless, the route brings agility to supply chains, the authors concluded, it cannot be considered as competition to sea and air transportation, but another option. However, other factors like transit time reliability, service availability, environmental were not included in the comparison although these are considered as important attributes that impact the service quality as well.

Table 2: Results from scenario analysis based on Cargo Type

Time sensitive goods	Value range	Rail compared to	
		Sea	Air
YES	1.23 USD/kg to 10.78 USD/kg	Cheaper and faster	Cheaper
NO	2.46 USD/kg to 21.78 USD/kg		

Source: Adapted from Schramm and Zhang (2019)

Other factors as reliability and flexibility also play an important role for the mode selection. Reliability of transit time, for example, has been an important variable influencing freight transport these days. Any delays or uncertainties lead to additional inventory and less competitiveness of the business. Although the reliability is reported to be widely use in the selection process of transport mode previous studies do not take into account specific data based on the transport via NELB. In general, air transportation is the most reliable one, on the opposite side ocean vessels reliability is influenced by the weather. Rail mode is less reliable than air, but more reliable then maritime transport. With regards to the NELB reliability the work of different authors showed differences in transport infrastructure and customs law lead to

unpredictable border crossing procedures and documentation that slows down transit time thus affecting service reliability (Galushko, 2016) (Jakóbowski et al., 2018).

High reliability of service delivery in addition to the flexibility provided by more frequent scheduled block trains with more origin and destination terminals will bring agility to the supply chains. According to CRCT (2020) the China-Europe railway service connects 71 cities in China with 67 cities in 19 countries in Europe. However it is the uncertain reliability of the transportation infrastructure Wen et al. (2019) consider as a major threat for the future success of the BRI.

Lobyrev et al. (2018) analyses the different barriers that could affect international railway freight traffic grouping them in three categories: infrastructural barriers; border/customs-related barriers; administrative/legal barriers. Islam et al. (2013) also notes that running block trains across multiple countries in short might be quite complex due to legal environment, technical limitations, physical constrains, capacity limits, and political issues. Five years later, Schramm and Zhang (2019) discussed same barriers highlighting what has already been done to improve some of these barriers and give some practical recommendations for the barriers that still exist.

Such barriers impede shippers from using the new rail transport alternative. In spite of its proven advantages few years passed before a considerable growth was notices. And for some, this growth is due to the subsidisation of railway container traffic by the Chinese government. Brinza (2017) estimated that the average amount of subsidies varies from region to region and lies within the range of $3,500–4,000 per FEU. Kundu and Sheu (2019) analysed the effects of the government subsidies and concluded that an effective government subsidy mechanism based on shipper type (high-value goods shippers and low-value goods shippers) instead of merely based on freight container size per FEU, may facilitate the switching of shippers from maritime to rail in the BRI strategic context. Some barriers were already removed and it is considered that the consequent improvements has already become a factor in attracting new shippers.

Could the challenging 2020 also be considered as such factor and will the pandemic create opportunities for the NELB corridor in the post-pandemic world?

3. Transport alternatives during the pandemic

During the lockdowns in the summer of 2020 the economic life was highly impacted both in consumption and industrial production with the expected effect in global trade. The uncertainties that occurred in such a short time both in demand and supply, affected all the logistics activities in the supply chains.

Shipping industries during the pandemic

The shipping industry replied to the significant loss of volume since the beginning of the outbreak with reduced capacity. Hundreds of sailings in the early months of the pandemic was cancelled. This led to stable prices for the sector but reduced flexibility and reliability for supply chain participants. As the lockdowns were eased in some countries during the summer the inactive fleet rate slowly decreased. Still the maritime sector faces the prospect of an unprecedented number of vessels at anchor. (*Figure 2*) Statistics on port calls, ship sailing speeds, port traffic volumes, shipping schedules, capacity deployed and the time ships spend in port. could generate useful insights into the underlying macroeconomic trends (Hoffmann et al., 2020) and the shipping industry.

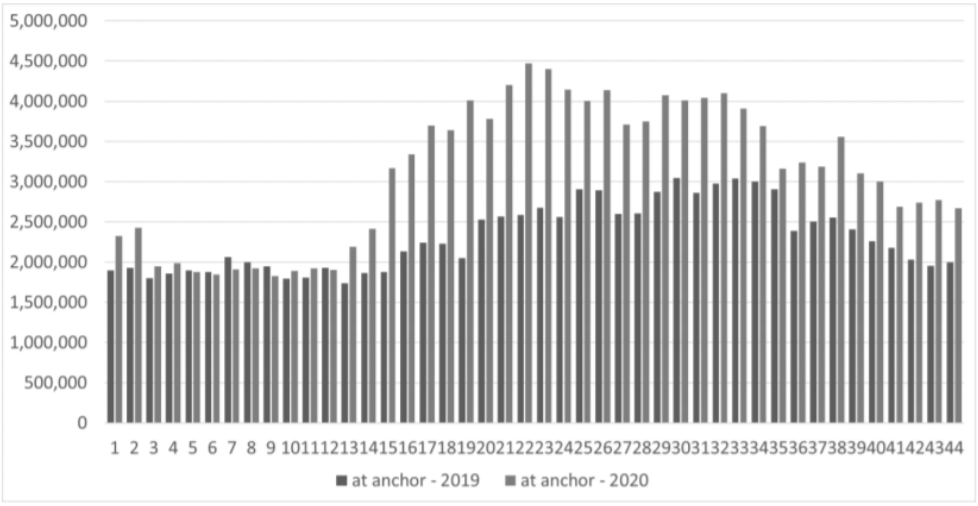

Figure 2: AIS data reports reporting navigational status "at anchor" in and around EU waters in 2019 and 2020 (weeks 1 to 44)
Source: European Maritime Safety Agency

Recent trends on ocean freight market between Europe and Asia Pacific showed continuing decries in capacity and at the same time increase in rates (DHL, 2020). Less sailings with the consequent of less flexibility and reliability, in addition to the higher rates is pushing shippers to look for another transport alternatives.

Airfreight industry

The collapse caused by COVID-19 pandemic has reduced passenger airline travel to unseen levels. – the revenue passenger kilometres fell by more than 90% year-on-year in April with the number of scheduled flights declined by almost 70% compared to the same period in 2019 (IATA, 2020). The freight aviation industry was not significantly affected because of the less stringent regulatory, with a decline of nearly 20% of the transported volume globally between March 2019 and March 2020. Yet the decreased capacity led to increase air cargo rates. Airfreight rates between China/Honk Kong to Europe were several times higher in the spring and even though they started to fall in the summer, are still about 25% higher than during last summer (*Figure 3*).

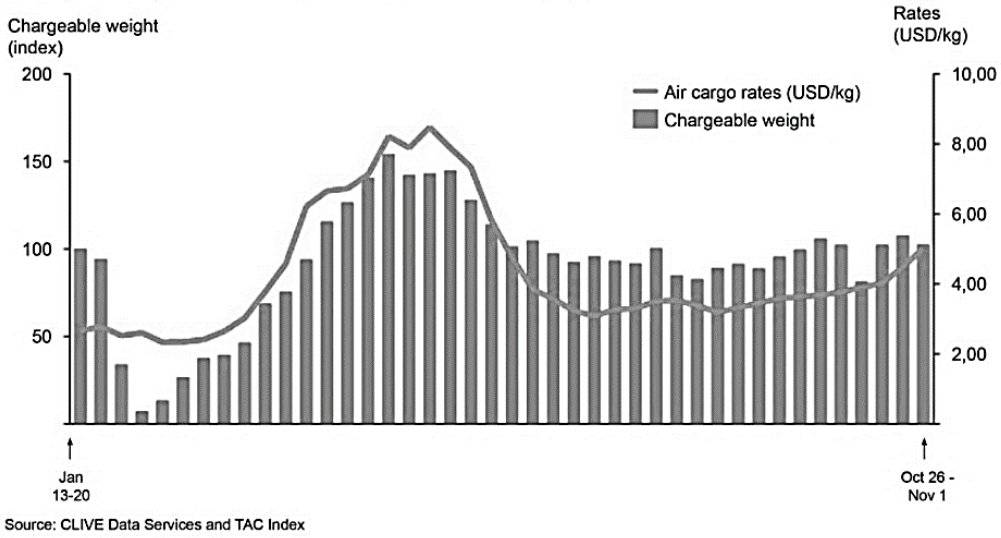

Figure 3: Rates from China & Honk Kong to Europe Jan – Nov 2020
Source: CLIVE

The soaring rates both for the maritime and airfreight transport alternatives in addition to the decreased flexibility and reliability is leading more shippers to consider rail from China to Europe as a less expensive alternative to air and more reliable to maritime. As of the beginning of November China State Railway Group Co., Ltd. reported a 10,180 freight trains between china and Europe this year transporting 927,000 twenty-foot equivalent units (Table 3).

Table 3: Freight trains between China and Europe (2011 – 2020)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020 (Jan-Nov)
China - Europe	17	42	80	280	550	1130	2399	3696	4525	10180
Europe - China	0	0	0	28	265	572	1274	2667	3700	
TOTAL	17	42	80	308	815	1702	3673	6363	8225	

Source: CRCT

BRI countries along the NELB corridor are now even more interested in working on issues that slow down operations. Recently, the rail services have been boosted by new technology, with the first train to use the Freight Transport electronic trading platform. The transit time between Ningbo (China) and Kolyadichi (Belarus) was reduced with 4 days by using solely electronic transport documents, transit declarations and electronic customs clearance (Railfreight, 2020). Nevertheless, this initiative was not related to NLEB corridor, such success shows the opportunities for greater competitiveness of the rail sector. Belarus like other countries from CEE play important role in linking the Asian and European markets. China is becoming more important and a strategic partner for CEE countries and strong bilateral cooperation with China is a part of efforts to diversify their international economic cooperation parallel with the growing role of China in the global economy (Jaklič and Svetličič, 2019). On the other side China – CEE countries trade in goods is increasing but slower than expected (Karaskova et al., 2020). It is difficult to say if transport alternatives have any impact on it. Traditionally, most trade cargoes from East Asia to central Europe are first of all transported by ship to the hub ports in North-western Europe. Then via rail or inland water cargoes are being transhipped to the end customers in Central Europe. Containers for South-eastern Europe are delivered mostly by trucks from Mediterranean ports. The additional legs add few more days to the already prolonged trip by the sea. The route is the same for the exports from CEE to China. Thus, reliable direct link to/from the heart of the central Europe would be an important enabler for the supply chains.

Conclusion

Global uncertainty creates challenges for traditional and well-established transport routes between China and Europe, maritime and air transport cannot meet the increasing business needs and adapt quickly enough to the dynamic context caused by the global pandemic. Based on a comparison in terms of as criterions in mode choice: cost, time, flexibility, and reliability, rail transport has the potential for developing transport alternative for supply chains. More competitive in time than marine transport, and more cost-effective than air transport, rail becomes a viable and balanced alternative to meet market conditions. The surging China-Europe rail routes despite the impact of pandemic is not an overnight success, but a result from multiyear hard work planning and support to this BRI strategic initiative from both sides. There

are still many barriers and opportunities for further improvements, but the current adoption shows that railroads are here to stay as many supply chain participants realise the advantages of this transport alternative. CEE solidifies both as an important transport hub on the New Silk Road and has an increased potential to grow further trade and economic partnership. The current research paper has limited overview as the pandemic is still ongoing but leaves the opportunities for further researches building upon current research findings to confirm the true potential of the rail transport alternative in the post pandemic supply chains.

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Part 2:

Rural Revitalization and Urban Rural Integration in China and Central Eastern Europe

ARTIFICIAL INTELLIGENCE IN THE CURRICULUM OF THE ECONOMIC UNIVERSITIES – PROBLEMS, CHALLENGES AND SOLUTIONS

Dimiter Velev*

Abstract:
Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and replicate their actions. The term may also be applied to any machine that behaves like a human mind in learning and problem-solving. AI evolves very fast to benefit many different industries. AI gradually moves to a cross-disciplinary approach based on mathematics, computer science, linguistics, psychology, etc. The technology can be applied practically to any sector and industry. However, the impact of AI in education will depend on how learning and competence needs to be changed, especially as AI will be widely used in economy and the society. The aim of the paper is to identify the existing problems in teaching AI in economic universities in Bulgaria, challenges that must be overcome and to provide provisions for suitable solutions in the curriculum.

Keywords: Artificial Intelligence, Data Science, Statistics, Programming, Economy.

JEL: C80

Introduction

Artificial intelligence (AI) is a rapidly growing information technology, which has an ever increasing impact on all fields of life. A simple Google search on the AI will reveal not less than 800 million references to it at the writing of this paper, from which one can choose a myriad of definitions of it. In the general case AI means the simulation of human intelligence in machines that are programmed to think like humans and replicate their actions. The term may also be applied to any machine that behaves like a human mind in learning and problem-solving (Jake Frankenield, 2020). AI evolves very fast to benefit many different industries. AI gradually moves to a cross-disciplinary approach based on mathematics, computer science, linguistics, psychology, etc.

In its development AI has already defined three major directions (Aditya Sarin & Quora, 2020) – Artificial Intelligence, Machine Learning (ML) and Deep Learning (DL), which can be presented by with the help of a Venn Diagram, Fig.1.

- AI – Any technique that enables computers to mimic human intelligence using logic, if-then rules, decision trees and ML and DL;
- ML – A subset of AI that includes statistical techniques that enables machines to improve at tasks with experience. ML includes DL.
- DL – A subset of ML, which is composed of algorithms that permit software to train itself to perform tasks like speech and image recognition by exposing multi-layered neural networks to vast amounts of data.

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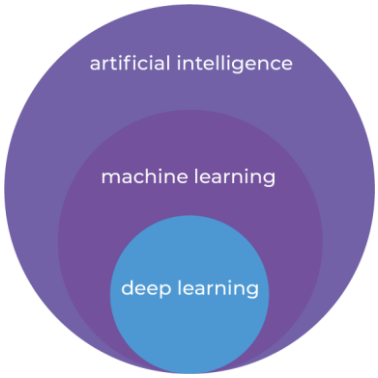

Figure 1: AI Venn Diagram

Machine Learning provides systems the ability to automatically learn and improve from experience without being explicitly programmed. It focuses on the development of computer programs that can access data and use it learn for themselves. ML has three subsets:

- Supervised Learning – the data is labelled and thus it helps prediction. SL has two types – Regression (linear and logistic) and Classification.
- Unsupervised Learning – the data is not labelled and the result is unknown, hence clustering is required.
- Reinforcement Learning – a certain part of the data is labelled, and some part is not labelled. This type of learning uses feedback to predict the correct result.

Deep Learning tries to implement the work of the human brain in processing data for detecting objects, recognizing speech, translating languages, and making decisions. Deep learning is able to learn without human supervision, drawing from data that is both unstructured and unlabelled.

Figure 2 shows the development timeline of AI, ML and DL (Özgür Genç, 2019):

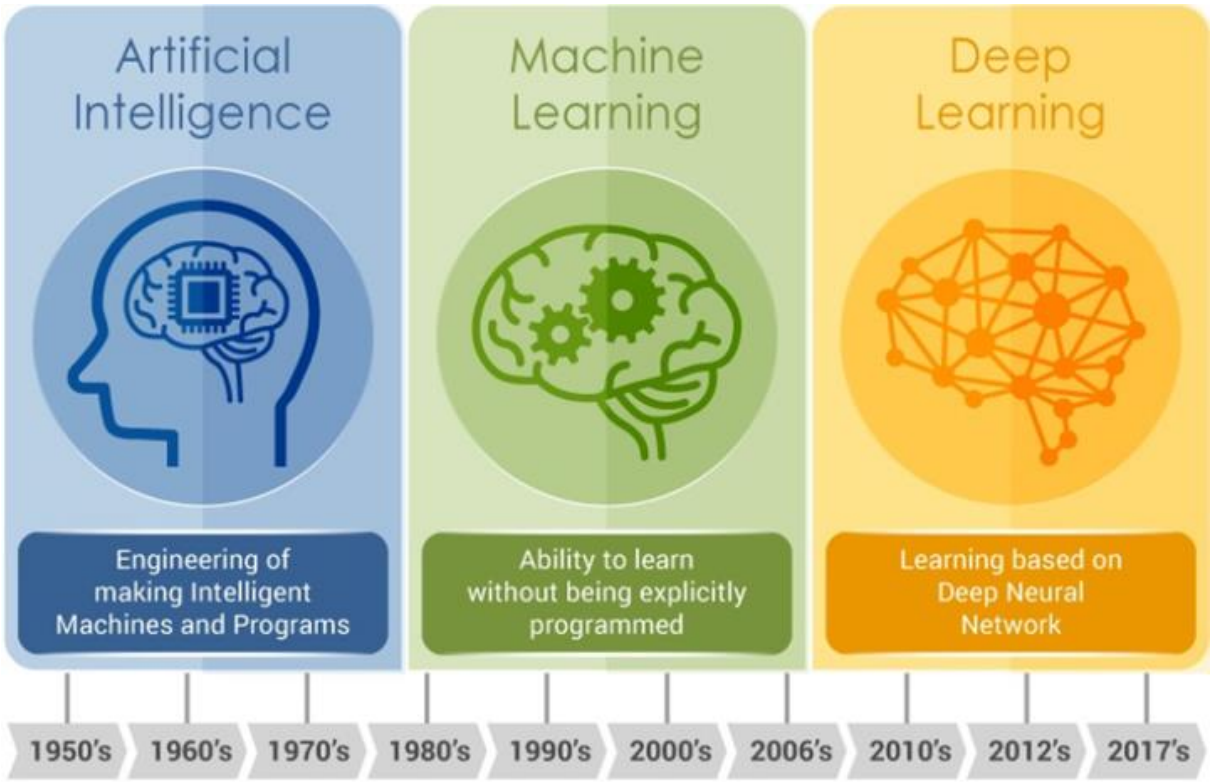

Figure 2: AI Evolution

What is presented till now is just the recent development of AI with its subsets in their evolutionary form. As it can be seen it has taken almost 70 years (1950 – 2020) to reach the current AI status. The efforts of countless researchers, the outcomes of many research projects and thousands of scientific publications constantly emphasize on the importance of this technology in our lives.

However the AI development does not end with ML and DL, regardless of the many real implementations nowadays. AI has a very long envisaged future for further enhancement and development, which could be summarized as follows in Figure 3 (Benny Bauer, 2019):

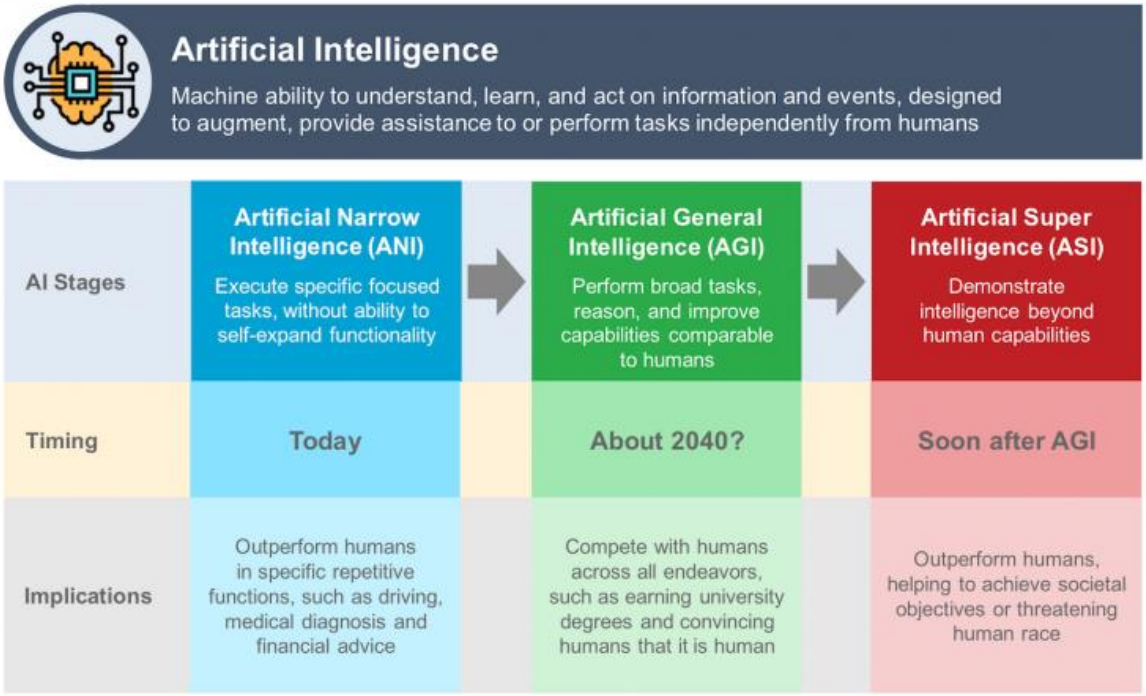

Figure 3: The Future Development of AI

1. Applications of Artificial Intelligence in Life

Currently AI has penetrated almost any sector of life and economy and it has already well established itself in some of the following major sectors (Aayushi Johari, 2020):

- Healthcare – Many AI devices and systems collects and processes a lot of data from the patients and monitor and register abnormal trends as well as they can guide doctors to make more precise decisions.
- Finance and Banking – Those institutions have already adopted AI systems to provide customer support, detect anomalies and credit card frauds; to determine future patterns in the market.
- Robotics – Modern robots are getting more efficient in performing tasks that earlier were too complex for them. The AI-systems can not just perform the required task but also monitor, inspect and improve them without any human intervention
- Agriculture – AI can help farmers get most from the land while using resources more sustainably. Issues such as climate change, population growth, and food security concerns have pushed the industry into seeking more innovative approaches to improve crop yield.
- Autonomous vehicles - The AI system could collect data from the vehicles radar, cameras, GPS, and cloud services to produce control signals that operate the vehicle in the best safe mode.
- Social Media - AI could be used for face verification, tagging friends, extraction of every possible detail from an image, determining user interests and future behaviour.
- Gaming - Virtual Reality systems empowered by AI and 5G technologies bring a new era of immersive experience in gaming.
- Education - AI can solve a lot of problems in the education sector, such as content retention and personalized learning, it can help monitor the psychological, mental and physical status of the students.

Figure 4 gives a pictorial overview of the most common AI-based solutions (TechVidvan):

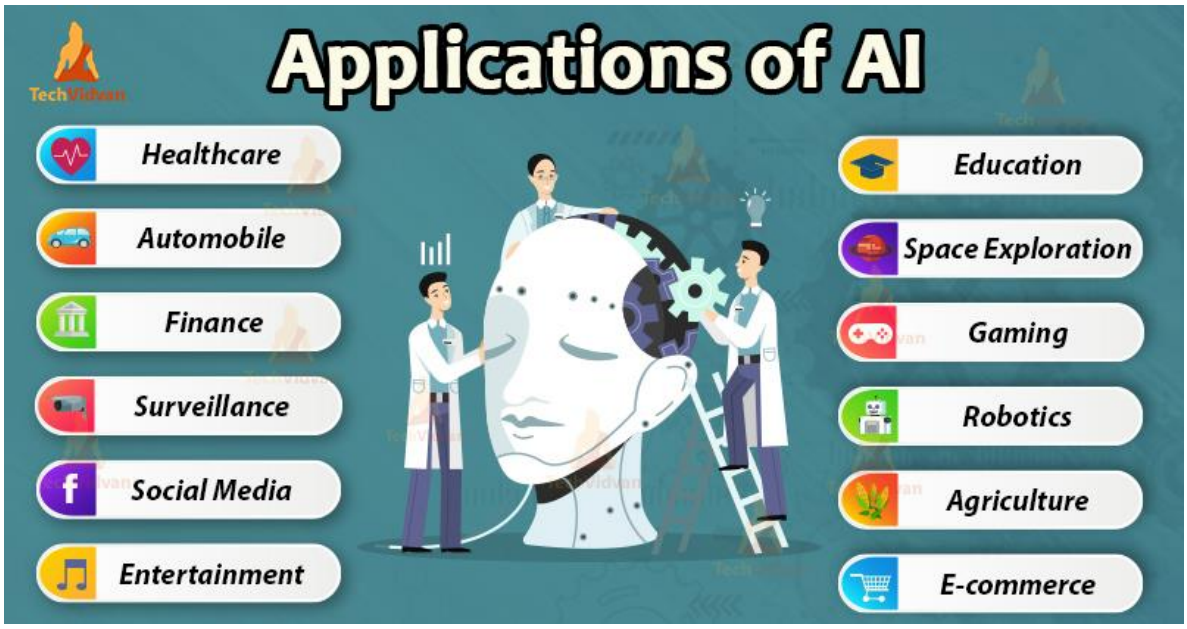

Figure 4: Most common AI applications

2. Knowledge, Skills and Tools for Educating in Artificial Intelligence

So far we have seen the definition of AI, its subsets, trends for future development, best and common applications in life. However, here comes the question who will develop such AI solutions and what kind of knowledge, skills and tools are needed for the developers to master such a vast field, what is the required time to become an AI professional. On the other hand AI gradually moves to a cross-disciplinary approach based on mathematics, computer science, linguistics, psychology, etc.

The prerequisites for learning the Artificial Intelligence could include the following subjects:

- Strong hold on Mathematics and Algorithms – Linear Algebra, Vectors, Matrix theory and Calculus are required (Madiha Jamal, 2020). AI use vectors to solve problems of regression, clustering, speech recognition, and machine translation. The internal representations of AI models, such as linear classifiers and deep learning networks are applied. Differential calculus, Multivariate calculus, Integral calculus, Error minimization and optimization via gradient descent, Limits, Advanced logistic regressions are all the concepts used in mathematical modelling
- Probability and Statistics - AI is an interdisciplinary field that utilized probability, statistics, and algorithms to learn from data. Both probability and statistics are related sections of mathematics that are based on analyzing the relative frequency of events (Kechit Goyal, 2020).
- Strong data analytics skills - AI and data analytics are connected because the first one can boost the capabilities of the second one to deliver deeper and better insights beyond what human analysts can do (Michael Dixon, 2019).
- Strong knowledge of Computer science, programming languages and coding, especially in Python/C++/R/.
- Physics, engineering and robotics.

In the too general theoretical case, a sufficient knowledge of mathematics, statistics, data analysis and programming could be enough for the AI specialist to an acceptable level.

On the application side, the most used tools are PyTorch (https://pytorch.org/), TensorFlow (https://www.tensorflow.org/), Keras (https://keras.io/), and many others. It is almost every day when a new framework or API come in the AI community. From programming language perspective, the most used languages for building AI applications are Python and C++.

What concerns books, tutorials or online courses, the AI interested audience has a superabundant choice. Printed and e-books appear with such a velocity, it is hard to track all newcomers. Numerous online tutorials offer quick introduction to different AI aspects. Free YouTube videos offer more precise acquaintance with AI, sometimes ranging to 20 hours content. Paid AI online tutoring services, such as offered by Udemy (https://www.udemy.com/), can coverup to 100 hours of specialized lecturing in AI. Free courseware, offered by famous universities, can substantially ruse the level of AI knowledge in a specific topic.

Regardless of such a volume of (self)teaching material, the most repeating question is how long does it take for one to be confident he/she is a proficient AI developer/specialist ? If we take the AI curriculum of different in their profile universities (humanitarian, technical, economic, etc.), it is evident that the number of required courses and the total length of education is different for the different type of universities.

3. General structure of the educational process in the Bulgarian economic universities

There are three major economic universities in Bulgaria and numerous economic departments in the other universities:

- University of National and World Economy (UNWE), Sofia, Bulgaria, https://www.unwe.bg/ with about 22 000 students;
- University of Economy, Varna, Bulgaria, https://ue-varna.bg/;
- Academy of Economics, Svishtov, Bulgaria, https://www.uni-svishtov.bg/.

The educational process is structured in the following manner:

- Bachelor degree - with a duration of 4 academic years (October – June). The first 2 years are dedicated to an introduction to different aspects of the Economic science, and mathematics, statistics, informatics. The 3rd and 4th years are meant for the students with specific professional orientation, such as Finance, Banking, Commerce, etc.
- Master degree – with duration of 1 to 1.5 years. Students could be university bachelors or such that have graduated from different other universities.
- Doctoral degree – regular Ph.D. students (with a duration of 3 years), irregular Ph.D. students (4 years) and free Ph.D. students (no time limitation).

Since the author of the current paper is from the Department of Information Technologies and Communications, Faculty of Applied Informatics and Statistics, UNWE, the described issues here will be focused on the students of UNWE only, although the education of the other two economic universities follows almost the same pattern.

Regarding the ITC point of view of the bachelor degree students, they are two types:

- Students that have one general course in Informatics;
- Students that graduate in Business Informatics (their 3rd and 4th year of education).

The paper will discuss the latter students and their possible AI curriculum.

The Bachelor students up to this moment have had 2 courses in Mathematics (60 academic hours each without labs) and one course in Statistics (30 hours lectures and 30 hours labs).

During their specialized ITC tuition, the Bachelor degree students master such subjects as Algorithms, Programming Languages, System Programming, Computer Architectures, Databases, Operating systems, Business Process Modelling, etc. Each course is 60 academic hours (45 minutes each), divided by 30 hours lectures and 30 hours labs. The predominant programming language is Microsoft's C# on the MS Windows OS. The total number of courses is 10 (5/5 by semester).

The ITC Master Degree students have also a total number of courses is 10 (5/5 by semester). There special additional courses are found, including a course in Artificial Intelligence (60 academic hours without labs).

Such an educational scenario raises specific questions in AI education.

4. Artificial Intelligence in the Curriculum of the Bulgarian Economic Universities – Problems, Challenges and Solutions

At the current arrangement of the curriculum of Bachelor degree it is impossible to make an even general introduction AI, only a simple mentioning about its existence is feasible.

In fact the author of this paper teaches 4 courses (60 academic hours without labs, each) in Artificial Intelligence to Master degree students:

1. Introduction to Artificial Intelligence for Business Informatics;
2. Processing Big Data with AI and Python for Statisticians;
3. Introduction to Artificial Intelligence for Economists;
4. Artificial Intelligence in Cybersecurity for Economists;

The courses are in accordance with the educational orientation of the students:

- Economists - course 3) and 4) above. Because of their educational non-ITC background, those two courses have a very general orientation – a simple theoretical introduction into AI, case studies of AI application and recommendations for use. The challenges here are to minimize mathematical, statistical and IT issues to those students, and to focus on the application side only.
- Statisticians – course 2) above. Although those students have graduated in Statistics and Econometrics, which supposed an excellent level of expertise in their field, they lack knowledge in big data (databases as a whole), Programming languages (Python more specifically). Hence it is very hard to convince them to get AI to the heart in the absence and understanding of some of the ITC fundamentals. The challenges here are to raise the IT issues to those students, and to focus on the acceptable programming knowledge only.
- Business Informatics – course 1). Although experienced with ITC theory and practice, one course in Artificial Intelligence is just not sufficient enough to delve into the matter. Their bondage with Microsoft propriety technologies limits significantly their view and knowledge of AI developments and solution outside Microsoft. The story repeats itself – one course covering the multifaceted AI world is just not enough. Another substantial challenge is the fact of 2 courses in Mathematics and 1 course in Statistics only.

The author of this paper has performed a long-time consuming and comprehensive research how UNWE should develop a real AI specialization for Business Informatics' students. A special moment in it is dedicated to the many findings for AI experience in education and

intentions of China, since the country is considered to be Number 1 in AI development and use (Xiaozhe Yang, 2019).

Based on all above, the author could propose the following solution for a real education in Artificial Intelligence for Business Informatics students - A full course in AI should be organized, 10 disciplines according to the current university regulations. Each discipline of 60 academic hours should be split into 45 hours lectures and 15 hours labs). The AI course structure with the corresponding disciplines should be organized in the following manner:

- Updated 1 discipline on Linear Algebra;
- Updated 1 discipline on Probability and Statistics;
- Data Science in 2 consecutive disciplines;
- Python language in 1 discipline;
- A general introduction to AI - 2 consecutive disciplines;
- A general introduction to ML - 1 discipline;
- A general introduction to DL - 1 discipline;
- A general introduction to NN – 1 discipline.

Although such a proposition for a full course in AI in is not the perfect one, it could give to a substantial extend a sound knowledge of the AI theory and understanding, with real practical implication.

As a further step in AI education for future professionals, a Ph.D. program in this domain could be established.

Conclusion

Artificial Intelligence has long ago ceased to be a hype word of day. Nowadays AI is rapidly entering every possible sphere of life. Hence, the task of the economic universities is to prepare experienced managers, who are of the AI possibilities, as well as Business Informatics professionals who could implement AI applications. Many of those challenges could be achieved by leveraging the AI disciplines no the non-ITC specialist, or proposing a full AI course for emerging ITC specialists.

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THE "FOURTH" PILLAR OF SUSTAINABILITY OF BULGARIAN AGRICULTURE

Hrabrin Bachev*

Abstract:

The goal of this paper is to assess the importance and level of the "fourth" pillar of agrarian sustainability in Bulgaria. It suggests a specific for the contemporary conditions of Bulgarian agriculture holistic framework for assessing governance and integral sustainability, including a system of adequate principles, criteria, indicators, and reference values. Results of a "large scale" testing of the elaborated novel framework are presented giving insights on governance sustainability of the country's agriculture at national, sub-sectoral, and regional levels.

The study has proved that it is important to include the "missing" Governance pillar in the assessment of the Integral sustainability of agriculture and agro-systems of various types. Multi-dimensional assessment of governance sustainability of the country's agriculture indicates that it is at a Good but very close to the Satisfactory level. Most critical for increasing governance sustainability at the current stage is progressive improvements in farmer's participation in decision-making, agrarian administration efficiency, administrative services digitalization, a possibility for lands extension, management board external control, level of informal system efficiency, subsidies in income, the extent of contract enforcement, acceptability of legal payments, and lands concentration.

There is considerable differentiation in the level of governance sustainability of individual subsectors of agriculture as the highest one is demonstrated by the mix livestock, vegetables, flowers, and mushrooms, and mix crop-livestock productions, while the lowest is in the field and mix crops. Similarly, the principles of good governance are the best applied in the North-Central and Northeast agro-regions, and only satisfactorily in the South-East and South-Central agro-regions of the country.

Having in mind the importance of holistic assessments of this kind for improving (management of) agrarian sustainability in general, and governance sustainability in particular, they are to be expended and their precision increased.

Keywords: governance, sustainability, assessment, agro-systems, Bulgaria

JEL:Q1

Introduction

Most frameworks for assessing sustainability of world's and Bulgarian agriculture apply three pillars (economic, social, and environmental) measurement (Bachev et al, 2017; Cruz et al., 2018; EC, 2001; FAO, 2013; Kamalia et al., 2017; Sauvenier et al., 2005; Singh et al., 2009). In recent years, incorporation of a new "fourth" *governance* pillar of sustainability is suggested and well accepted (Bachev, 2018; Bachev et al., 2019; Baeker, 2014; Burford, 2017; Ganev et al., 2018; Monkelbaan, 2017, 2018; UN, 2015) but not fully operationalized for use by decision-makers.

In Bulgaria there are some profound studies on the system of agrarian governance (Bachev, 2020; Bachev and Terziev, 2018; Georgiev, 2013; Marinov, 2019; Terziev et al., 2018). However, assessments of governance pillar of agrarian sustainability in the country and

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internationally are at the beginning stage (Bachev at al., 2019; Bachev, 2020; Sarov, 2019). The goal of this paper is to fill the gap, and evaluate the importance and level of governance pillar of agrarian sustainability in Bulgaria at national, subsectoral, and regional levels.

1. Methodology

Agrarian sustainability is to be perceived as the state and ability of agriculture to maintain and improve its governance, economic, social and environmental functions in a long period of time (Bachev et al., 2020). Governance sustainability characterizes the efficiency of the specific system of governance in an evaluated agro-system - EU, national, subsector, ecosystem, regional, farming organization, etc. Accordingly, a "good governance" means a superior governance sustainability, while a "bad" (inefficient) governance corresponds to inferior governance sustainability.

The system of governance consists of a number of district components all of which have to be included in sustainability assessment[4] - *institutional environment* ("rule of the game'), *market* modes and mechanisms ("market order"), *private* modes and mechanisms ("private order"), and *public* modes and mechanisms ("public order") (Bachev, 2010).

In order to identify individual indicators for assessing agrarian sustainability of Bulgarian agriculture a hierarchical system of well-determined Principles, Criteria, Indicators, and Reference Values for each Pillar is elaborated (Figure 1). The latter holistic approach adapts the SAFE Framework for Assessing Sustainability of Agricultural Systems (Sauvenier et al., 2005), and it is presented in detail by Bachev (2018), and Bachev et al. (2017, 2019, 2020).

Governance Sustainability Principles are "universal" and relate to the multiple functions of the agriculture representing the states of the sustainability, which is to be achieved (Figure 1). For the "specific" contemporary conditions of Bulgarian (and European Union) agriculture 5 (governance sustainability) principles, related to generic modes and mechanism of governance, are identified: "Good legislative system", "Democratic management", "Working agrarian administration", "Working market environment", and "Good private practices".

Governance Sustainability Criteria are precise standards for each of the Principle representing a resulting state of evaluated system when relevant sustainability Principle is realized. For contemporary conditions of the Bulgarian agriculture 20 Criteria for assessing diverse aspects of the governance sustainability are specified. For instance, for Principle "Good legislative system" three Criteria are specified: "Extent of the European Union policies implementation", "Beneficiaries' satisfaction of the European Union policies", and "Policies effects".

Governance Sustainability Indicators are quantitative and qualitative variables of different types which can be assessed in the specific conditions of evaluated agro-system allowing measurement of compliance with a particular Criterion. For assessing governance sustainability of Bulgarian agriculture a system of 22 Indicators are selected. For example, for Criteria "Policies effects" an Indicator "Level of subsidies comparing to the average for the sector" is identified.

Governance Sustainability Reference Values are the desirable levels for each Indicator according to the specific conditions of a particular agro-system. They assist the assessment of the sustainability levels giving guidance for achieving (maintaining, improving) sustainability. Depending on the extent of the Reference value achievement or overpass, the evaluated agro-system may be with a "high", "good", or "low" sustainability, or to be "unsustainable". For

[4] Most systems for assessing governance sustainability focus only on certain forms of governance (institutions, public, corporate, formal, etc.) and restrict to national or international level.

instance, agrarian system with a higher than the sectoral public support (level of subsidies) is more sustainable then others as far as “Policy effects” are concerned, and vice versa.

Very often individual Indicators for each Criterion and/or different Criteria, and Principles of sustainability are with unequal, and frequently with controversial levels. That significantly hardens overall assessment requiring a transformation into “unitless” Sustainability Index and integration of estimates (Figure 1). Diverse quantitative and qualitative levels for each indicator are transformed into an Index of sustainability applying appropriate scale for each Indicator (Bachev et al., 2019). The Integral Index for a particular Criterion, Principle, and Pillar of sustainability, and the Integral Sustainability Index of agriculture are arithmetic averages of Indices of composite Indicators, Criteria and Principles.

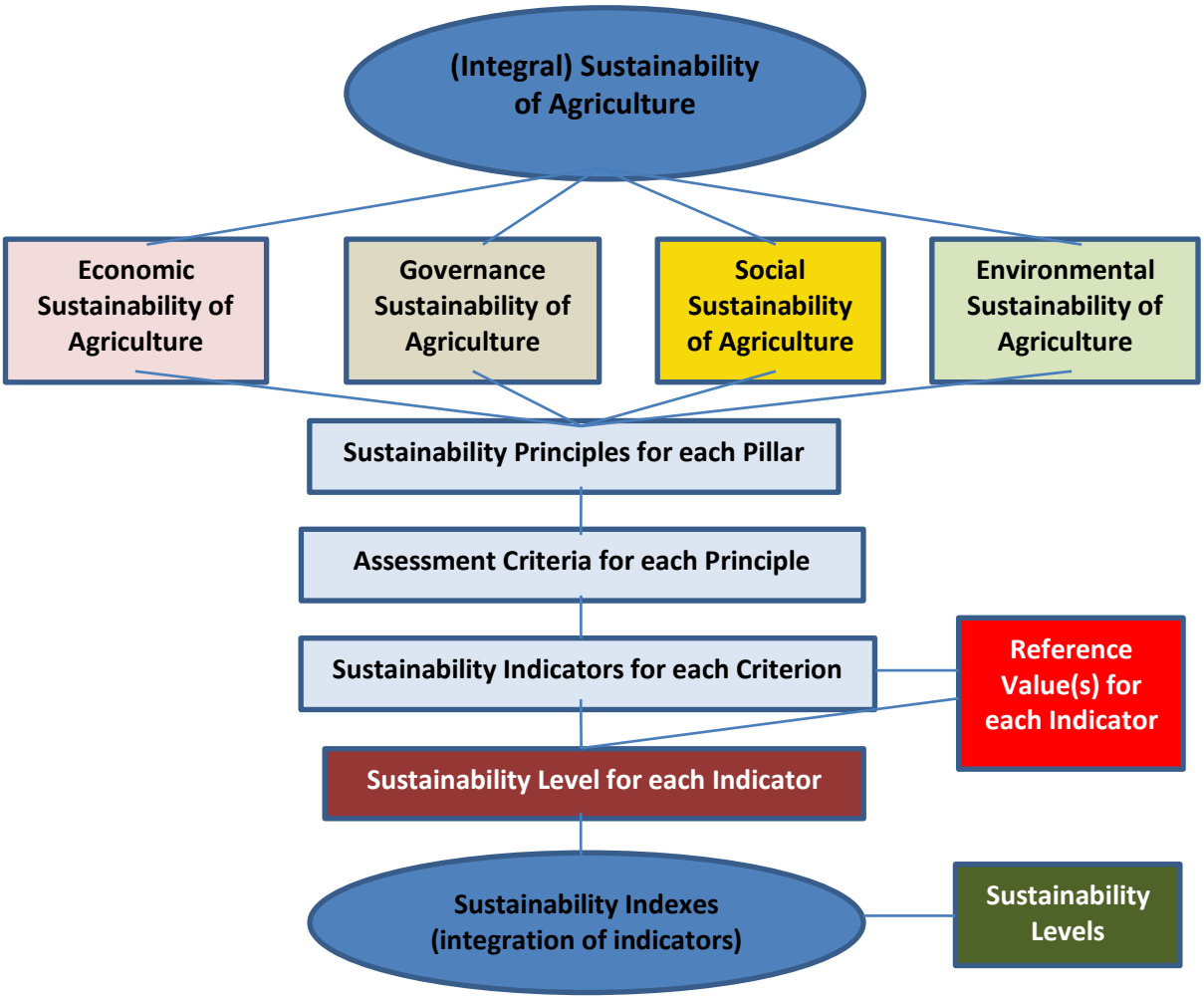


Figure 1: Framework for Assessing Sustainability of Agriculture
Source: author

For determining the level of sustainability following scales, defined by experts, are used: Index range 0,81-1 for a High level; 0.50-0,8 for Good level; 0,26-0,49 for Satisfactory level; 0,06-0,25 for Unsatisfactory level, and 0-0,05 for Non-sustainable state.

There are no available data for calculating most of (economic, social, environmental, and governance) sustainability indicators at national, subsectoral and regional levels. That is why for assessing governance and overall sustainability of Bulgarian agriculture 2018 survey data

from managers of 208 “typical farms” of different size and juridical type, production specialization, and ecological and geographical locations is used. Structure of surveyed farms approximately corresponds to the real structure of farms in different categories in Bulgaria.

Composite Sustainability Index at national, subsector, and regional level is calculated as an arithmetic average of the Indices of relevant farms belonging to each agro-system.

2. Results and discussion

A multidimensional assessment indicates that governance sustainability of Bulgarian agriculture is at good but close to the satisfactory level (Figure 2). Analysis of individual Indexes for sustainability Principles and Indicators allows identifying individual components contributing to governance sustainability of country’s agriculture. For instance, governance sustainability is relatively low because implementation of the principle Good Private Practices is at satisfactory level, while principles Good Legislative System and Democratic management are at the border with satisfactory level (Figure 3). At the same time, application of principles Working agrarian administration and Working market environment are superior and contribute most for elevating the overall sustainability of the sector.

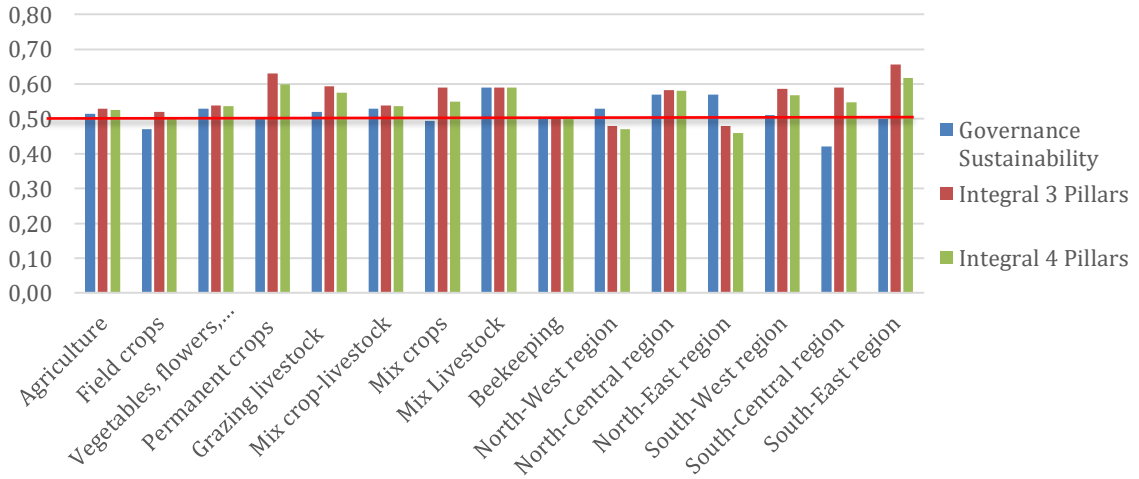


Figure 2: Governance and Integral Sustainability of Bulgarian Agriculture at National, Sub-sectoral and Regional Levels**.**
Source: author calculations

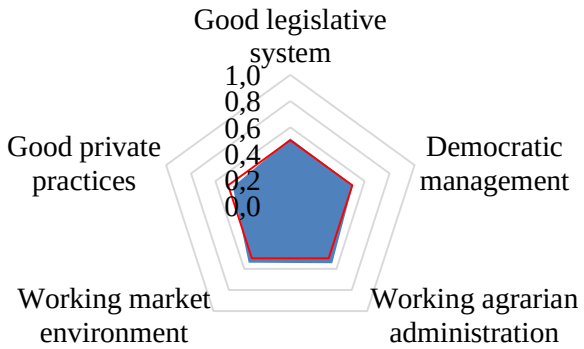


Figure 3: Indices for Principles of Governance Sustainability of Bulgarian Agriculture
Source: author calculation

In depth analysis of the levels of individual Criteria and Indicators further specifies the elements that enhance or reduce country's agricultural Governance sustainability. For instance, insufficient Good Private Practices is determined by the low External control (over management), weak Contracts enforcement, and inferior Informal system efficiency (Figure 4). Similarly, despite that Integral Index for Democratic management Principle is at good level, Indices for two criteria (policies) Impact and Stakeholder participation in decision-making are quite low at satisfactory territory. Likewise, Working agrarian administration seems "good" but Access to administrative services is actually very low at satisfactory sustainability level. The same is true for Working market environment which is "good" while Index for Criteria Resource concentration reviles low sustainability.

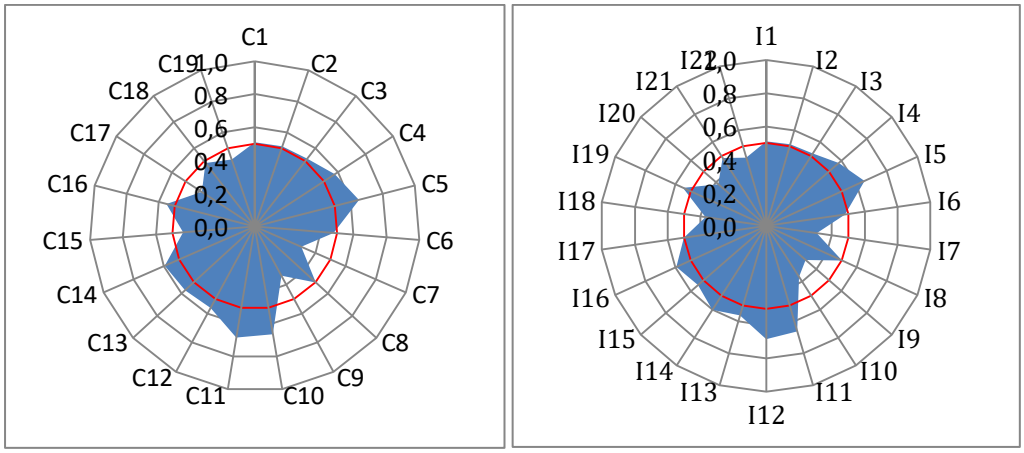


Figure 4: Indices for Criteria* and Indicators** of Governance Sustainability of Bulgarian Agriculture

**C1-Extent of policies implementation; C2-Extent of beneficiary satisfaction of EU policies; C3-Policies effects; C4-Representation; C5-Transparency; C6-Impact; C7-Stakeholder participation in decision-making; C8-Minimum costs of using; C9-Access to administrative services; C10-Information availability; C11-Quality of services; C12-Market access; C13-Free competition; C14-Competitive allocation of public resources; C15-Resource concentration; C16-Regulation implementation; C17-External control; C18-Contracts enforcement; C19-Informal system efficiency

** I1-Extent of CAP implementation; I2-Extent of beneficiary satisfaction of EU policies; I3-Subsidies distribution; I4-Representativeness of state and local authorities; I5-Access to information; I6-Subsidies in Income; I7-Farmer's participation in decision-making; I8-Acceptability of legal payments; I9-Agrarian administration efficiency; I10-Administrative services digitalization; I11-Extent of awareness; I12-Administration service costs; I13-Market access difficulties; I14-Market competition; I15-Prices negotiation possibilities; I16-Extent of competitive allocation of public resources; I17-Lands concentration; I18-Possibility for lands extension; I19-Extent of regulations implementation; I20-Management Board external control; I21-Extent of contract enforcement; I22- Level of informal system efficiency.

Source: author calculation

Individual sustainability Indicators give precise information about specific factors determining one or another values of a particular Criteria. For example, ineffective Access to administrative services is determined accordingly by insufficient Agrarian administration efficiency and undeveloped Administrative services digitalization (Figure 4). Likewise, satisfactory sustainability for Resource concentration is a consequence of the (low) Possibility for lands extension.

The lowest values for indicators help identify specific areas that require improvement through adequate changes in institutional environment, public policy, modernization of agrarian administration, collective actions and/or management strategies. At current stage of

development, the most critical for increasing governance sustainability of Bulgarian agriculture are the progressive improvements in Farmer's participation in decision-making, Agrarian administration efficiency, Administrative services digitalization, Possibility for lands extension, Management Board external control, Level of informal system efficiency, Subsidies in income, Extent of contract enforcement, Acceptability of legal payments, and Lands concentration.

The higher levels of certain indicators show the absolute and comparative advantages of Bulgarian agriculture in terms of good governance and sustainable development. At the current stage most prominent among them are Representativeness of state and local authorities, Market competition, Extent of competitive allocation of public resources, Access to information, Extent of awareness, and Administration service costs. Since top value(s) of governance sustainability indicators are relatively low, there is a great potential for improvement of governance and overall sustainability of Bulgarian agriculture.

There is a great variation in the level of governance sustainability of different sub-sectors of Bulgarian agriculture. The highest (good) level is demonstrated in Mix livestock, Vegetables, flowers, and mushrooms, and Mix crop-livestock productions (Figure 2), contributing to greatest extent for improving (maintaining) the overall governance sustainability of country's agriculture. On the other hand, in some major subsectors like Field crops and Mix crops, the level of governance sustainability is satisfactory and they decrease in a biggest degree the integral governance sustainability of agriculture.

Individual sub-sectors are characterized by significant differentiation in application of principles of good governance. Principle Good legislative system is best realized in Vegetables, flowers, and mushrooms, and Mix-livestock productions, and the worst in Field crops and Grazing livestock sub-sectors. Principle Democratic management is best implemented in Mix livestock production and it is satisfactory in Beekeeping, Mix crops and Mix crop-livestock sub-sectors. Principle Working agrarian administration is effectively applied in Beekeeping, Grazing livestock, and Mix crop-livestock sectors, while agrarian administration does not "work" well in Field crops. Principle Working market environment is highest in Mix livestock, Beekeeping and Mix crop-livestock while market mechanisms are not working very well for Field crops producers. Good private practices are best implemented in subsectors Mix livestock and Mix crop-livestock operations, while in all other subsectors they are applied only satisfactorily, being particularly inferior in Beekeeping and Field crops.

Further analysis of the sustainability level for individual Indicators allows "complete" unpacking "critical" factors enhancing and/or decreasing governance sustainability of each sub-sector. Field crops subsector has good governance sustainability for Market competition, Representativeness of state and local authorities, Market access difficulties, and Access to information (Figure 5). At the same time, most of indicators are at satisfactory level being worst for Administrative services digitalization, and Extent of competitive allocation of public resources.

Governance sustainability of Vegetables, flowers and mushrooms subsector is with highest scores for Extent of regulations implementation, Representativeness of state and local authorities, Market access difficulties, and Administration service costs. Simultaneously, governance sustainability is at satisfactory level for numerous indicators, and even unsatisfactory for Management Board external control. Governance sustainability of subsector Permanent crops is superior for Administration service costs, Access to information, and Extent of awareness, satisfactory in many areas, being particular low for Agrarian administration efficiency, and Farmer's participation in decision-making. Governance sustainability of Mix crops production is particularly high for Market competition, Administration service costs, and Extent of awareness. This subsector demonstrates satisfactory level in many areas being

particularly low for Possibility for lands extension, and Agrarian administration efficiency, while in terms of Farmer's participation in decision-making it is unsatisfactory.

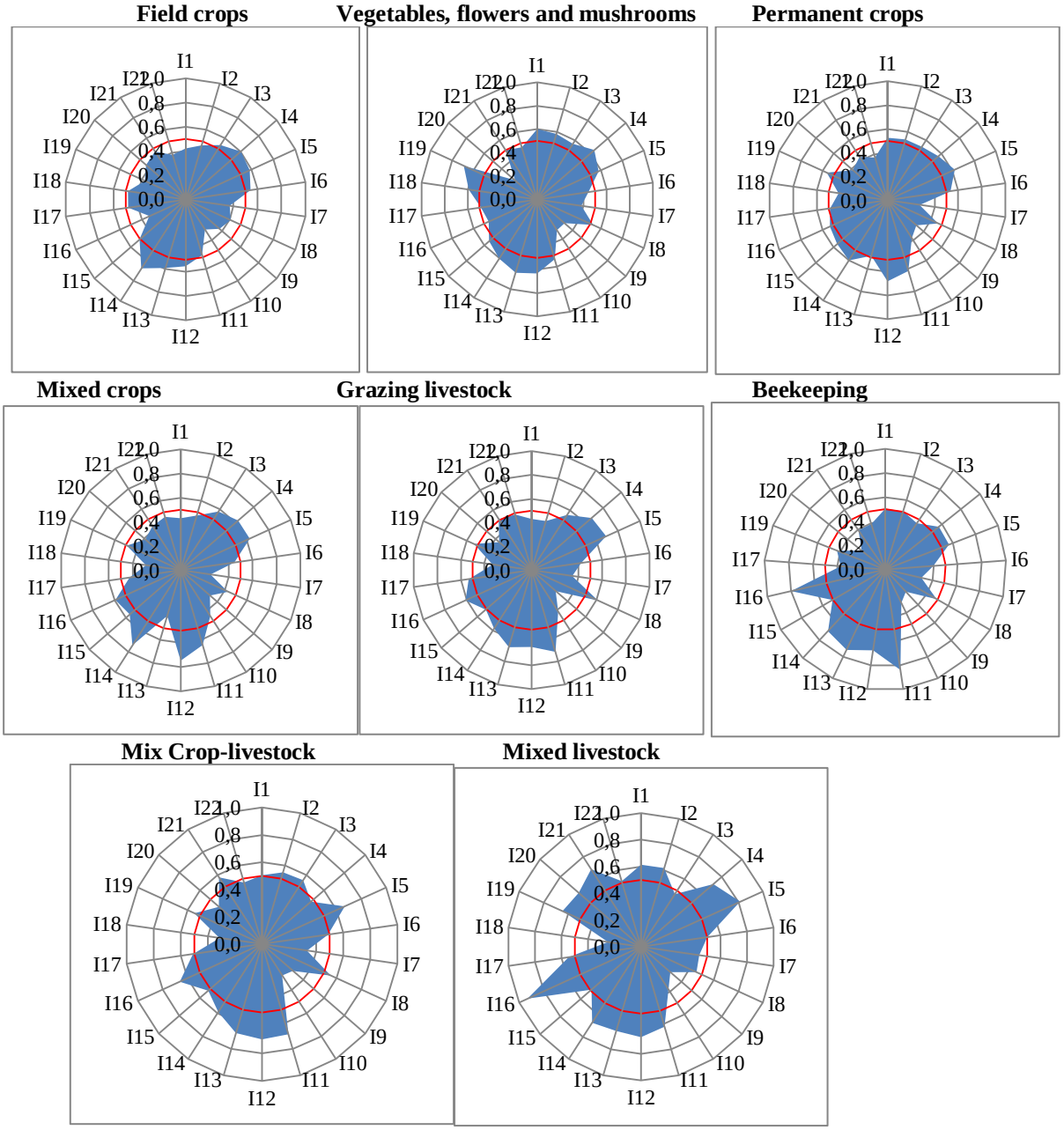


Figure 5: Governance Sustainability Indicators in Different Sub-sectors of Agriculture
Source: author calculation

Governance sustainability in Grazing livestock sub-sector is particularly good for Extent of awareness, Access to information, Market access difficulties, and Representativeness of state and local authorities. Along with the latter, this production experiences satisfactory level in multiple directions, being very low for Agrarian administration efficiency, and Possibility for lands extension. Governance sustainability in Beekeeping is high for Extent of awareness, and very good for Extent of competitive allocation of public resources. At the same time, numerous Indicators in that subsector are at satisfactory level, while for Agrarian administration efficiency and Management Board external control even unsatisfactory. Governance sustainability of Mix

crop-livestock production is superior for Administration service costs, Extent of awareness, Market access difficulties, and Access to information. Simultaneously, it is satisfactory in multiple directions, the worst among them being Administrative services digitalization, and Agrarian administration efficiency. Governance sustainability of Mix livestock production is high for Extent of competitive allocation of public resources, and Access to information, and it is very good for Representativeness of state and local authorities, Extent of contract enforcement, Administration service costs, and Market competition. Nevertheless, for several key areas governance sustainability is at satisfactory level being lowest for Agrarian administration efficiency, and Administrative services digitalization, and within unsatisfactory territory for Possibility for lands extension.

There is a significant differentiation in various aspects of governance efficiency among administrative (and agricultural) regions of the country as well. Principle Good legislative system dominates in North-West and North-Central regions, while in South-Central and South-West regions it is only applied satisfactorily. Principle Democratic management is best realized in North-East and South-West regions, and insufficiently in South-Central and North-West regions. Principle Working agrarian administration is effectively applied in North-East and North-East regions, and satisfactorily in South-Central region. Principle Working market environment is highly regarded in North-East region, and inferior in South-Central and South-East regions. Good private practices are best carried out in North-Central and North-East regions while in the three south regions they are enforced satisfactorily.

There is a big variation in the levels governance sustainability indicators across the territory of the country (Figure 6). In North-West region the highest sustainability value is for Extent of competitive allocation of public resources, Subsidies distribution, Extent of awareness, and Administration service costs. At the same time, governance sustainability in this agrarian region is satisfactory for a number of Indicators, being quite low for Management Board external control, and even unsatisfactory for Farmer's participation in decision-making.

Governance sustainability of agriculture in North-Central region is very good in respect to Access to information, Representativeness of state and local authorities, Administration service costs, and Extent of regulations implementation. Simultaneously, governance system in that agro-region is worst in regards to Farmer's participation in decision-making, Agrarian administration efficiency, and Possibility for lands extension.

Agrarian governance sustainability in North-East region demonstrates a superior level for Extent of competitive allocation of public resources, and Management Board external control, while it is especially low for Possibility for lands extension, Agrarian administration efficiency, and Farmer's participation in decision-making.

Agriculture in South-West Region is with highest governance sustainability for Access to information, Administration service costs, and Extent of awareness. At the same time, it is satisfactory in many directions being particularly low for Agrarian administration efficiency, and unsatisfactory for Management Board external control.

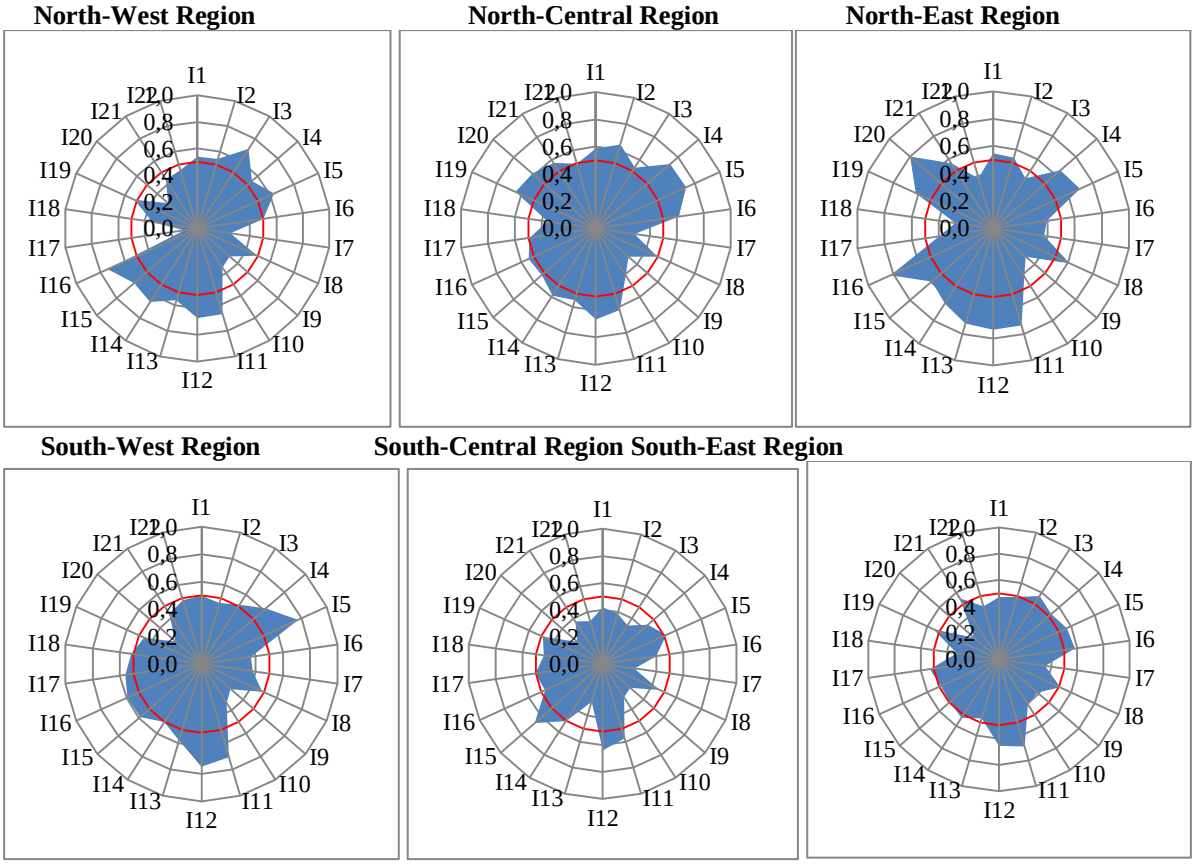
South-Central region's agriculture is only in solid good territories for Administration service costs, and Prices negotiation possibilities, while for most Indicators is satisfactory being very low for Agrarian administration efficiency, Administrative services digitalization, and Market access difficulties. Besides, governance of region's agriculture is unsatisfactory in terms of Farmer's participation in decision-making, and Management Board external control.

Governance sustainability of South-East region agriculture is with relatively good level only in respect to Administration service costs, and Extent of awareness. In many other areas it is satisfactory, being lowest for Possibility for lands extension, and Farmer's participation in decision-making, and unsatisfactory for Management Board external control.

Inclusion of the Governance pillar in the calculation of Integral agrarian sustainability changes insignificantly Integral Sustainability Index of Bulgarian agriculture, without

modifying the overall good sustainability level (Figure 1). In some subsectors and agro-regions, taking into account of governance sustainability does not modify significantly the integral sustainability level. However, in many agro-systems, the four pillars assessment results in inferior Index (and level, as in the case of Field crops) of integral sustainability. Therefore, inclusion of missing "new" Governance pillar is critical, as it improves the adequacy and accuracy of agrarian sustainability assessments.

Figure 6. Governance Sustainability Indicators in Major Agro-regions of Bulgaria



Source: author calculation

Conclusions

This study has proved that it is important to include "missing" Governance Pillar in the assessment of Integral sustainability of Bulgarian agriculture. Governance sustainability of the sector is at a Good but very close to the satisfactory level. There is a considerable differentiation in the level of governance sustainability of different sub-sectors, and agro-regions. Sustainability indicators with the highest and lowest values determine the "critical" factors enhancing and deterring governance and overall sustainability of evaluated agro-system.

This study reviled that much of the needed information for calculating the Governance sustainability is not readily available and have to be collected though experts' assessments, farm managers and professional associations surveys, etc. Nevertheless, a big challenge is the (level of) competency of and willingness for "honest" estimates by the interviewed agents.

Having in mind the importance of holistic assessments of this kind for improving the management of governance and integral sustainability of agriculture, they are to be expended, and their precision and representation increased. The latter requires improvement of precision

through enlargement of surveyed farms and stakeholders, and incorporating more "objective" data from surveys, statistics, expertise of professionals in the area, etc.

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DEMOGRAPHIC SHIFT OF RURAL AND NON-RURAL AREAS IN BULGARIA

Bozhidar Ivanov*

Abstract:

This analysis was made through a comparative study of important indicators describing the demographics in rural and non-rural areas. Rural areas in Bulgaria are defined and delineated for the purpose of Rural Development Program implementation. According to the national definition, rural areas are defined at the municipal level (LAU 2) and include the territory of 231 municipalities in which the largest settlement has a population of up to 30,000 people. The definition and outline of the rural areas is based only on a criteria and it is number of population. In accordance with this definition, rural areas occupy 81% of the territory and 39% of the population of Bulgaria. The wide range of rural areas with such a common definition shows there is significant differentiation between the areas defined as rural, which makes it difficult to draw general conclusions and to identify specificities ensuing of more concrete and particular characteristics.

The goal of the paper is to analyze the changes in demographic in rural and non-rural areas, evinced in the period 2007-2019 and based on an evaluation to delineate outlook for desired future using an expertise Delphi approach. The analysis is done applying descriptive analysis and Regional Factor Shift Analysis (RFSA), designated to evaluate demographic shifts between rural and non-rural areas and between particular municipalities among those groups itself. The RFSA is analytical tool built on Shift Share Analysis (SSA) designed to determine the contribution of certain components for observed changes in studied regional economies. The study is inspired by a project –"The Sustainable Hub to Engage into Rural Policies with Actors (SHERPA)" funded by Horizon 2020 of EU, where IAE is a partner.

Keywords: demography, rural and non-rural areas, socio-economic development, desired future, technological advance, opportunities.

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Introduction

This analysis was made through a comparative study of important indicators describing the demographics in rural and non-rural areas. Rural areas in Bulgaria are defined and delineated for the purpose of Rural Development Program implementation. According to the national definition, rural areas are defined at the municipal level (LAU 2) and include the territory of 231 municipalities in which the largest settlement has a population of up to 30,000 people. The definition and outline of the rural areas is based only on a criteria and it is number of population. In accordance with this definition, rural areas occupy 81% of the territory and 39% of the population of Bulgaria (CAPA, 2017). The wide range of rural areas with such a common definition shows there is significant differentiation between the areas defined as rural, which makes it difficult to draw general conclusions and to identify specificities in order to qualify underlying characteristics. It should be noticed and taking onto account that statistical weighting and averaging of the indicators in case of wide dispersions of the data obscures viewing the right picture. The covered territory and large number of municipalities denoted as

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rural, which are situated in different parts of the country, possess various characteristics and resources, when are pooled together, the deteriorated situation, especially in smallest and most remote municipalities can not be disclosed easily.

In general, it is unambiguous the rural areas in Bulgaria, such as same areas around the EU are experiencing a demographic and partly economic drawback (Ivanov, Sokolova, 2017). At the same time, the development of technology, digitalization and advances in communication innovations allow better possibilities for achieving equal opportunities for life and realization of people no matter where they are. Due to technological advances, Internet and other electronic services, people become more and more able to get what they look for from anywhere, which has the potential to become a factor in reversing trends and making rural areas a desirable place to live.

The challenge is that the introduction of these technologies takes time, whereas demographic processes in rural areas are generally deteriorated. Rural communities are changing in terms of social pattern and dominant cultural understandings. Migration and immigration contribute to the creation of a new environment and interests, to the expansion of cultural and economic horizons. Education and the media also contribute to these processes. But an important part of the defining problems for rural areas remain - an aging population and poor opportunities for realization of educated young people, which extracts the demographic recourses and impedes the overall development of these areas.

Bulgaria has no practice in formation and implementation of special policy designated to rural areas after 90's. These issues have been addressed in the context of territorial policy, through programs for support of lagged developed regions as mountainous and bordering ones mainly through delegation of rights and support to municipalities and particular measures of local authorities. The first focused interested on rurality was conducted by SAPARD and aftermaths with EU membership and implementation of RDP (2007- 2013 and 2013-2020) (MAFF, 2000-2019). The only current government document that is entirely devoted to some aspects of rural development in the country is the Rural Development Program. Under the RDP comes the main funding of various policies to improve the socio-economic situation in rural areas, which is thought to be the origin of situation in the demography. Decentralization is a sustainable tool for positive change in the socio-economic situation and hence to the improvement of the demographic situation in rural areas (Ivanov et al, 2012). The institutional legal framework constrains the powers of village mayors for example, which is a serious setback to taking actions for improving the situation of these settlements.

The most adverse in terms of economic conditions and social environment is the situation in the villages of rural municipalities explicated by unfavorable position of these areas to compete with non-rural, whereof demography is the final outcome of lagging socio-economic development. Some progress can be reported in decentralizing governance. Some local taxes and fees are already determined and financed by local authorities (building and vehicle tax, patent taxes, garbage tax, etc.), but on the other hand other taxes collected at local level are centralized to the national budget and redistributed by it. It is considered as useful and constructive to encourage as much as possible decentralization and wide inclusion in local management process, which can be important preposition to increase effectiveness and guarantee better tackling of local issues. The goal of the paper is to analyze the changes in demographic in rural and non-rural areas, evinced in the period 2007-2019 and based on an evaluation to delineate outlook for desired future using an expertise Delphi approach.

1. Methodology

The analysis is done applying descriptive analysis and Regional Factor Shift Analysis (RFSA), designated to evaluate demographic shifts between rural and non-rural areas and

between particular municipalities among those groups itself. The RFSA is analytical tool built on Shift Share Analysis (SSA) designed to determine the contribution of certain components for observed changes in studied regional economies. The relationship between regional growth and industrial structure is often analyzed and decomposed into various "effects", with a technique known as shift and share analysis. Referring perhaps to "locational shifts" in manufacturing (Herzog and Olsen, 1977), the technique was first developed and employed as an analytic tool during the early 1960's by Ashby (1970), Dunn (1960). In recent years shift-share analysis and various transformations of the technique have been extensively employed by regional economists. Aftermaths, the "classical" shift-share equation was liable to various reformations. The empirical results show that this new technique expands the analytic properties of shift-share analyses, whose interpretations are sensitive to the temporal representation of regional structure in the shift-share equation. In terms of the results, the attempts are bound to correct one of the problems inherent in the original shift-share equation related to liner decomposition of the factors, whereas the RFSA offers to comprise an external factor along with decomposed one.

The Share-shift analysis (SSA) is a convertible tool, which can be used to evaluate the regional shifts between different regions. The "classical" shift-share equation is designed to decompose the growth of a regional variable such as employment, income or output into three "effects" that measure differential growth among regions. Given information by industrial sectors for one of these regional variables at two points in time, the technique divides the change (SS) over the time period into the following effects: national growth (NS), industry-mix (IM), and competitive position of the region (RS) (Herzog and Olsen, 1977). It can be expressed as the following formula:

$$SS = NS + IM + RS \quad (1)$$

SS - Shift-Share
NS - National Share
IM - Industry Mix
RS - Regional Shift
The equations for each component are:

$$NS = {}_i local^{t-1} \bullet NS^{t} / NS^{t-1} \quad (2)$$

$$IM = ({}_i local^{t-1} \bullet {}_i NS^{t} / {}_i NS^{t-1}) - NS \quad (3)$$

$$RS = {}_i local^{t-1} \bullet ({}_i local^{t} / {}_i local^{t-1} - {}_i NS^{t} / {}_i NS^{t-1}) \quad (4)$$

These formulas render calculation of regional shift in a particular economic issue or economic variables, when it is subordinated but may not reveal what are regional shifts in a general category or economic variable. The components that are included in estimations are ${}_i local^{t-1}$ – number measure on local variable in an industry (i) at the beginning of the analysis period (t-1), while ${}_i local^{t} n$ – is the same variable numbers at the end of the analysis period (t). Other variables in equations (2-4) are NS^{t} - total number of the variable in the nation at the end of the analysis period (t), while ${}_i NS^{t-1}$ – variable number, nationwide, in industry (i) at the beginning of the analysis period (t-1) and ${}_i NS^{t} n$ - number of variables, nationwide, in industry (i) at the end of the analysis period (t).

In that study SS Analysis is used and modified to set up so called Regional Factor Shift Analysis (RFSA). The RFSA model offers an opportunity to see in what direction and to what extent a certain sector and economic characteristic have changed taking into account the influence of two kind of factors. Those factors are national determinant and a loop determinant, which is considered as a factor, which has relatively strong relationship with demography. The Gross Value Added (GVA) at municipal level is assumed to be a factor-loop, which renders effect and influence on demography and by including that variable, the pure regional shift on demography can be measured isolating the influence by national trends in demography and influential factor-loop variable. The role of loop-factor variable is mostly found, when a multiple system of regional indicators are chosen and it is need to have a common loop-factor, which presents in any of the equations as a loop.

This method shows regional development shifts, where evolution of certain indicator is explicated by influence of national change and factor-loop variables. The RFSA is done through 2 stages:

$$RS=LocalVar^{t-1}-LocalVar^{t-1}*NS^{t-1}/NS^{t}*\{(FL^{t}-FL^{t-1})*(FL^{t}+FL^{t-1})\} \quad (5)$$

$$RSDEV=(RSDEV_{IM}-RSDEV_{AVER})/(RSDEV_{AVER}) \quad (6)$$

The RS Coefficient is normalized in a range from 0 to 1 because in primary calculation from formula 5 and 6, it varies under 0 and goes over 1, which makes difficult the interpretation of the analysis. The normalization is done as:

$$RS\ Coef_{n} = 1-(RSDEV-RSDEV_{MIN})/(RSDEV_{MAX} - RSDEV_{MIN}) \quad (7)$$

where if RS $Coef_{n}$ is negative than 0 and if exceeds 1 is normalized to 0 and 1. RS $Coef_{n}$ is a coefficient for regional shift showing the regional strength and capacity to drive changes in demography, isolating the influence by national trend and factor-loop variable. In equations (5 and 6), the participating variables are:

LocalVar – the demographic situation in terms of population in two periods

NS – the national indicators for demography

FL – factor loop stood for GVA at municipal level

$RSDEV_{IM}$ – the regional shift deviation of RS from the average

$RSDEV_{AVER}$ – average regional deviation of the whole set of municipalities

Abreast with RSFA qualitative method, which aims to evaluate the differences between rural and non-rural areas to generate changes and to be resilient to demographic tendencies the Delphi method is employed to find ways and solutions to demographic problems. The Delphi approach is an interactive expert process, which specific tool is to gather experts relevant to the topic and to create conditions for their discussion and mutual concluding, which is used to build up the position paper. The entire Delphi process was composed of 7 steps, described herein below. The aim was to clarify and formulate the main notions and messages and combine all opinions and statements alleged by experts as at the end achieve consensus.

Step 1: Organizational work - the facilitator and monitor in the SHERPA project were in charge of organizing the whole process. They were involved in preparing the Discussion Paper. As a result of panelling the experts' group of 7 members and external specialists actively participated in the discussion process.

Step 2: Identification and invitation of experts - the Delphi technique relies on a panel of experts. All involved experts possess relevant knowledge and experience in rural development. All these experts belong and are stakeholders from civil society and scientific field, as involved 2 representatives from public authority area were not able to take position due to needs to coordinate any statement and proposal with principals.

Step 3: Define the purpose of the discussion process - the experts have received the Discussion Paper dedicated to demographic issue in rural areas, where they were also contacted for filling up questionnaire and in reviewing and consenting the text.

Step 4: Round One – opinions, proposals and statements collection - all experts were invited to posit their opinions, comments and statements based on the Discussion Paper, as the purpose was to obtain their view separately each other.

Step 5: Round Two – compiling the preliminary conclusions - based on all received comments, proposals and statements, the draft document was provided to experts by e-mail for reviewing. All experts were able to know comments and proposals from other experts in the panel. Again, collate and summarise the results were done as the stress was posed on the controversial and singular opinions and proposals expressed by experts. The purpose was to seek and build consensus, as those statements and proposals that were not consented were redacted or removed.

Step 6: Round Three – sum up of reviewed draft - the responses from all experts were collected and started collation of the text and statements consented by all and taking aside those unaccepted or doubted by experts. The intention of this step is to unite all text and formulation agreed by experts.

Step 7: Creation of final draft - after summing up and structuring the paper draft based on the experts reactions and proposals, the SHERPA team set up to synthesize findings, text and conclusions and to create the final paper draft.

As a result of the methodology, a differential analysis of demographic picture in rural and non-rural areas is depicted and constructive notions and proposals are noted for the sake to project a desired demographic future for rural areas.

2. Results

A review of demographic statistics in rural areas shows that they are much sharper and deeper in these areas than in non-rural areas. Selected for monitoring in terms of demographics are indicators of mortality, natural growth, mechanical growth, age dependence, which are the main indicators, but not the only ones characterizing the demographics (UNWE, 2020). All of them show not only that rural areas have a worse picture than non-rural ones, but also underline the unfavorable tendencies, which are deepening explained by the essence of these indicators, where the linear progression switch through accelerating after certain period of time (Ivanov et al, 2012).

The analysis of the data shows that the unfavorable trends in all included indicators are deepening and exacerbating, which shows that the problems that cause them continue to dominate and prevail in majority of rural areas. It happens over the new perspectives due to technological and digital progress, largely promoted to catch up the differences between economic and highly concentrated areas with counterpart less populated areas.

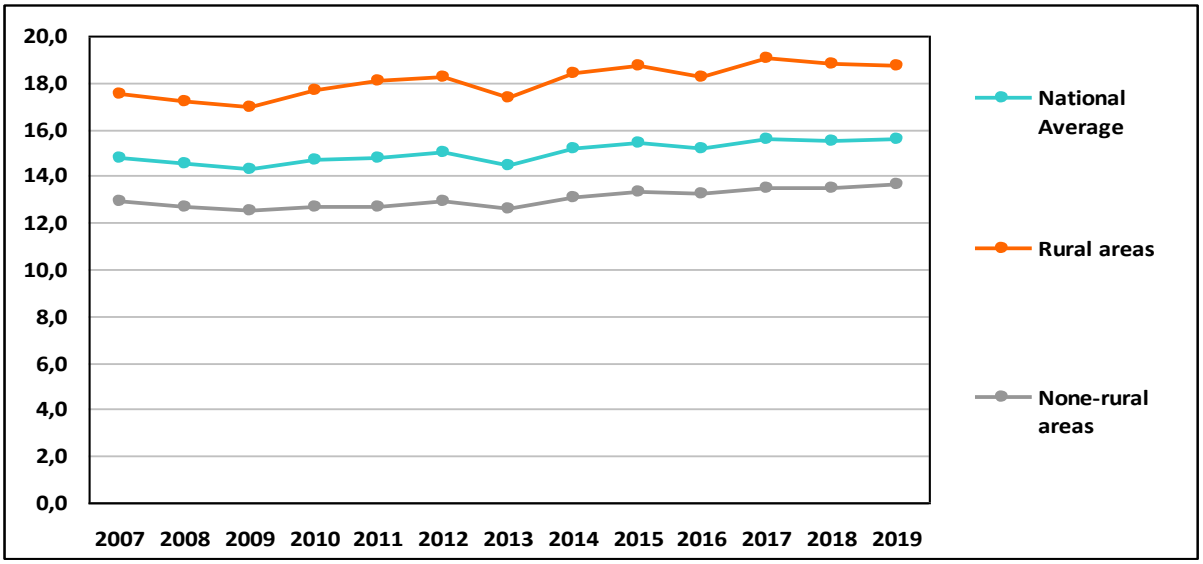

Figure 1: Coefficient of mortality rate in different areas, per mille ‰
Source: National Statistical Institute

Statistics show that disparities in demographic processes, economic development and access to basic services between urban and rural areas persist. For example, the population by rural and urban areas in 2007 was 3136451 and 4503787 people, respectively, and in year 2019, 2641655 and 4309817, respectively. The mortality rate in the initial year is 17,5‰ for villages and 12,9‰ for urban places, while at the end of the period is 18,7 ‰ and 13,6 ‰ respectively.

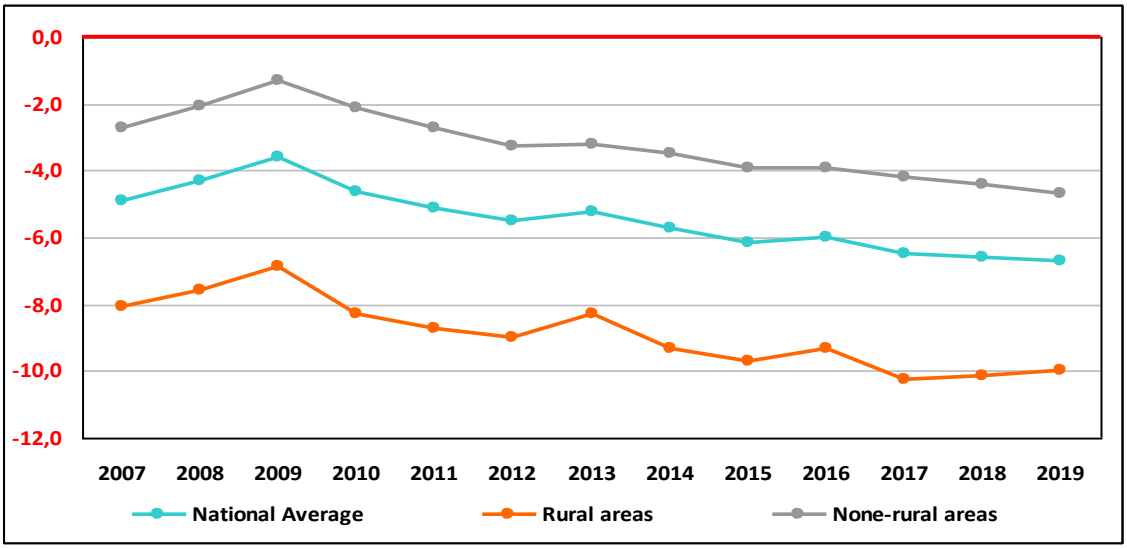

Figure 2: Coefficient of natural growth rate in different areas, per mille ‰
Source: National Statistical Institute

The same is the ratio in the natural growth of the population - in the first observed year -25317 and -12336 people and the last - 26389 and -20156 people. The natural growth rate is -8,1‰ and -2,7‰ respectively in 2007 and -10‰ and -4.7 ‰ during 2019. The natural growth is a direct consequence of the low birth rate and high mortality.

The low birth rate is due both to the small number of children per family and to the progressive leave of young people in rural areas due to limited economic opportunities and the unsatisfactory environment for personal and social life. Abreast with that, the adverse picture

is seen in age dependence, which is worsening faster in rural areas than in non-rural areas - from 53,1% and 39,3% in 2008. of 60,6% and 53,2% in 2019.

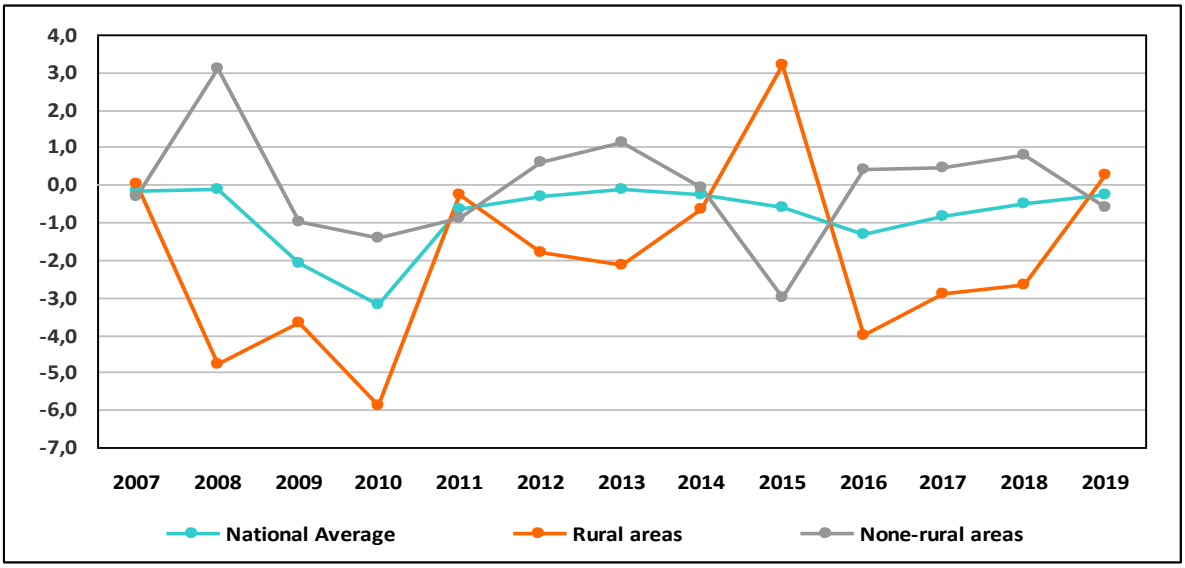

Figure 3: Coefficient of mechanic growth in different areas, per mille ‰
Source: National Statistical Institute

Age dependence illustrates the problem of population aging in rural areas, which in turn reduces the attractiveness of these areas to entice investment and develop economic activities and services able to generate a higher added value. Establishing a liberal economic environment in which villages and rural areas turn out to have competitive disadvantages, especially in terms of existing limits to retain skilled labor and vulnerable in draining the most talented and educated human resources reduces their ability to sustain in these conditions. Economic activity and innovation are concentrated in the centers with comparative advantages - urban agglomerations, which further increases their attractiveness at the expense of uncompetitive rural areas.

The problem of demography in rural areas is among the most acute challenges to their development, along with poverty, unemployment and low incomes (Ivanov, Popov, Stoychev, 2018). Demographic problems in rural areas have been persisting for decades, and the population of these areas is steadily declining. Between 1990 and 2007, Bulgaria faced serious economic and social challenges, with major difficulties in overcoming the economic difficulties of restructuring the economy and restoring its competitiveness on the European and world markets, which affected rural people to greater extent. The population of areas defined as rural for the period 1990-2006 decreased by about 17%, while in urban type, the depopulation for the same period was 6%. From a historical perspective, the decline of the population in rural areas is a trend and characteristics started as early as socialistic period with much larger scale and size, when due to industrialization, capitalization of agriculture and development of services, the concentration of population in urban areas increased, which was driven by powerful migration of people from villages and smaller settlements.

It is necessary to apply an integrated territorial approach as opposed to the traditional sectoral one. Such development is a logical consequence of the diversification of rural economies, pursuing for new sources of income and employment, increased mobility of human and financial resources, development of communications, etc. It is generally deemed that rural development policy is the exclusive responsibility of the central government. But the analysis shows that the changes are primarily the result of the activities of local entrepreneurs and authorities. Therefore, the central government must increasingly rely on non-governmental

organizations, as well as on the direct participation of local communities in the decision-making process as a prerequisite for social progress. The LEADER approach is a very good and promising tool for revitalization and recovery of rural areas and reanimation of local energy and community initiation.

Demography is one of the most important indicators and components of the situation and development of territories and local communities. The uneven distribution of the population and its concentration in highly urbanized areas leads not only to personal, social and environmental challenges, but also to economic and infrastructural ones. It is crucial that the economic benefits of urban areas do not lead to depopulation and the socio-economic decline of rural areas. At the root of reasons leading to adverse demographic structure in rural areas is identified the relative economic uncompetitive of rural areas compared to non-rural areas. The deterioration of economic development of the rural municipalities in comparison with non-rural ones leads to galvanizing and exasperating other problems from social, infrastructural, health, educational, communal, etc. nature.

Undoubtedly, the situation in rural demographics needs to be improved, which goes through the improvement of all preconditions that cause the unfavorable trends. It should be noted that the demography of rural areas is directly related to the demography of the country. It is widely shared that demographic crisis is something very real (UNWE, 2020). Thus, it is difficult to looks for solutions to the problems in rural areas if the demographic crisis in the country continues to go in a negative direction. The country's population has decreased by about 18% in the last 30 years. Particularly concerning is the situation with natural population growth, which is a negative number and in recent years there has been a heightening in the negative coefficient of natural growth to 6,7‰. This shows that the demographic problems in rural areas are in the context of much deeper and more complex circumstances in the population issue throughout the country.

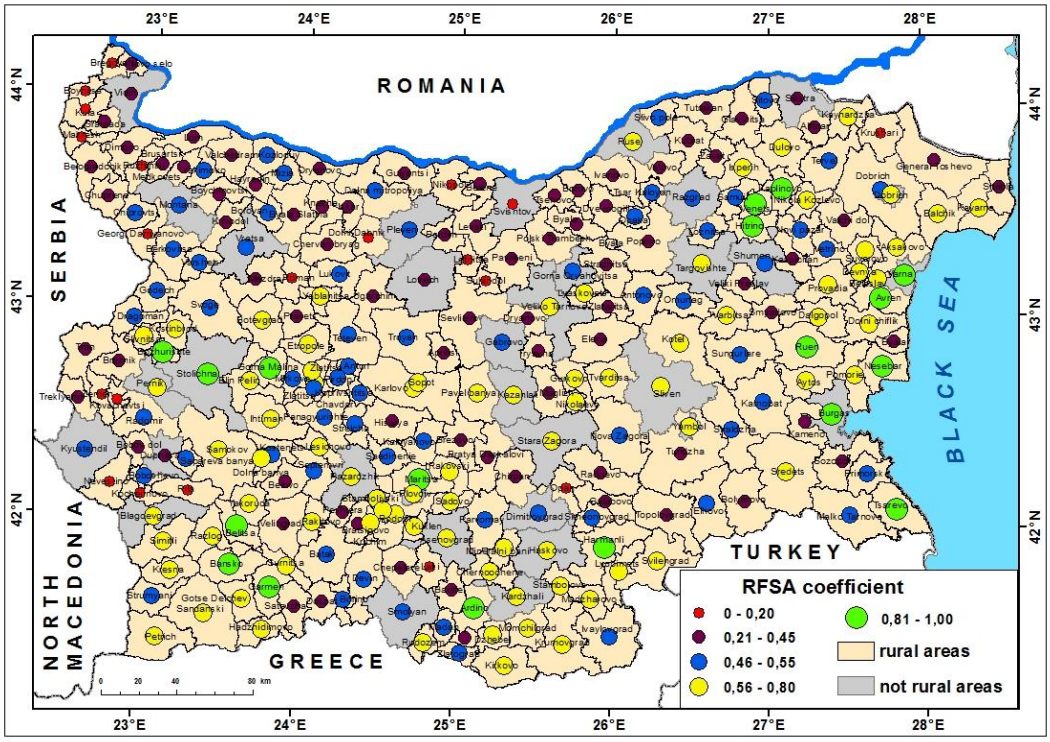

Figure 4: Regional Map of RFSA coefficient
Source: Author on National Statistical Institute data

The application of the RFSA analysis shows that there is a visible distinction between rural and non-rural areas in terms of the RFSA coefficient. The average coefficient for all regions is 0,51, whereas for rural areas it is equal to 0,49, and for non-rural areas it accounts for 0,59. This coefficient shows how the demographic picture in each municipality changes in the regional aspect, isolating the influence of the national demographic trend and the local economic development. The quality evaluation is drawn on a 5-point scale, where:

0 to 0,2 – adverse state
0,21 – 0,45 – unsatisfactory state
0,46 – 0,55 – moderate state
0,56 – 0,8 – satisfactory state
Over 0,81 – good state

Only in the municipalities with RFSA coefficient over 0,81 an increase in the population is reported between the period 2008/2009 to 2016/2017, which occurs even though the decrease in the population nationwide. The higher RFSA coefficient is, the more favorable is the development of demographics at the local level and the trends exceed the demographic indicators at the national level and the economic factor loop. Local demographic development is a function of the national one and is influenced by the economic loop-factor, as for many rural municipalities, the regional demographic indicators deteriorate much more sharply and significantly than the control loop and decomposing demographic factor. These are mainly the regions on the periphery of the country, especially in the North and Western part, as well as municipalities that are not close to economically successful developing regions. Another feature of rural areas in terms of RFSA is the large dispersion in the results. There are rural areas where the RFSA coefficient reach values qualified as good, similar and higher than most non-rural municipalities, but the majority of municipalities are in the lowest 2 levels of the qualification range, respectively with detriment and unsatisfactory state.

With the country's accession to the EU, and prior to it during the pre-accession period but in less extent, attention was drawn to these areas. The adoption of special funds, such as the Rural Development Program are set up designed to support and revive economic and social life in rural areas. There are talks and motions of balanced territorial development, of declared goals to support convergence of socio-economic levels between the different types of regions, not only at national but also at European level (CAPA, 2017). However, the situation identified through the analysis does not show any visible change. The demographic situation in rural areas continues to worsen, and the scale and pace of this deterioration continues to exceed that in non-rural areas. The conclusions that can be drawn is that the allocated support, mainly through public funds and other special financial support, is either not sufficient or that the problems are much deeper and more complicated, that they require holistic reaction and attention.

3. Discussion on desired future of rural area demographic

It should be noted that demography is one of the most resistant indicators under intervention actions compared to other indicators representing the situation in rural areas. In order to break the unfavorable trends in demography related to population decline, aging, negative natural and mechanical growth, long-term and consistent measures are necessitated. They should be aimed at improving the quality of life and equalizing the opportunities for personal and professional realization of people in these areas compared to urban centres. In the short and medium term, unfavorable demographic processes will continue, mainly due to an aging population and progressing age dependency. This will be especially true for remote rural areas and those located in less-developed economic regions. What is needed in the short and medium term is to slow down these processes until new conditions and opportunities emerge to boost and reverse the vector of their evolution.

The desirable future for rural areas necessarily goes through a better, sustainable and promising demographic situation. Demography and the situation with the population in rural areas is the most direct and significant indicator reflecting the overall socio-economic situation in these areas. Demography includes not only the population, but also its structure and quality. With the dominance of older people in rural areas, aging and human qualifications and education level, these places are weakening in terms of development prospects and opportunities for a better future. Demography must be seen as a consequence and result of many and varied factors that directly affect the situation and undermine the opportunities for a brighter change. Focusing on endogenous strengths, backed by a proper, coherent and comprehensive public support policy, can give a different outlook to rural areas.

With the improvement of national demographic indicators, stabilization of the demographic structure in rural areas can be sought. The sustainability of their development and demographic trends passes not only through stopping the decline in the population, but also in improving age dependencies, as the share of people up to 50 years and especially those up to 30 years of age living in rural areas rise up opposed to the population ratio of retired people. The population of retirement age relative to the working age population in 2019 represents 38% in rural areas, while in non-rural areas it is 31%, and this level is a good prospect that should be aimed at 2040 to purport for sustainability. With rising life expectancy, the mortality rate measured in 2019 in rural municipalities is 18,7‰, and in non-rural is 13,6‰, which can be set as a long-term, realistic goal for rural areas.

Besides, to posit for stable demographic situation, the natural population growth in rural areas should significantly reduce its negative values from -10‰ to -3-4‰, while at the same time consistently improves the mechanical growth of the population, as more people return and settle to live in these areas than leave. It will lead to a gradual increase in population by 1-2‰ per year. Achieving these quantitative indicators by 2040 will provide sustainable demographic prospects and will testify for an overall improvement of the socio-economic factors explicating the demographic situation. It will promote the quality of life existing in rural areas, where people will take advantage from rural strengths without affects their economic well-being.

Conclusions

The observed trends and situation in the demography in rural areas is the ultimate expression of the overall socio-economic development of these areas and the opportunities for personal and professional realization. Thus, demography and the problems in its indicators reflect and are a consequence of many exogenous and endogenous factors. Due to the complexity of this issue, possible and rational solutions include a very wide range of tools that need long-term and consistent actions in order to give results (CAPA, 2017). Without complex and comprehensive measures and joint efforts, it is difficult to achieve robust and sustainable results.

At the same time, adverse demographic situation in rural areas leads to abundance of territories, reduced opportunities for their survival due to lack of critical potential to generate recovery and mitigation processes. Without people and without the necessary conditions for community development, these territories become just natural inhuman areas leading to hazards from disappearance of cultural and historical heritage. That is why it is strategically important to retain the demographic decline and begin the gradual recovery of rural areas.

In the long run, there are more and better opportunities for these areas to acquire an attractive and desirable appearance and become preferred again. It is the new technologies, digitalization and communication tools of the new information society that is thought to close differences in the opportunities identified in highly urbanized areas versus less populated ones. The economic and market advantages of large cities and metropolis with a high concentration of population will not be such an advantage in future. That likely will enable many young people to look back

to smaller, calmer and more environmentally friendly rural areas. This will inevitably happen, but it can take long time of many years (30-40-50 years). The challenge is to maintain and work for it consistently so that this transition is smooth and systematic, which means it can happen sooner.

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ANALYZE OF SOCIO-ECONOMIC EFFECTS AFFECTING THE MANAGEMENT OF PROTECTED AREAS (DAJTI NATIONAL PARK)

Etleva Muça (Dashi)[5]*, Abdulla Diku**

Abstract:

Protected areas have a crucial impact in the conservation of biodiversity, maintaining genetic resources, protection of ecosystem functions, ecotourism and preservation of natural and cultural heritage. It is important for them to secure sufficient, stable and long-term financial resources, and in an appropriate form, to cover the full costs with aim secure nature conservation (Emerton et al. 2005). Due to the problems affecting the PA the paper search to analyse the socio-economic factors including legal regulations which specify the management of the park, its impact on the local market, and the attractiveness of the park's as a tourist destination.

Inhabitants living in and around protected areas consider it as income sources and their life is strongly related with the activities conducted in the area.

The analyze is made in Dajti National Park conducting 80 face to face interviews with local communities. We conclude that local communities of the Dajti National Park are diverse; many of the inhabitants live in scattered and relatively isolated communities, whereas others reside in the ever expanding Dajti Administrative Unit, which is increasingly under pressure from the expanding City of Tirana. Farming and farm activities are not considered as the main source of income for most of the local population due to the many market access difficulties, the lack of infrastructure, and the limited sustainable cultivated areas. The beneficiaries from the DNP are the bussinesses including restaurant owners or those who offer tourists services and the other group consists of villagers located at the boundaries of the park and visitors.

Key words: Protected Area, Dajti National Park, local communities, PA beneficiaries

JEL:R0

Introduction

Dajti National Park is considered as one of the most important touristic area, based on the perception of local communities and actors. With the economic growth of Tirana during the last three decades and an increase of tourism and business development, the threats to the park's fragile ecology has also increased. Threats are coming from the development of various business activities, continuity of constructions, bauxite, pollution (water, waste, landfills), forest fires and disturbance of flora and fauna.

The recent constructions approved by the Government of Albania like the cable car, mini golf fields, panoramic restaurants has considerably facilitate access to the centre of the park and increase the interest of the people to spent more free time there. At present no appropriate planning tool to cope with the increasing number of visitors, business development, waste generation and pollution is available.

Evaluating this problematic was necessary to analyze the income generated in the park area, the quantity and location of public and private service/business premises and their turnover, an analysis of the revenues collected from the non-tax office, analysis of the income from visitors' private entrance and park entrance.

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1. Theoretical issues supporting economic valuation of DNP

Ecosystems provide a range of services, many of which are of fundamental importance to human well-being, for health, livelihoods, and survival (Myers, 1983, Costanza et al., 1997, Millennium Ecosystem Assessment (MA), 2005, TEEB Foundations, 2010). Ecosystem services approaches also present opportunities to build constituencies for biodiversity and ecosystem management with communities who live in rural areas, but who may not be willing to support biodiversity conservation (Ingram J. et al 2012). Each ecosystem has its economic value, which refers to the value of an asset, which lies in its role in attaining human goals, be it spiritual enlightenment, aesthetic pleasure or the production of some marketed commodity (Barbier et al., 2009).

Traditional biodiversity conservation approaches may not have worked here due to the villagers' suspicions about hidden conservation agendas; a suspicion not uncommon in this part of the world where some people believe conservationists have prioritized the needs of species over the needs of extremely poor people (Brockington, 2002; Sachedina & Nelson, 2012).

On the other hand, it is necessary to understand the ways in which ecosystem services can contribute to biodiversity conservation.

2. Methodology

The varied purposes of evaluation exercises were included, monitoring results, since we identified the funding gaps of Dajti National Park. We collected data on the total income generated in the Dajti Mountain park area. This information served as a variety of more conservation-oriented in the development of a long-term financial plan to secure sustainable financing. The data used in this paper are secondary and primary. The helped us to identify (i) the key elements that affect funding gaps for the system of protected areas, (ii) identifying instruments to understand and create secure sufficient, stable and long-term financial resources for protected areas.

The experience has shown that financial instruments and mechanisms differ in their respective enabling conditions in order to have impact on the ground. "Financial Analysis" on financing for PA-s, relies on quantitative data gathered from survey and secondary data helped us for:

- the income generated in the park area

In order to analyze the total amount of products / services within a year we calculated the turnover according to the market prices method. The economic operators need to have in use or in ownership sufficient assets to secure the whole process until the final product is sold by them. The turnover will compliance with principles and accounting standards. Market methods used were cost-base method and travel cost method.

2. Cost-Based method

Cost-based method assess the costs of different measures that would ensure the maintenance of the benefits provided by the environmental good or service being valued. These cost estimates are then used as proxies for the nonmarket environmental benefit in question. This method will used mostly in the cases of the environmental degradation, or if ecosystem service benefits needed to be recreated through artificial means (Garrod and Willis, 1999). The replacement cost method has recently been used to estimate the values of ecosystem services (Costanza et al 1997; Pimentel et al 1997 and Ehrlich and Ehrlich 1996).

All the above-mentioned theories helped us to analyze the following elements:

- quantity of public and private service/business premises and their turnover
- the revenues collected from the non-tax office
- the income from visitors, private entrance and park entrance
- government budgets
- extra budgetary funds
- international cooperation sources

3. Data collected from households

The data for the local households were generated from the Administrative units in the DNP and the Ministry of Agriculture and Rural Development (MARD). To generate the economic data across the Dajti Mountain National Park we performed 80 face to face interviews. The questionnaires were made in 16 villages, part of DNP. Through the farmers questionnaires we estimated their household's income which are part of the total revenue of DNP.

The second group of face to face interviews was made with local businesses exerting their activity at DNP. We interviewed 8 local businesses and 5 ambulant self-employed to the DNP. We take a full picture of DNP from their point of view.

Field questionnaires was used for cross-checking the information provided in advance and the realistic state of how annual turnover is achieved. The methodology for assessing the turnover evaluated all products / services provided by economic operators. The type and amount of services and products was not limited if it was a legitimate product / service. The amount of product / service was evaluated by the data ascertained in the last year. The impact of these assets over the long term is one of the key elements for the management of protected areas.

4. Results

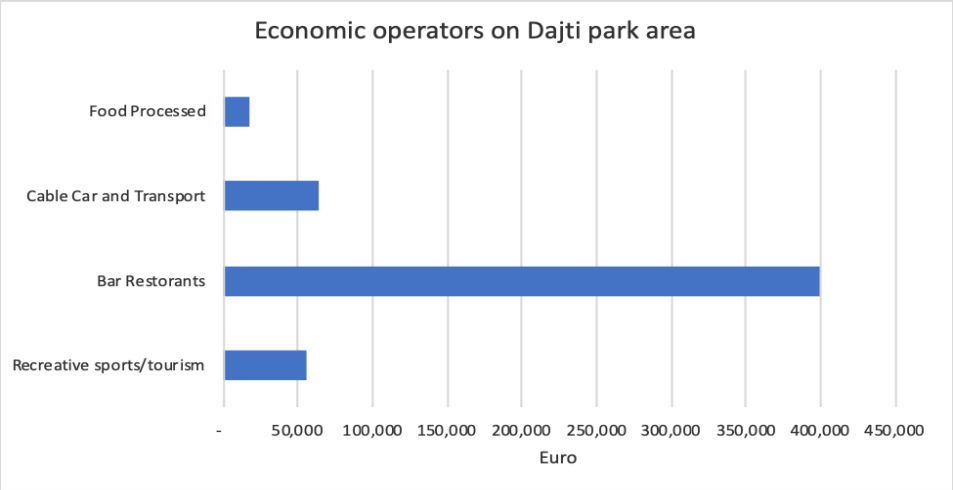
The estimation of ecosystems and biodiversity economic value lead to the assumption that these ecosystems supply goods and services. It also means that these goods and services supplied by ecosystems and biodiversity can be linked with economic assets (Godard, 2005).

The relationship between biodiversity and the ecological functions on one side, and the quantity of services provided on the other one, allows us to assume that the value of ecosystem services is a fair estimation of the economic value of ecosystems and biodiversity for human societies. As a consequence, the conservation efforts of ecosystems and biodiversity can ensure the value of the services provided by these ecosystems.

We have identified the income generated in the park area by two main flows as economic units and households.

Economic units have been identified only in the park's recreational and panoramic parts. They are mainly economic operators that provide income from tourist and entertainment services. Their income is calculated by direct interviews with managers or owners.

Table 1: Economic operators on Dajti park area



Source: Author estimation

The table 1, shows that the gross income of economic operators remains high. This is supported by the high number of daily tourists and more. Tourists are all groups age, social groups and different nationalities recently. In addition to the number of visitors to the region as an important element to measure the gross income of these activities, hedonic prices were also used. Hedonic prices are justified by the attributes to this park and not only the individual investment of entrepreneurs. We have used this element later as an alternative to the proposals for revenue growth on behalf of the government budget.

From the field observation and face to face interviews with local businesses exerting their activity at the park we concluded that their income were increased during the last five years.

According to the data provided from RAPA Tirane we can conclude that these activities are insignificant for the Albanian government budget.

Other activities have been identified farms of villagers within the Dajti Park. These activities generate income through the use of livestock and agricultural products.

The main type of households inside the park area is linked with territory characteristics.

Table 2: Income from households during 2019

Inhabitants (no)	Households (no)	Livestock (no)	Arable land (Ha)	Income from households (Euro)
7,246	1,582	12,227	1,712	7,420,605

Source: Author estimation

In conclusion, we estimate that total revenues derived from economic operators, farmers and government expense during last year in Dajti National Park carry gross incomes of 8,077,739 Euro. To have this value contributes the economic operators, farmers and international organizations. On the other hand, the Albanian government needs to cover the administrative expenditures for RAPA Tirane.

Conclusion and Recommendations

The beneficiaries from the DNP are divided into two categories. The bussinesses operating within the DNP borders, including restaurant owners and those who offer tourists services. The other group consists of villagers located at the boundaries of the park and visitors.

The representatives of bussinesses are satisfied with revenues, mainly for the summer, but they refuse to pay more contribution for authorities in order to collect the waste more often and keep the park clear. The price of cable car is too high so the families and visitors do not choose very often the restorant on DNP.

According to the entrance fee 60% of the interviewers consider it as very high for the families and the rest consider the tariff as a normal fee necessary to maintain the park and improve the level of services.

Living within the borders of DNP is not considered as big opportunity from the villagers. Their benefits are too low or almost inconsiderable. They suffer the unemployment, and long-distance market for their products. If agro tourism is going to be promoted may be the situation will improve, based on their opinion.

The forest is considered as a living opportunity for them, but after the moratorium on forestry have limited access to those products. The villagers have to pay even for using the pasture to graze their animals.

They have limited access to promote their products. A mediation process between communities and businesses on collaboration is considered a first step forward on income collection.

Another problem is the clarification of role and coordination between stakeholders within park area.

After the territorial and administrative reform, local authorities do not have many competencies in the administration of the territory and service provision to the citizens. The coordination action with park administration is a missing link at the institutional level. In case of services requested or concerns of the villagers, they address them to the municipality of Tirana.

The park administration is a structure hired for the park protection and administration. The actual challenge is how to finance the visitor center and how to increase the capacity of park administration in order to ensure a better protection of the park.Local Authorities should have a voice in the management of DNP.

- Park administration should involve the community in Park management and inform them on what happens in the Park.
- Some local action plan must be compiled on how to foster collaboration of businesses with farms
- Businesses have to contribute more towards park infrastructure and protection
- The park administration structure and institutions competencies must be defined clearly.
- Defining areas so that local farmers sell their products to visitors (farmer's market).
- Define a space in the visitors' centre or nearby where the farmers or artisans can organize exhibitions for their products.
- The administration of the Park in collaboration with relevant institution have to take action on how to create local brands for the products
- Penalties and restriction have to be applied for the visitors and community and businesses who pollute or damage the Park

- The National Inspectorate of environment in collaboration with park administration have to stimulate the mechanism of 'whistleblower '' who reports in the real time for park problems.
- The park administration in collaboration with education institution has to promote the voluntary work of youth for cleaning campaign or afforestation.

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COOPERATIVES IN RURAL AREAS: EXPERIENCES FROM SERBIA

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Abstract:

Global economic crises, ordinarily, lead to increased interest in cooperative sector in all countries, regardless of their level of development. In accordance with that, a change in the state attitude towards cooperatives can be noticed in the last few years in Serbia as well. The state support for existing and new cooperatives, especially for agricultural ones, was introduced in Serbia starting in 2017. Although there are certain positive effects manifested in the establishment of significant number of new cooperatives, it is still early to talk about the so-called revival of cooperative sector in Serbia, especially bearing in mind that certain types of cooperatives have been neglected for a long time and even completely banned.

This paper gives an overview of cooperative sector in the Republic of Serbia, with special emphasis on those types of cooperatives that have a significant role in the development of rural areas. In that sense, the focus is on agricultural cooperatives, which account for about 67% of the total number of registered co-operatives in Serbia, but are as well extremely important in terms of employment and participation in the gross domestic product of the cooperative sector. In addition, the effects of the change in cooperative law and the existing state support are examined. Further, serious shortcomings are also pointed out, which are primarily reflected in the non-existence of credit and savings cooperatives that jeopardize the vitality of other types of cooperatives. The analysis suggests that there is some progress, but that the potentials of cooperatives for the development of rural areas are still insufficiently used in Serbia.

Key words: Co-operatives, Rural areas, Serbia

JEL:Q1

Introduction

The first cooperatives on the territory of today's Serbia were formed only two years after the Rochdale Pioneers, the oldest cooperative in the world. The richness of cooperative forms, different types and sizes of cooperatives characterized the cooperative sector of Serbia until the beginning of the Second World War. Changes in the social, political and economic environment have had a tremendously negative impact on cooperatives, both in terms of their number and business performance.

Today, when talking about cooperatives in Serbia, one will primarily have in mind agricultural cooperatives. This can be justified by their significant number comparing to other existing types, but also by relatively weak business effects of non-agricultural cooperative forms. The importance of agricultural cooperatives is connected with the place of agriculture as a sector in the national economic system, but also with often emphasized need to connect farmers in order to achieve a better position on the market. In order to illustrate this statement, it can be said that agriculture participate with about 10 percent in total gross domestic products of Republic of Serbia, and that agricultural and food products have significant place in foreign trade, participating with about 18 percent in export and about 8 percent in import. The necessity of connecting farmers is well illustrated by the fact that the average size of family farm in

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Serbia, according to the last available data from 2012, is 4.5 hectares, but that it is made of six separated land parts.

Some of the most important characteristics of cooperatives in the Republic of Serbia are analyzed in the paper. In the first part a brief overview of the origin and development of the cooperative sector was given. Second part is focused on basic statistical data on the number and types of cooperatives. Case study on savings and credit cooperatives is in the third part and basic changes in cooperative legislation in the fourth. Fifth part of the paper is dedicated to the impact of state support to cooperatives realized in the last four years. In conclusion, the results of the research are summarized.

1. Development of the cooperative sector in Serbia

Serbia has a pronounced and successful cooperative tradition. The cooperative idea has been developed during the 19th century in Serbia. Only two years after the founding of the Rochdale Cooperative, the first credit-agricultural cooperative was founded on the territory of Vojvodina which was then part of Austrian-Hungary Empire. From 1894 the intensive development of cooperatives began on the territory of whole Serbia, especially the establishment of credit-agricultural cooperatives. In 1895 the first cooperative union of agricultural cooperatives was founded. The strength and importance of the cooperative sector of Serbia at that time is represented by the fact that Kingdom of Serbia was one of the founders of the International Co-operative Alliance, today the most important global cooperative institution. The adoption of the first law regulating this area (Law on Agricultural and Handicraft Co-operatives from 1898) further accelerated the establishment of new cooperatives. By the beginning of the 20th century, there were more than 650 mostly agricultural, savings and credit, craft and consumer cooperatives in Serbia. In the following decades, other types of cooperatives begin to appear, such as supply oriented, youth and health cooperatives.

In the first decades of 20th Century the number of cooperatives in Serbia is rapidly increasing, so before the Second World War there were 3,647 cooperatives. Cooperative sector was one of the important segments of economic life and participated in various activities such as: promoting savings among the population, providing households goods in rural areas, providing inputs for agricultural production and purchasing market surpluses of agricultural products and similar.

After the Second World War, cooperative movement in Serbia went through various phases. Immediately after the war, the formation of peasant labour cooperatives began, which proved to be very unsuccessful and significantly downgraded the cooperative sector. At the end of the 1950s, the position of cooperatives started to improve with the formation of general agricultural cooperatives, which significantly improved agricultural production. In the next decade, the first housing cooperatives started to establish. They developed extremely fast, so by the end of the 1960s there were already 1,400 housing cooperatives in the former Yugoslavia (SORS, 2011). In the same period, the number and strength of consumer cooperatives has been reduced and their role has been taken over by retail and syndical organisations.

After 1965, one of the unfavourable phases in the development of cooperatives has begun. The number of cooperatives has been decreasing; cooperatives have been merging with other legal entities. Cooperative unions have lost the status of legal entities, and later, after many processes of mergers and divisions, they've lost their property as well. Cooperatives also participated in different processes of integration and disbandment. After these processes many cooperatives, especially agricultural ones, faces numerous unresolved property issues, some of which have not been completed to this day.

It is obvious from the given brief overview of cooperatives movement in Serbia, that agricultural cooperatives, traditionally established in rural areas, have always had a special role. Agricultural cooperatives are among the first types of cooperatives to be established in Serbia

and the first to promote savings among the rural population. Health cooperatives have arisen from agricultural cooperatives' activities aimed at preserving the health of members. They also actively participated in providing basic products for rural households etc. Precisely because of their prominent role, agricultural cooperatives have been subjected to various experiments that have often had negative impact.

The 1989 economic and social reform introduced radical changes. The existence of cooperative property is again recognized and cooperatives are reaffirmed. However, economically weakened cooperatives had little capacity to seize this opportunity.

The cooperative sector was neglected in the transition process because of many problems it was facing. Cooperatives traditionally had a relatively small number of employees and, therefore, did not represent a priority in the transitional changes. They were also burdened with unsolved property issue in the biggest agricultural cooperatives. Generally, there was a lack of understanding for cooperatives and willingness to perform needed action.

The modern cooperative sector in Serbia is insufficiently developed and with inherited problems. Until a few years ago, there was almost no interest in the development of cooperatives. A reversal started in 2015, when the new Law on Cooperatives was adopted, and after two years the implementation of program for financial support to cooperatives begun.

2. The number of co-operatives, distribution by type and significance of agricultural co-operatives in Serbia

It is difficult to assess the role of the cooperative sector in the national economy without reliable data on the size and impact of cooperatives. The importance of cooperative statistics was recognized at the international level particularly after the United Nations declared 2012 for the International Year of Cooperatives (Grace, 2014). Statistics on cooperatives are essential when it is necessary to quantify the impact of these organizations on the welfare of their members and the economy as a whole. There are two types of registers that systematize data on the cooperative sector: government agencies in charge of cooperatives and registers kept by national cooperative unions or federations (ILO, 2017). Although these data are often not compatible, in the absence of a comprehensive source on the cooperative sector in Serbia, both sources were used to indicate the structure and dynamics of the cooperative sector in Serbia.

One of the important sources for data on cooperatives is the Serbian Business Register Agency. According to their data, there were 1,971 cooperatives in Serbia in 2010, which is decrease of 7.2% comparing to the previous year, when their number was 2,124 (Table 1). The most important segment of the cooperative sector is agricultural cooperatives, which participate with 65.4 percent in the total number of cooperatives in 2010, although their number decreased from previous year, when there were 1,425 agricultural cooperatives. A number of youth and students' cooperatives also decreased. These cooperatives are also an important segment of the cooperative sector in Serbia and contribute with 18.6 percent in the total number of cooperatives. Other types of cooperatives are significantly less represented.

Table 1: Number of co-operatives in Serbia by type

	Number of cooperatives		Frequency (percent)	
	2009	2010	2009	2010
Agricultural	1,425	1,290	67.1	65.4
Youth and students	378	367	17.8	18.6
Housing	146	132	6.9	6.7
Craft	87	89	4.1	4.5
Consumers	8	8	0.4	0.4
Other	80	85	3.8	4.3
Total	2,124	1,971	100.0	100.0

Source: Vukmirovic et al., 2015

The importance of agricultural cooperatives in Serbia is not only reflected in their number. The total number of employees in cooperative economy in 2009 was 8,524, and the majority worked in agricultural cooperatives (79.1%). These cooperatives also achieved the largest share (81.5%) in the gross value added of the cooperative sector. Agricultural cooperatives are not leaders only in the number of members: out of 122,192 coop members,[6] most were members of youth and student cooperatives (62.4 percent), while agricultural cooperatives participated with 25.5 percent in the total number of members (SORS, 2011).

In the next decade the Serbian cooperative sector had recorded a slight recovery. More recent data on the size of the cooperative sector in Serbia are from the database of the Cooperative Union of Serbia[7]. According to this source, sector is on the path of recovery, since there were as many as 2,726 active cooperatives in 2020. A significant number of cooperatives (around 650) were established in the period after 2017 and the implementation of the government support to the cooperative sector within the program *Five hundred cooperatives in five hundred villages*, which will be further discussed in the next part of the paper. Since all those newly formed cooperatives are agricultural cooperatives, it resulted in increase in their number to 1,709 or 62.7 percent of the total number.

It is estimated that the number of employees in cooperatives in Serbia in 2020 increased to about ten thousand, and the number of cooperative members to about 50 thousand. The specificity of cooperative sector in Serbia is reflected in the large number of associated members, which has many times exceeded the number of cooperative members and amounted to about 150 thousand (Gulan, 2020).

3. The saga of saving and credit cooperatives in Serbia

As in other Eastern Bloc countries, cooperatives in Serbia went through various experimental phases that were characterized by smaller or larger distortions from the true nature of cooperatives. However, until the transition period, there were no legal obstacles to form of any

[6] This number of cooperative members represent about 1.8 percent of population of Republic of Serbia, which is significantly below global average where about 12 percent of people on Earth is member of a cooperative (https://www.ica.coop/en/cooperatives/facts-and-figures)

[7] The Cooperative Union of Serbia should be the national association of all types of cooperatives in Serbia. However, they predominantly represent agricultural cooperatives, as indicated by the information presented on their website – that they are Serbia's national association of farming co-operatives (https://www.zssrbije.org/en/home/). As agricultural cooperatives are the most important segment of the cooperative sector in Serbia, it is not surprising to have one organization representing them. The problem is that if the Cooperative Union of Serbia focus exclusively on agricultural cooperatives, it means that there is no organization that represents the interests of all types of cooperatives in Serbia.

kind of cooperative. In this part of the paper is explained which steps preceded the abolition of savings and credit cooperatives in Serbia.

Savings and credit cooperatives (SCC) are one of the core forms of cooperatives, because they provide financial support to all other forms of cooperatives. Because of that, they are an indispensable segment of the cooperative sector. SCC are particularly important in rural areas and vital for agricultural cooperative because they provide resources for financing agricultural production.

The first cooperatives established in Serbia were engaged in savings and credit activities. Although they developed almost in parallel in urban areas and villages, they were far more significant in rural areas. The need for favourable sources of financing was higher among the rural population, and SCC developed much faster in these areas. The driving factors behind the foundation of credit agricultural cooperatives in the rural areas were unfavourable agrarian structure, increasing number of landless villagers due, small family farms and the heavy indebtedness of farmers to loan-sharks that were the only source of capital in that period (Simmons and Nikolić, 2016).

In those early days, saving and credit activities in rural areas were provided usually by agricultural cooperatives. After the First World War credit cooperatives started to emerge as independent organization. In between the two world wars, the credit cooperatives had ups and downs, but turbulent period in their development started after the Second World War.

There were two models of providing credit and saving services after 1945: in independent organization such the savings and credit cooperatives and the savings and credit departments in other types of cooperatives. Strong penetration of commercial banks on financial market in Serbia during the 1950s resulted in a significant reduction in the number of SCC.

After the period of marginalization, during the 1970s a revitalization of credit cooperatives started. The important step was enacting the Law on Saving-Credit Organisations and Businesses with Saving Deposits in 1977. This law enabled the foundation of saving-credit services in other types of cooperatives. In most cases agricultural cooperatives started their individual saving and credit services (SCS). It also means that after 1977, the saving and credit activities in all types of organisation, including cooperatives, were regulated by this special law.

In the following decade the number of SCS increased rapidly. In the first half of 1980s the SCS were one of the most important sources of financial support for farmers in rural areas. In the following years the political situation became rapidly more insecure, which affected the prosperity of SCS and SCC. At the beginning of the transition period, there were about 70 SCC.

The transition period was the beginning of the end of saving and credit cooperatives in Serbia. In changed environment and with weakened membership, saving and credit cooperatives did not significantly participate in the financial market in Serbia. They also had to face extremely strong competition from domestic and especially foreign commercial banks. All of this led to their neglect. Number of factors contributed to this process, but the crucial one is the change in cooperative and banking legal framework (Nikolić et al., 2018).

In 1993 new Law on Banks and Other Financial Organizations was enacted and according to this law, credit cooperatives, savings and credit organizations and savings institutions were listed as other financial organizations. The obligation of cooperatives was to harmonize their business with this law and since many of them failed to do so, they were either deleted from the register or prohibited from working, which later led to their liquidation.

The new general Law on Cooperatives was enacted in 1996 and this was a chance for credit cooperatives to return under the umbrella of cooperative law. Instead, this law "closed the door" to savings and credit cooperatives, leaving them entirely to legislation relating to financial institutions.

Even in this situation there was still an opportunity for credit cooperatives to survive, although they were in very difficult situation. The final factor that completely prevented the

business of this form of cooperatives is the adoption of the Law on Banks in 2005 which was enacted instead of Law on Banks and Other Financial Organizations. According to this law, savings and credit transactions can only be performed by banks, while all other financial institutions were obligated to transform into banks. The precondition for such transformation was the founding capital of ten million Euros in dinar counter value, which was an impossible amount for credit cooperatives. Saving and credit cooperatives that survived previous changes of legal and business environment were all abolished at the end of 2008.

This is also one of the extremely rare cases in the international cooperative practice that one type of cooperative is prohibited by law. Savings and credit cooperatives should serve as financial support for the cooperative sector, and particularly for agricultural cooperatives. Without saving and credit cooperatives, cooperative sector in Serbia is incomplete.

4. Changes in new Law on Cooperatives

The neglect of the cooperative sector in the Republic of Serbia in the transition period was manifested by the long-term delay in adoption of a new law on cooperatives, mostly due to the lack of political will to deal with unsolved issues in the cooperative sector. After seven draft laws on cooperatives, 19 years after the previous law and numerous political, economic and social changes, at the end of 2015 a new general Law on Cooperatives was adopted.

The expectations placed before this long-awaited law on cooperatives were very high. According to the research from 2010, directors of cooperatives in Serbia singled out the adoption of a new supportive law on cooperatives as the most important factor that would help their cooperative to perform better (Simmons et al., 2010). It was especially important to tackle with unresolved property issues in cooperatives.

During the 1970s, cooperatives were integrated into specialized agricultural companies called combines, and in that process they contributed with their significant assets. With the disbandment of combines at the beginning of the transition processes, a significant part of that property remained trapped in other legal entities (also parts of previous combines), and cooperatives had a lot of difficulties in proving ownership of that property. Cooperatives that were weakened were unable to organize large business ventures. Therefore, one of the key issues in the new law was resolving this problem. It is important to point out that this problem was included in the previous law on cooperatives from 1996, but that the procedure was relatively complicated, and there were often difficulties in its implementation. Given the complexity of this issue, it is difficult to assess the extent to which the solutions included in the Law on Cooperatives from 2015 are successful. It can be said, however, that some cooperatives have managed to prove ownership of property, especially of agricultural land. It is estimated that 80 percent of existing cooperatives in Vojvodina have solved this problem,[8] while in other parts of the country this percentage is significantly lower.

The novelties included in this law were aimed at facilitating the establishment of cooperatives. The number of founders was reduced from 10 (as stipulated in the 1996 law) to five, and the minimum capital of cooperative was defined at 100 RSD,[9] which certainly does not represent a limitation but also does not contribute to creating a material basis for the cooperative. That is why it is envisaged that the share of cooperative members do not have to be equal, which should enable easier collection of additional capital in cooperatives.

In some aspects, the law consistently applies cooperative principles adopted by the International Cooperative Alliance. For example, the investment in cooperative is not connected to the number of votes, i.e. strict application of the one-member-one-vote rule in the management of the cooperative is implemented. On the other hand, the financial surplus is

[8] https://www.makroekonomija.org/0-branislav-gulan/klasifikacija-zadruga/

[9] 0.85 Euros or 1 US$ (using exchange rate on November 13th 2020)

divided on two bases, according to the level of investment and the value of turnover through the cooperative, where this can be regulated in more detail by cooperative rules. Members of the cooperative can only be private persons, while legal entities are prevented from acquiring the member status. Finally, although it is a general law, it does not regulate the work of savings and credit cooperatives and pupils' cooperatives, which violates the unity of the cooperative sector.

Immediately after the adoption of the new law on cooperatives, the professional and general public discussed in detail the potential effect of this documentation on the development of the cooperative sector. However, the effects of the new law were, to put it mildly, weak. Apart from creating the necessary legal framework for the work of cooperatives, no significant results have been achieved. The project launched in 2017, called 500 cooperatives in 500 villages, had much more effects on the cooperative sector.

5. The program of government support to cooperative sector in Serbia

The Law on Cooperatives from 2015 emphasizes that cooperatives enjoy special protection of the Republic of Serbia, which is reflected in the encouragement of cooperatives through various support measures. However, in the past few decades, this support has been primarily declarative.

The first concrete measures to support the development of cooperatives started in 2017, when the Government of the Republic of Serbia adopted the program *Five hundred cooperatives in five hundred villages* with significant financial support of about 200 million RSD[10]. Based on the first positive results in 2017, which were reflected in the increased number of newly established cooperatives, the program has been extended in the following years. The goal of the program is to systematically improve the business of agricultural cooperatives, as well as the quality of life in rural areas. For that reason, cooperatives from less developed areas have an advantage in using financial support (Zakić and Nikolić, 2018).

The state aid program for cooperatives in Serbia is still at relatively early stage, but it has achieved certain results. According to the data of Cooperative Union of Serbia, 170 new cooperatives were founded in 2017, 150 in 2018, and in 2019 as many as 283. In total, over 600 new cooperatives have been formed in the three years of the program's implementation. For the sake of comparison, in the previous period, only about thirty new cooperatives were established per year: 31 in 2015 and 34 in 2016. At the same time, the number of cooperatives that use the available funds is increasing. In the first year, the beneficiaries were 22 cooperatives, in the second year 72 cooperatives[11], while in 2019 the funds were directed to 56 cooperatives.[12]

Without diminishing the importance of the increased number of cooperatives, as one of the effects of this program, it is not certain which methodology is used for measuring the results of high financial investments in the cooperative sector. Namely, data on the cooperative sector (as previously illustrated) are relatively scarce. Without adequate and reliable data on the size and strength of cooperatives, it is difficult to determine the type of assistance they need (UN, 2014). The success of cooperatives that are receiving state subsidies depends on the previous preparation of such actions. Management, technical and financial capacities for the survival and development of cooperatives need to be provided before they are granted financial support from the state budget (MacDonald et al., 2013).

In the absence of previous continuous indicators on the size and strength of the cooperative sector in Serbia, it is difficult to assess the effects of the implemented program. The goal of the financial support is not only to increase the number of cooperatives, but also to improve the business results of agricultural cooperatives and the quality of life in rural areas. For now, the

[10] 1,7 millions of Euros or about 2 millions US$

[11] https://www.makroekonomija.org/0-branislav-gulan/zasto-su-nam-danas-potrebne-zadruge/

[12] https://www.agromedia.rs/vesti/zadruzni-savez-srbije-samo-u-2019-godini-osnovano-je-300-zadruga/

effects of the program can be evaluated solely on the basis of the increased number of cooperatives, which is certainly significant.

The indirect effects of the program *Five hundred cooperatives in five hundred villages* are a gradual change in awareness of the importance of cooperatives in Serbia, as a result of numerous media activities throughout Serbia. It is certainly positive that government showed interest and was willing to provide long-needed investment in the cooperative sector. The positive effects of the implemented investments (and not only the increased number of cooperatives) would also be good arguments for cooperatives and their representatives to provide funding in the future.

Conclusion

After the initial significant successes of cooperatives in Serbia, these organizations were neglected for many years, which led to their material, economic and personnel decline. Revitalization of cooperatives requires active assistance from government, but also greater participation of existing and potential members. Although the need for association is often emphasized, there is not a sufficiently developed awareness of the benefits of membership in cooperatives.

One of the activities that could contribute significantly to strengthening position of cooperatives is introducing cooperatives as a subject in formal and informal education. Informing young people about true nature and potential benefits of cooperatives is extremely important and would create solid base for strong cooperative movement in following decades. Promotion of cooperatives in wider public is important as well. Changing global opinion is slow and requires hard work, but it would create willingness among population to participate in different forms of cooperatives.

One of the most important types of cooperatives in Serbia is agricultural cooperatives. Through their activities, these cooperatives contribute to the improvement of economic position of their members. However, due to the small number of members and the limited economic potential of cooperatives, their role in the development of rural areas and improvement of living standards of the rural population is almost unnoticed.

The support directed towards the cooperative sector has, for now, resulted in an increased number of cooperatives, which is certainly a positive change, the first in a longer period of time. In order for cooperatives in Serbia to achieve more noticeable results, a synergy of external and internal factors is needed. Under external factors can primarily be identified the continuation of financing cooperatives, with more detailed monitoring of the achieved effects of this form of support. This would require precise statistical data on the size and strength of cooperative sector. That is why it is important to set a specific register that would collect data on number of cooperatives, their members, economic size, and other valuable data.

Also, changes in legal environment that would result in re-establishment of saving and credit cooperatives is crucial. At the same time, more significant participation of existing and potential new members of cooperatives is needed, along with raising awareness of the importance of this form of association.

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EVALUATION OF FACTORS IN HUNGARIAN AGRICULTURAL INCOME

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Abstract:

The main goal of the present paper is to investigate the impact of agricultural income on production structures in Hungary. For this purpose, we assess the impact of direct income subsidies on farm structure. Among the main determining factors of agricultural income, differences in efficiency of labour is examined by sector and size category. According to the results significant part of agricultural income is provided by direct income subsidies. Large farms do not show efficiency gains originated from concentration alone. Without income support, the number of unprofitable large farms would increase significantly. Further evidence of the importance of the role of direct support in agricultural income – as opposed to economies of scale – is that farmers adjust their production size to support. Since the introduction of capping in 2014, both the number and area of farms over 1,200 hectares affected by the measure have decreased by 40 percent, respectively.

Keyword: agricultural income, direct subsidies, capping

JEL: Q10

Introduction

In rural areas, agricultural production and income are increasingly important, especially in the light of food security and the Covid19 pandemic. In this paper, the most important factors are analysed that play a role in the development of agricultural income. The impact of direct income subsidies on the efficiency of farming and on the basis of farm structural changes are assessed. Subsidies reduce the proportion of loss-making farms. Based on the extrapolation of the results on the represented population calculations were made on the database of the Farm Accountancy Data Network (FADN) operated by NAIK AKI.

Output of agriculture in the European Union (EU-28 member states) in 2018 amounted to 436 billion euros, of which Hungary accounted for 2.0 percent (EUR 8.4 billion). In Hungary, agriculture contributed 3.6 percent to the production of gross domestic product (GDP) in 2018, and 4.3 percent of gross value added (GVA) (HCSO, 2019). According to the system of agricultural accounts, the income of production factors of was EUR 3.9 billion in 2018. In agriculture, net operating profit amounted to EUR 2.6 billion, and net entrepreneurial income amounted to EUR 2.2 billion.

The value of change in the real value of factor income the income indicator "A"[13] in Hungary was EUR 9.0 thousand per AWU[14], while the EU average was EUR 16.7 thousand per AWU in 2018; In Hungary, it increased by 7.1 percent, while on average in the EU it increased by 6.4 percent compared to 2014. Income indicator "B"[15] can be used in countries where agricultural production takes place on individual farms, therefore Hungary is not relevant. The value of Change in real value of net entrepreneurial income the income indicator "C" is significantly, 18.5 percent lower than in 2014, while in the EU average it was 0.4 percent higher in 2018. The real value of net entrepreneurial income in Hungary decreased by 8.6 percent instead of 2014

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[13] Utilization (remuneration) of land, capital and paid and unpaid labour used in agricultural activities, which can be deducted from gross value added by deducting depreciation and other (non-product) taxes on production, as well as accounting for other subsidies on production.

[14] Annual Work Unit: the work output of a full-time employee on an agricultural holding for one year.

[15] Change in the real value of net entrepreneurial income per unpaid annual labour unit.

(EUR 2.4 billion), while the implicit price index of GDP calculated on a 2014 basis increased by 1.1 percent. The real value of net entrepreneurial income increased by 3.6 percent on average in the EU compared to 2014 (EUR 99.6 billion), and the GDP implicit price index calculated on a 2014 basis increased by 9.2 points.

The increase in the value of income indicators "A" and "B" in Hungary (next to the Czech Republic) is the lowest among the Central and Eastern European member states of the EU compared to the 2014 base (Figure 1). Poland and Slovakia show an increase of 40 percent, while Denmark and Germany showed a 30 percent decrease in income indicator "A".

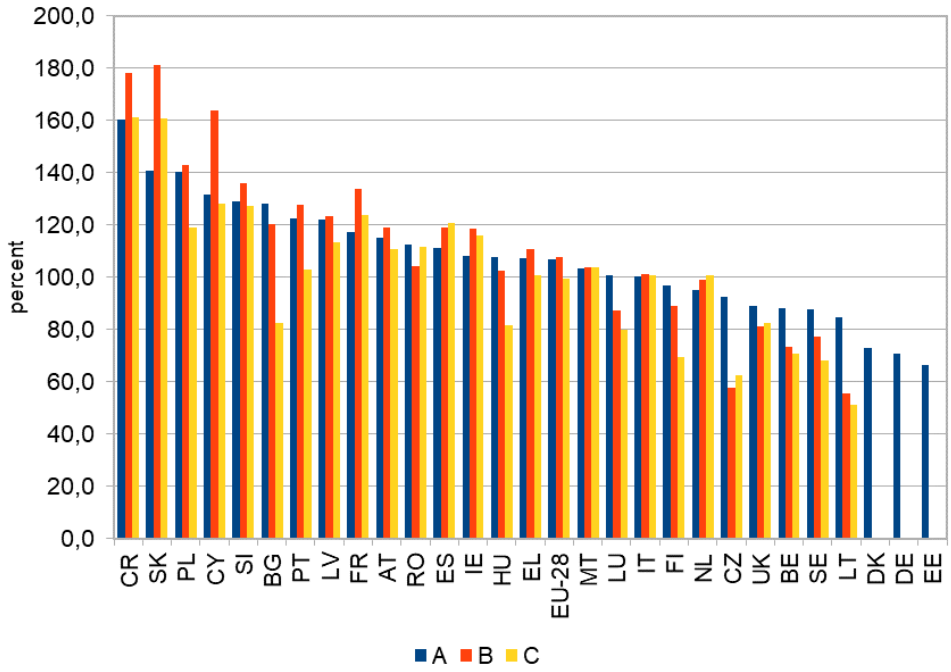

Figure 1: Development of agricultural income indicators, EU-28 (2014 to 2018)
Source: EUROSTAT (2019)

The income of the factors of production (arable land, capital, labour) has changed in recent years mainly depending on the yields of crop production and the purchase price of crops, which also greatly influenced the development of entrepreneurial income. In contrast, costs on the consumption side (wages, rents and loan interest) and the amount accounted for depreciation fluctuated less. In Hungary, the average annual labour income per capita was EUR 10,0 thousand, which is 77 percent of the national average (EUR 13.2 thousand). In the period between 2014 and 2018, the lag of agricultural labour income from the national average did not change.

1. The role of added value

According to the data of the EU FADN, the net value added (NVA)[16] per AWU in Hungary was EUR 22.8 thousand, while the EU average was EUR 21.4 thousand (6 percent less) in 2018. In the case of Hungary, the value of the indicator was 12 percent higher than in 2014. In Hungary, labour productivity by type of farm was higher in the arable and mixed farms than the EU average (27 percent and 71 percent, respectively), while it was lower in farms

[16] NVA indicator is suitable for comparing income, including farm income, wages and rents, interest and taxes paid by the farm.

specializing in horticulture, viticulture and animal husbandry (40 percent, 58 percent and 56 percent, respectively). In a comparison between Member States, the NVA per AWU in Hungary was at the level of Austria, the Czech Republic and Slovakia (EUR 20 thousand). For the Member States with the most efficient agriculture (Denmark, the Netherlands), NVA per unit of labour was three times higher in 2017, and for Germany, Belgium and the United Kingdom almost twice as high in 2017 (Figure 2).

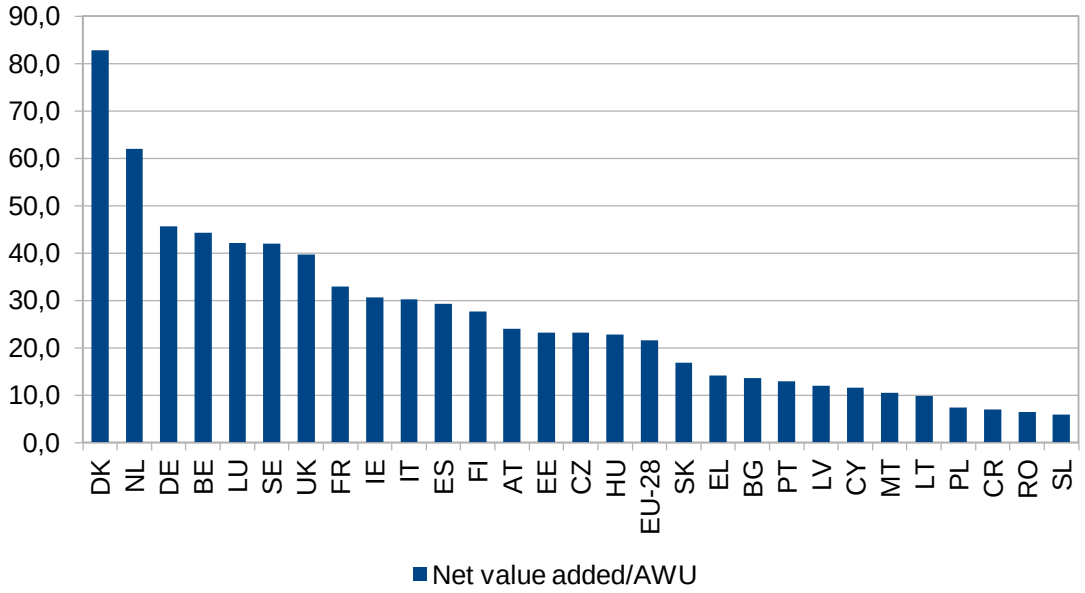

Figure 2: NVA per AWU in agriculture, EU-28 (2017), thousand EUR
Source: EU FADN

2. Sectoral differences

In Hungary, the median NVA per AWU in 2018 was the highest in field crop production (EUR 21.3 thousand), dairy farms (EUR 13.8 thousand), and specialist field vegetable production (EUR 13.5 thousand) and. It is lowest in poultry (EUR 7.5 thousand), mixed farms (EUR 6.3 thousand) and pig (EUR 4.1 thousand). There is a significant income disparity between the individual agricultural sectors. The average NVA per AWU was 42 percent higher for arable farmers (EUR 30.4 thousand), 69 percent for beef and sheep farms (EUR 21.3 thousand) and 54 percent for dairy farms (EUR 21.0 thousand), and specialist field vegetable production, was 259 percent higher in pig farms (EUR 14.1 thousand), 182 percent higher in mixed farms (EUR 17.6 thousand) and 126 percent higher in poultry farms (EUR 16.9 thousand) than the value for the median (Figure 3.).

Comparing the sectoral averages by EU member state and production direction in 2017 – through some examples – the average NVA per AWU of arable crops in Hungary (EUR 29.2 thousand) was 97 percent lower than in Denmark, 71 percent lower than in Germany and 5 percent lower than in France. The average NVA per AWU of dairy farms in Hungary (EUR 23.7 thousand) was also lower than in Denmark, Germany France (346; 127 and 42 percent).

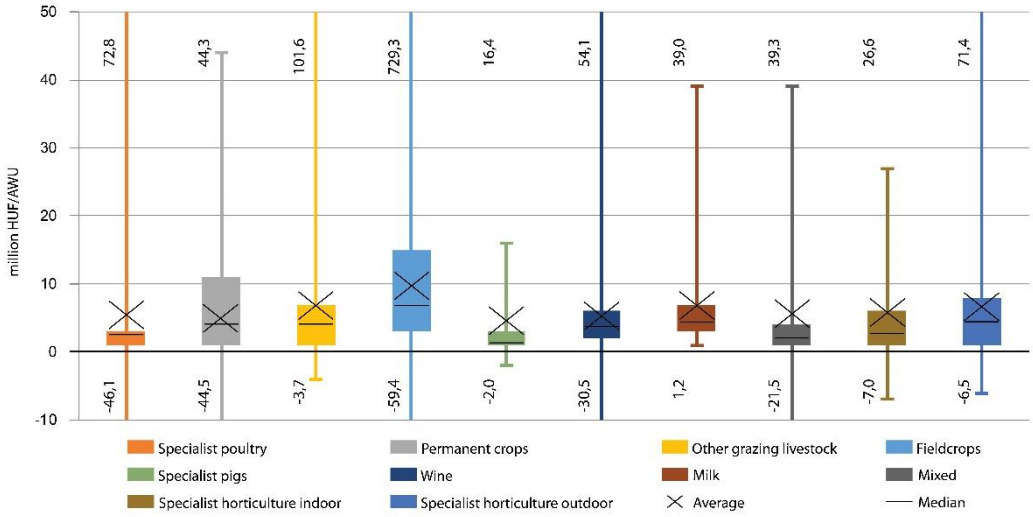

Figure 3: NVA per AWU in agriculture by main production directions, in Hungary, (2018)
Note: Exchange rate for one EUR yearly average was HUF 318.9 in 2018.
Source: Calculations based on NAIK AKI FADN data

3. Labour productivity

In Hungary, the NVA per AWU also shows significant differences in terms of economic farm size. The most efficient holdings are typically in the size category of the standard production value, expressed in Standard Output (SO) of EUR 90 to 250 thousand economic farm size category among the field crop (EUR 43.2 thousand), the specialist horticulture outdoor (EUR 36.9 thousand) and the beef and sheep farms (EUR 34.1 thousand), as well as dairy farms (EUR 32.5 thousand). The weakest efficiency is characteristic under EUR 25 thousand SO size group, especially mixed (EUR 6.0 thousand) and pig farms (EUR 2.6 thousand) (Table 1).

Table 1: NVA per AWU in agriculture by main production directions and economic farm size categories in Hungary, (2018)

Denomination	Under 25	25 to 90	90 to 250	More than 250	Total
	EUR thousand SO /AWU				
Specialist poultry	7.70	18.59	13.12	22.24	16.91
Permanent crops		15.42	18.49	15.30	15.14
Other grazing livestock	9.83	30.93	34.10	25.95	21.19
Field crops	17.94	31.14	43.25	33.48	30.39
Specialist pigs	2.58	11.33	17.28	16.52	14.15
Wine	17.53	14.81	16.82	0.00	16.52
Milk	11.38	20.39	32.54	22.29	21.11
Mixed	6.01	20.49	30.49	28.93	17.41
Specialist horticulture indoor	6.95	25.21	26.49	11.78	17.77
Specialist horticulture outdoor	12.62	21.08	36.92	27.35	20.77

Source: Calculations based on NAIK AKI FADN

In comparison of NVA per hectare by Member States Hungarian crop farms are lagging behind the EU average (EUR 1,011 per hectare ha), while in comparison of NVA expressed per livestock unit, Hungarian livestock farms are performing around the EU average (EUR 542 per LU) (Figure 4.).

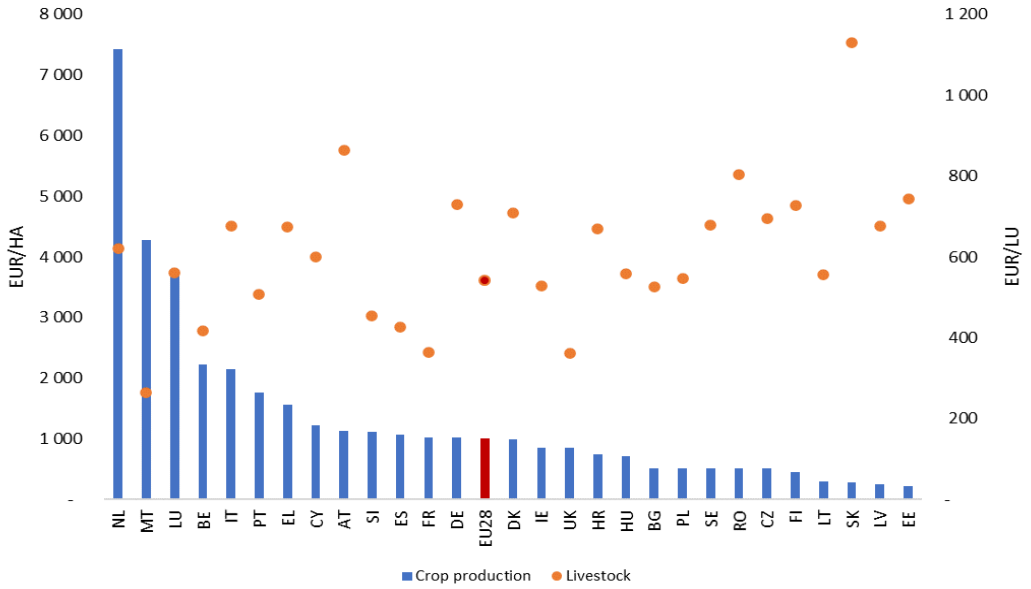

Figure 4: NVA in agriculture, EU-28 (2017)
Source: Calculations based on EU FADN

4. Costs of production

Production costs of average agricultural farm in Hungary amounted to EUR 73.6 thousand in 2017, which was 9.1 percent higher than the EU average farm cost (Figure 5.). Direct material type expenditure was 5.3 percent points, wages and contributions paid was 3.1 percentage points higher, while depreciation was 4.7 percentage points lower than the EU average. The latter suggests a technological lag. In Hungary, production costs increased by 11.2 percent between 2014 and 2017, while the EU average was 5.9 percent.

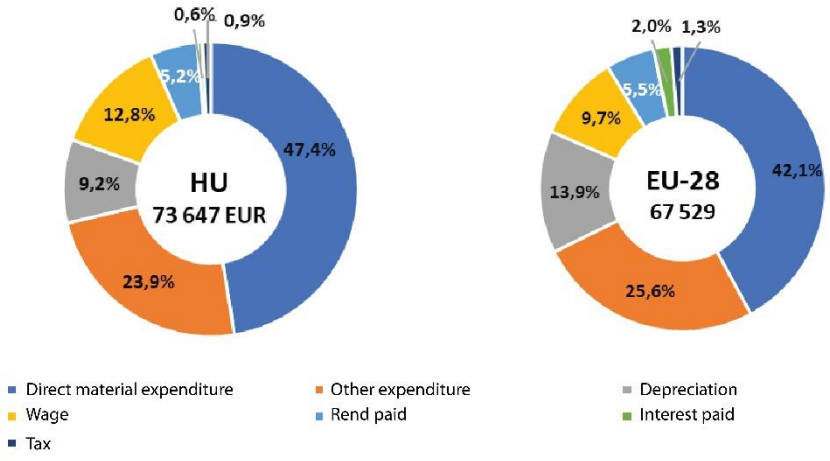

Figure 5: Farm production costs and their distribution in Hungary and the EU-28 average (2017)
Source: EU FADN

5. Income support

From 2015, in the framework of the CAP 2014-2020, Hungary applies the direct support system elements: the single area payment scheme (SAPS); green component for promoting the preservation or improvement of the state of the environment; support for young farmers; and the coupled support as a voluntary element of the direct aid scheme in certain sectors. Compliance with cross-compliance rules is a basic condition for these direct payments. The scheme is complemented by simplified support for small farms, which also comes from Pillar I of the CAP.

Among the direct support, the Hungarian State Treasury paid a total of EUR 929.0 million for the SAPS and the green component in 2018. At that time, 174.8 thousand applicants received the basic support. Hungary's share of total EU (28 Member States) direct aid was 3.1 percent in 2018. The average area of direct payments in the eligible area in Hungary (EUR 256.8 per hectare) was almost 97 percent of the EU-28 average and 95 percent of the EU-27 average (calculated with Brexit) (Figure 6.).

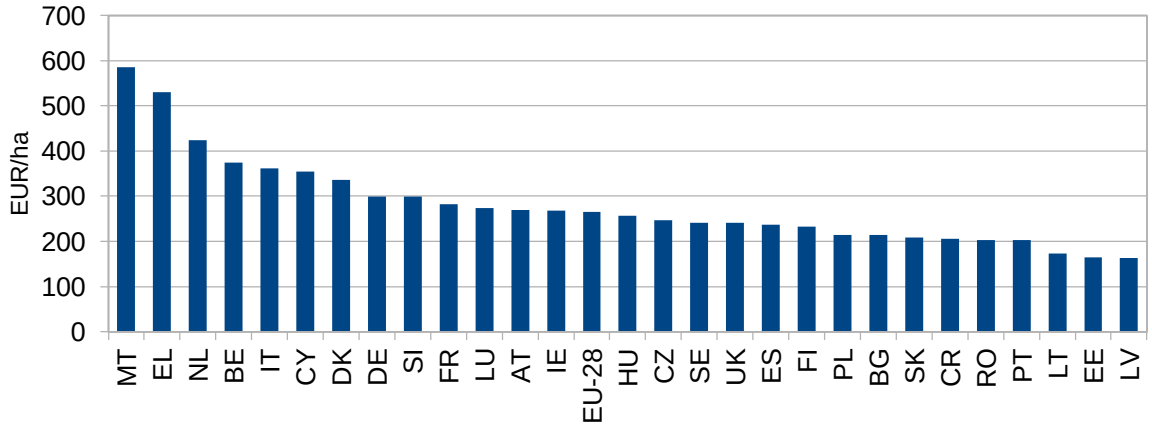

Figure 6: Specific value of direct agricultural subsidies in EU Member States (2018)
Source: Regulation (EU) No 1307/2013 and European Commission (2019c)

The structure of direct support in Hungary shows a stronger concentration than the EU-28 average (Table 2.), although in Hungary the amount of direct payments decreased by 47 percent, while the average amount of direct support per farm has decreased by 22 percent in the category above 300 thousand euros since 2014. In part it is the effect of Law No. 122 of 2013 introducing restrictions on the size of holdings and to Decree No. 5 of 2015 of the Ministry of Agriculture on the introduction of the ceiling for direct payments (capping).

In Hungary, about 85 percent of direct payments were received by beneficiaries above EUR 5 thousand, 22 percent of all eligible claimants. The EU-28 average shows a similar distribution: 85 percent of direct payments went to 25 percent of beneficiaries in 2018. In Hungary, almost 80 percent of farms receive only EUR 1.4 thousand of direct support per year. This amount (EUR 116.7) corresponds to a quarter of the gross minimum wage (EUR 432.8) per month.

Table 2: Direct payments by support size groups in Hungary and in EU (2014 and 2018)

Size group (EUR thousand)	**Farm holdings**		**Direct payment**		**Average support** (EUR thousand/ farm holding)
	thousand	%	EUR million	%	
Hungary					
2014					
Under 5	140.1	80.1	190.1	14.8	1.4
More than 5	34.8	19.9	1,097.5	85.2	31.5
5 to 10	14.9	8.5	105.0	8.2	7.0
10 to 50	15.8	9.0	333.7	25.9	21.1
50 to 300	3.6	2.0	351.9	27.3	98.8
More than 300	0.5	0.3	307.0	23.8	614.0
Total	*174.9*	*100.0*	*1,287.6*	*100.0*	*7.4*
2018					
Under 5	136.4	78.4	193.5	15.1	1.4
More than 5	37.5	21.6	1,086.3	84.9	29.0
5 to 10	15.2	8.7	106.9	8.4	7.0
10 to 50	17.8	10.2	383.1	29.9	21.6
50 to 300	4.2	2.4	433.2	33.9	103.5
More than 300	0.3	0.2	163.1	12.7	479.7
Total	*173.8*	*100.0*	*1,279.8*	*100.0*	*7.4*
EU-28					
2014					
Under 5	5,962.3	79.3	6,687.1	16.0	1.1
More than 5	1,558.0	20.7	34,991.3	84.0	22.5
5 to 10	624.4	8.3	4,404.3	10.6	7.1
10 to 50	807.3	10.7	17,393.0	41.7	21.5
50 to 300	121.7	1.6	10,701.2	25.7	88.0
More than 300	4.7	0.1	2,492.8	6.0	534.9
Total	*7,520.3*	*100.0*	*41,678.4*	*100.0*	*5.5*
2018					
Under 5	4,797.6	75.2	6,297.7	15.2	1.3
More than 5	1,579.9	24.8	35,203.9	84.8	22.3
5 to 10	621.0	9.7	4,402.0	10.6	7.1
10 to 50	835.4	13.1	17,999.1	43.4	21.5
50 to 300	119.1	1.9	10,471.5	25.2	87.9
More than 300	4.5	0.1	2,331.4	5.6	520.7
Total	*6,377.6*	*100.0*	*41,501.6*	*100.0*	*6.5*

Source: European Commission (2019d): Indicative figures on the distribution of aid, by size-class of aid, received in the context of direct aid paid to the producers according to Council regulation (EC) no 1307/2013, Financial Year 2018.

In Hungary, the continuously increasing EU direct subsidies from the accession to the EU until 2013 contributed to the growth of agricultural incomes, the facilitation of bank financing, the improvement of liquidity, and developments. The broadly steady weakening of the forint

against the euro also played a role. After the decline caused by the economic recession, the agricultural income mass rose to a higher level after 2009, and from 2017 the pre-tax profit exceeded the volume of income support (EUR 1.5 billion in 2018) (Figure 7.).

Figure 7: Agricultural income support and income development in Hungary (2004-2018)
Note: the pre-tax profit of individual farms adjusted for the wage level of economic organizations
Source: Calculations based on NAIK AKI FADN

6. Impact of income support

Subsidies reduce the proportion of loss-making farms. Based on the extrapolation of the results of the calculations based on the database of the FADN operated by NAIK AKI to the represented population, it can be stated that without direct subsidies from the European Union, 33% of commodity-producing farms in Hungary would have been loss-making in 2018. For example, beef and sheep farms were 43 percentage points, arable farms 25 percentage points, mixed farms 19 percentage points, pig farms 9 percentage points, dairy farms 13 percentage points and fruit farms 12 percentage points less loss due to EU direct payments as if they had not benefited, even indirectly (pig and poultry farmers) from them (Figure 8.)

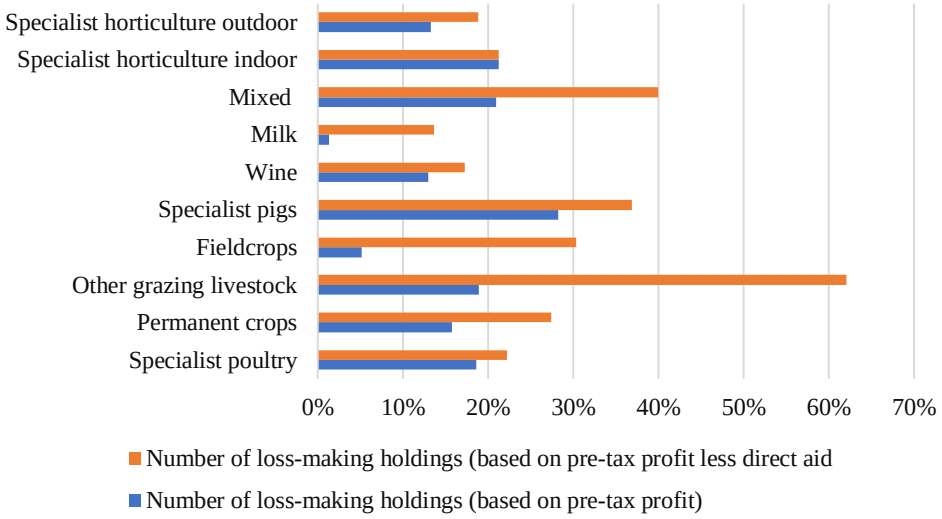

Figure 8: Proportion of loss-making agricultural holdings in Hungary, by production direction (2018)
Source: Calculations based on NAIK AKI FADN

In Hungary, the number of loss-making farms is decreasing in parallel with the increase in economic size (Table 3.). Based on the pre-tax profit of 2018, 85 percent of the loss-making 13.6 thousand farms belonged to the size category below EUR 25 thousand SO, and 5 percent to the size category above the EUR 90 thousand SO. Of the beef and sheep farms classified in the size category below EUR 25 thousand, those operating at a loss accounted for more than 10 percent of the beef and sheep farms specializing in these activities. In the same size category, loss-making fruit and vine growers cultivated 11 percent and 10 percent of all orchards and vineyards on farms specializing in these activities, respectively.

Table 3: Sectoral share of loss-making holdings by economic size classes (2018)

Denomination	Under EUR 25 thousand SO		EUR 25 to 90 thousand SO		EUR 90 to 250 thousand SO		More than EUR 250 thousand SO		Total	
	farm	LU/ Ha*	farm	LU/ Ha	farm	LU/ Ha	farm	LU/ Ha	farm	LU/ Ha
Loss-making holdings (based on pre-tax profit), percent of total										
Specialist poultry	13.1	1.0	2.6	1.1	1.2	1.5	0.1	9.8	18.7	13.4
Specialist pigs	24.3	2.4	3.1	0.8	0.0	0.0	0.0	13.4	24.3	16.6
Milk	-	-	0.7	0.2	0.1	0.1	0.0	4.8	1.4	5.1
Other grazing livestock	17.8	9.5	0.9	1.8	-	-	0.01	2.8	17.8	14.1
Field crops	3.9	5.7	0.8	1.0	0.2	0.7	0.1	3.3	5.1	10.7
Horticulture outdoor	13.7	1.4	2.5	0.9	0.8	0.1	0.1	7.7	13.3	10.1
Horticulture indoor	13.2	3.3	1.4	5.5	0.3	2.3	0.6	0.0	1.5	11.1
Permanent crops	20.1	10.8	6.6	12.1	0.8	4.3	0.1	12.0	28.5	39.2
Wine	5.6	9.6	0.9	2.4	0.7	4.3	-	-	5.6	16.4
Mixed	20.8	3.5/2.9	0.2	0.1/0.1	-	-	-	-	21.0	3.6/3.0
Loss-making holdings (based on pre-tax profit less direct payment), percent of total										
Specialist poultry	16.5	1.4	2.6	1.1	1.2	1.5	0.1	10.5	22.2	14.5
Specialist pigs	31.2	1.5	3.1	0.8	1.3	0.8	0.01	17.3	36.9	20.4
Milk			9.0	2.3	1.4	1.2	0.05	51.7	13.6	55.3
Other grazing livestock	50.8	19.8	9.0	17.0	1.8	6.8	0.02	7.7	62.1	51.3
Field crops	23.0	6.4	4.2	4.6	1.7	5.6	0.9	19.6	30.4	36.3
Horticulture outdoor	13.5	2.4	3.9	4.1	0.9	2.2	0.04	14.3	18.9	23.0
Horticulture indoor	15.9	3.3	2.9	5.5	0.9	2.3	2.0	0.0	21.2	11.1
Permanent crops	32.4	20.0	14.5	24.8	1.4	6.8	0.1	14.1	49.5	65.6
Wine	7.1	4.5	1.6	3.8	0.9	5.0	-	-	9.6	13.3
Mixed	38.4	8.1/10.0	1.1	1.3/1.8	0.1	0.3/0.3	0.04	27.6/20.6	40.0	37.3/32.8

Note: *for holdings specializing in animal husbandry: livestock expressed in livestock units (LU); in the case of holdings specializing in crop production, agricultural area (Ha).

Source: Calculations based on NAIK AKI FADN database

In the size category between EUR 25 and 90 thousand SO, the territorial share of loss-making fruit growers and vegetable growers was 12 percent and 6 percent, respectively, of the total number of farms specializing in these activities. In the size category above EUR 250 thousand SO, the loss-making poultry and pig farms had 10% of the poultry herd and 13% of the pig herd

of the farms specializing in these activities.

Based on the pre-tax profit reduced by direct subsidies, 24 thousand more farms would have made a loss, 37.6 thousand. Theoretically, 79 percent of these loss-making farms would have fallen into the economic size category below EUR 25 thousand SO and 8 percent in the economic size category above EUR 90 thousand SO.

Compared to the above, of the beef and sheep and sheep farms classified in the size category below EUR 25 thousand SO, the loss-making farms would have owned more than 20% of the beef and sheep herds on farms specializing in these activities. In the same size category, loss-making fruit growers would have cultivated 32 percent of all orchards on farms specializing in this activity. In the case of mixed farms, the proportion of those operating at a loss would have exceeded 38 percent. In the size category above EUR 250 thousand SO, loss-making dairy farmers would have kept 52% of the dairy herd of farms specializing in this activity, while loss-making pig farmers would have kept 17% of the pig herd of farms specializing in this activity (pig farmers receive EU direct support after other activities). Field growers and mixed farms would have operated on a surcharge on 20 percent of the area they cultivated, and 21 percent of the livestock on mixed farms would have made a loss.

7. Changes in farm structure

The increase in farm size and, at the same time, the increase in capital intensity, and consequently the increasing exposure to market risks, ultimately economic rationality forces economies from a certain level not towards diversification but towards specialization. The European Court of Auditors (2019) found that agricultural subsidies also encourage specialization. The benefits of specialization, on the other hand, can be seen in well-functioning vertical (higher added value) and horizontal (stronger bargaining position) coordination. The role of coordination is therefore also key from the perspective of resilience. Just like the change in the farm structure.

According to the 2000 General Agricultural Census (HCSO, 2001) and the 2016 Farm Structure Survey (HCSO, 2017), the number of individual farms decreased by 63 percent between 2000 and 2016, while the average farm size tripled between 2000 and 2016, it has grown to 7.6 hectares. The number of corporate farms increased by 72 percent between 2000 and 2016, while their average farm size fell to less than half, to 253.2 hectares. In the case of corporate farms, the decrease in farm size between 2010 (HCSO, 2011) and 2016 was marked in the categories between 100-300 hectares and above 300 hectares (Table 4.).

The change of farm size upper ceiling is regulated by Law No. 122 of 2013 and the introduction of capping by Decree No. 5 of 2015 of the Ministry of Agriculture. Based on the single area-based support data in 2013 and 2016, the number of applicants belonging to the size category between 300 and 1,200 hectares increased by 32 percent between 2013 and 2016, while the number of applicants belonging to the size category between 1,200 and 1,800 hectares and over 1,800 hectares increased by 21 percent and decreased by 54 percent, respectively.

The area of farms belonging to the size category over 1,800 hectares eligible for direct support in 2016 was 49 percent smaller than in 2013, it did not reach 360 thousand hectares. The area of farms eligible for direct payments in the size category between 1,200 and 1,800 hectares and 300 to 1200 hectares decreased by 23 percent during the same period (222 thousand hectares in 2016) and increased by 37 percent (1,185 thousand hectares in 2016). In conclusion, it can be seen that farmers adjust their production size to subsidies.

Table 4: Main characteristics of farms using agricultural land in Hungary, by size categories (2000, 2010 and 2016)

Size category (Ha)	Number of holdings				Average area (Ha)				Share of own land (%)			
	2000	2010	2016	Chg**	2000	2010	2016	Chg	2000***	2010	2016	Chg
Private holdings												
Under 1	662.2	376.9	205.0	31.0	0.25	0.23	0.23	92.0	95.9	98.2	98.7	102.9
1 to 5	174	82.1	73.5	42.2	2.2	2.4	2.4	109.1	93.0	94.7	95.3	102.5
5 to10	39.4	25.6	26.6	67.5	6.8	7.1	7.0	102.9	88.5	91.0	91.6	103.5
10 to 50	40.7	32.5	34.2	84.0	20.1	21.5	21.3	106.0	77.1	82.5	83.2	107.9
50 to 100	4.2	5.6	6.4	152.4	67.1	70.3	70.4	104.9	69.0	73.0	72.3	104.8
100 to 300	1.9	4.2	4.9	257.9	156.7	174.8	165.5	105.6	58.3	58.6		
More than 300	0.2	0.4	0.6	300.0	456.4	445.2	433.4	95.0	45.0	57.6	59.8	-
Total	*922.6*	*527.2*	*351.2*	*38.1*	*2.5*	*4.6*	*7.6*	304.0	*77.6*	*76.3*	*74.6*	*96.1*
Economic organizations												
Under 1	201	303	270	134.3	0.4	0.4	0.5	115.7	63.2	48.5	59.3	93.8
1 to 5	316	739	1073	339.6	2.6	2.9	2.7	103.4	34.9	28.9	50.8	145.6
5 to10	230	570	730	317.4	7.1	7.5	7.2	101.7	26.1	28.8	46.5	178.2
10 to 50	1003	1628	1739	173.4	27.9	25.4	24.4	87.5	18.5	20.8	32.4	175.1
50 to	370	695	772	208.6	71.4	72.7	72.8	101.9	15.0	15.8	21.3	142.0
100 to 300	839	1213	1279	152.4	205.5	338.3	184.1	89.6	11.2	8.4		
More than 300	1,430	1,651	1,669	116.7	1,483.9	1,852.9	937.7	63.2	9.7	6.6	9.6	-
Total	*4,389*	*6,799*	*7,532*	*171.6*	*532.9*	*322.4*	*253.2*	*47.5*	*10.1*	*8.8*	*10.5*	*10.4*

Note: *thousand in case of private holdings; **Change Index: 2000 = 100%; ***Year 2003 in case of economic organizations.

Source: ÁMÖ 2000, ÁMÖ 2010, GSZÖ 2016

The price of arable land has risen steadily in recent years (Table 5.). The increase was particularly strong between 2014 and 2018 for vineyards (74 percent) and orchards (69 percent). Rising land prices are slowing down the process of structural transformation and concentration and depriving capital of development, while improving the creditworthiness of farms.

Table 5: Average land prices in Hungary, by main cultivation branches (2014 to 2018)

Denomination	Arable	Grazing	Vineyard	Orchard	Forest
	EUR thousand/hectare				
2014	3.0	1.4	4.5	3.6	1.7
2015	3.4	1.6	5.0	4.3	1.8
2016	4.2	1.7	5.9	4.6	2.0
2017	4.4	1.9	6.9	5.2	2.2
2018	4.7	2.1	7.6	5.8	2.4

Source: Ministry of Agriculture (2019)

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TERRITORIAL COMPETITIVENESS AT COUNTY LEVEL IN ROMANIA, BY URBAN-RURAL TYPOLOGY

Mihai Chițea*

Abstract:

The paper presents approaches the evaluation of overall territorial competitiveness, at county level, following the development of an evaluation model based on a series of theoretical elements elaborated throughout the time, at international and national level. The starting point was a previous analysis of the theoretical framework of territorial competitiveness, from which the following idea emerged: as we access the upper aggregation levels (regional, macro regional, national), the local performance fades into an aggregated result. The elaboration of the model turned to classical econometric methods, for standardizing the selected indicators, as well as to factor analysis for highlighting the determinant factors of competitiveness at county level. The analysis of the results took into consideration the urban-rural typology and highlighted significant differences between the three types of counties (predominantly rural, intermediate, predominantly urban), as well as the determinant character of some groups of indicators from the model structure, like economic performance and population and labour force.

Key words: competitiveness, territory, urban-rural typology.

JEL: R10

Introduction

The evaluation of the overall performance of territories has been a constant debate issue at economic, academic and institutional level in the last centuries, marked by contradictory ideas and theories, but also by a common effort to identify all the relevant aspects of competitiveness at different aggregation levels. Although this process was not an easy, straight one, it involved, over time, many specialists from different fields, going back as far as Adam Smith's original trade theory of labour division that highlighted the importance of the economies of scale but also the fact that there are productivity differences between nations, or David Ricardo's theory of comparative advantage, supporting the idea that trade advantages may appear when two countries specialize in the production of goods for which they hold a comparative advantage. Coming back closer to our time, we cannot ignore also the ideas of one of the best known economists, Paul Krugman, that brought to light some of the problems regarding the ever increasing tendency to compare the territories, stating that "obsession regarding competitiveness is not only wrong, but also dangerous…thinking in terms of competitiveness can lead to bad economic policies regarding a whole series of problems". In this context, Porter and Ketels, referring to the increasing debates about the true nature of competitiveness, stated that true competitiveness is measured through productivity. And the list can go one, but this is not the main objective of this present paper aiming to evaluate the territorial competitiveness at county level in Romania. Thou, what can be added here in relation to our objective is the fact that based on these many and, sometimes, divergent theories, over time a large number of evaluation models have emerged worldwide, pursuing competitiveness at different aggregation

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levels. Some of those are now among the first options when referring to the evaluation of competitiveness, like: Global Competitiveness Yearbook (elaborated by the IMD World Competitiveness Center), Global Competitiveness Index (developed by the World Economic Forum), Regional Competitiveness Index (by the European Commission), or the UK Regional Competitiveness Index (developed by the Department of Trade and Industry of UK). What do all these models have in common? They all refer to the national or regional aggregation levels. But what about local level? Are there any models designed for this level? Yes, but few and far in between, emerged mainly from the research and education areas, focused on a specific local area of interest and looking at different aspects of competitiveness. This was the main reason for the present endeavour, of designing an evaluation model for the county level in Romania, starting from the variety of theories and evaluation models for upper aggregation levels.

1. Material and method

The starting point of this present paper was an extensive literature review process, taking into consideration different theories regarding the territorial competitiveness as well as the vast number of evaluation methods and models covering the national and regional levels. Based on this, and also on the characteristics of the county units from Romania, for the current research objective, the overall performance expressed through competitiveness at this level can be described by 6 criteria (categories of factors): : economic performance, population and labour force, infrastructure, education, health and research-development-innovation. A total number of 22 indicators were selected from the official national databases (from the National Institute for Statistics), covering all the evaluation criteria.

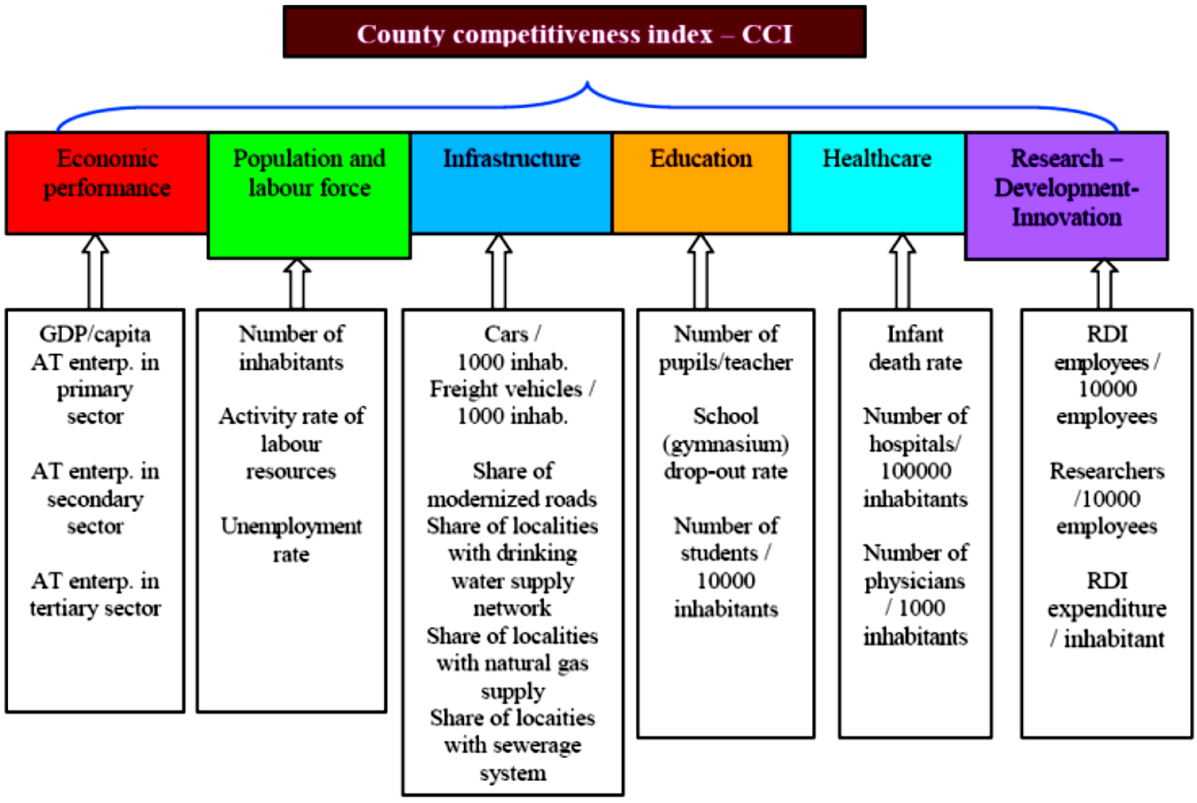

Figure 1: County Competitiveness Index scheme
Source: author's own scheme

The selection process took into account both the relevance of the indicators in describing competitiveness at this aggregation level and their availability, and the need of ensuring that the model is replicable. Thus, the data was extracted for the 2016 year, but the model can be easily updated as the information becomes available in the database.

The processing of statistical data started with a standardization/normalization process, based on the fact that the selected indicators were expressed in different measurement units. This step involved all the indicators (variables) for all the 42 counties from Romania. For each variable the minimum, maximum and absolute amplitude were taken into account and the normalized value was calculated. Also, this process respected the "de minimum" and "de maximum" nature of the variables. For example, in case of GDP/capita (a "de maximum" variable) a higher value means that the specific county has a better economic situation, whereas in case of school drop-out rate (a "de minimum" variable) a higher value denotes a less favourable situation of the educational system for that particular county. So, for "de minimum" variables, the maximum and minimum values were reversed, before the normalization process.

County/indicator	V1	V2	...	V22	V1 normalized	V2 normalized	...	V22 normalized
ACU1								
...								
ACU42								
Maximum								
Minimum								
Absolute amplitude								

Figure 2: Normalization of variables
Source: author's own scheme

By summing up the normalized values of indicators, a value has been obtained for each of the six criteria of the model, and finally, by summing these results, the final value of the County Competitiveness Index (CCI) was obtained. This process was supported by SPSS software, that allowed us to run different analysis (descriptive, Pearson coefficient), detaching the determining causality relations and identifying the trends (factor analysis). For the graphical representations of the results, a GIS programme was used, having in view the large number of investigated territorial units.

The analysis of the results concentrated on the urban-rural typology, developed at European level in order to target the balanced development of rural and urban areas. This typology turn to the rural population, as the main indicator, and groups the NUTS III level territorial units (counties, in case of Romania) in three categories: predominantly urban, intermediate and predominantly rural. Thus, based on the share of the rural population in total population, a county can be included in the following categories: *predominantly rural* - if the share of the rural population exceeds 50%, *intermediate* - if the share is between 20-50% and *predominantly urban* - if the share is <20%. Also, the presence of large urban centres is taken into account, so, for example, if in a predominantly rural area there is an urban centre with a population larger than 200000 inhabitants (representing over 25% of the area's population), then this area is considered an intermediate one. Appling this typology at national level, the Romanian counties have been grouped as follows: 25 counties - predominantly rural, 15 counties - intermediate and 2 counties - predominantly urban.

2. Results and discussions

Based on the normalized values of the indicators, a graphical representation (map) of values have been created for each of the 6 evaluation criteria. The first one, of the Economic performance criterion, highlight 2 counties that stand out from the rest, namely București municipality and Ilfov county, both being in the upper outlier, based on the values of this criterion. The map also highlights a concentration of territorial units, with low values, mainly in the south-west and north-east areas, but also in other areas, like Mehedinți, Botoșani, Covasna, harghita, Vâlcea, Caraș-Severin and Neamț, the majority of them being predomina:ntly rural counties.

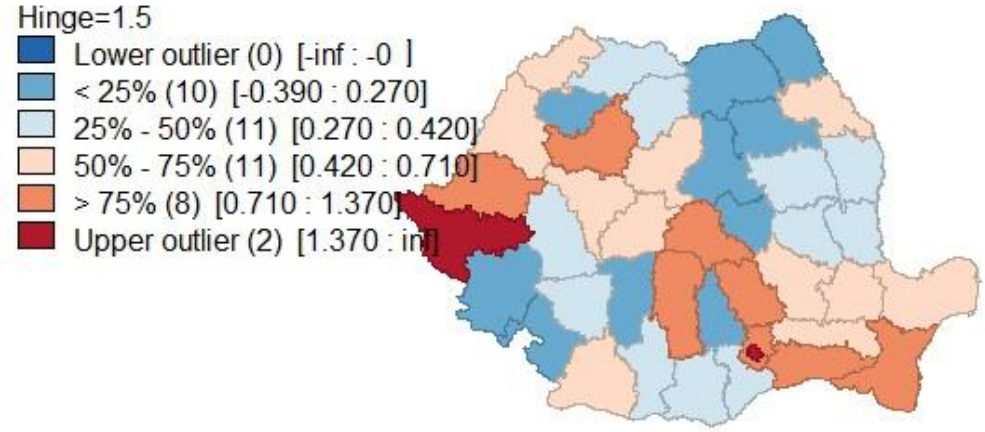

Figure 3: Clustering of counties, by the Economic performance criterion
Source: own processing based on Tempo-Online and E-Demos, NIS

Moving up towards the upper quartiles of classification, based on the value of the *economic performance* criterion, we can identify counties from the centre, south, south-east and north-west areas. All types of counties, based on the urban-rural typology, are present at this level. Thou, some of them stand out, like Arșes, Prahova, Cluj and Brașov (intermediate units), Călărași (predominantly rural) and Constanța (intermediate units). These are the counties closest to the upper outlier where București municipality and Ilfov county are included, both predominantly urban units.

The second criterion included in the model is *Population and labour force*. Similar to the previous one, the first quartile of counties (with the lowest values) is dominated by predominantly rural counties, mainly located in south-west, south, and north-east areas of Romania.

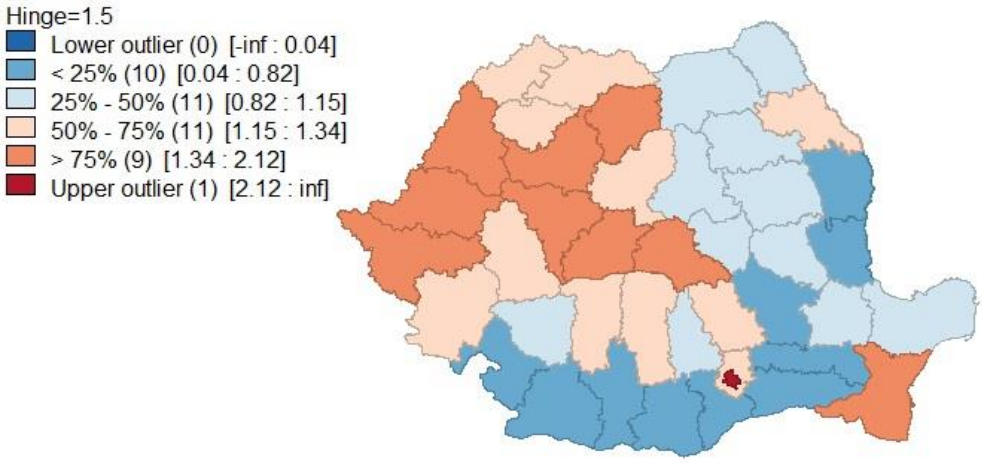

Figure 4: Clustering of counties, by the Population and labor force criterion
Source: own processing based on Tempo-Online and E-Demos, NIS

From a visual point of view, these counties create a corridor alongside Danube River, starting from the south-west area and continuing towards south, south-east: Mehedinți, Olt, Teleorman, Giurgiu, Călărași and Ialomița. The corridor is further extended towards the north-east part of the country, with counties from the second quartile, here also mostly predominantly rural, like Botoșani, Tulcea, Suceava and Vrancea.

The next 2 quartiles, based on the value of the *population and labour force* criterion, highlight a concentration of units in the north-west, centre and west areas, where all types of counties are present, based on the urban-rural typology. Timiș county, together with 5 intermediate counties (Cluj, Bihor, Sibiu, Brașov, Constanța) and 3 predominantly rural ones (Bistrița-Năsăud, Alba and Arad) represent the last quartile, with higher values - supported, mainly, by a lower level of unemployment and a higher value of the activity rate of labour resources. The upper outlier is represented by a single county, namely București municipality, with 2.95 points of out a maximum of 3 for this criterion.

The third evaluation criterion is represented by Infrastructure. There are six indicators included in this criterion, regarding the development level of the utilities infrastructure (water, natural gas and sewerage), quality of road infrastructure, population's mobility and the freight road transport capacity.

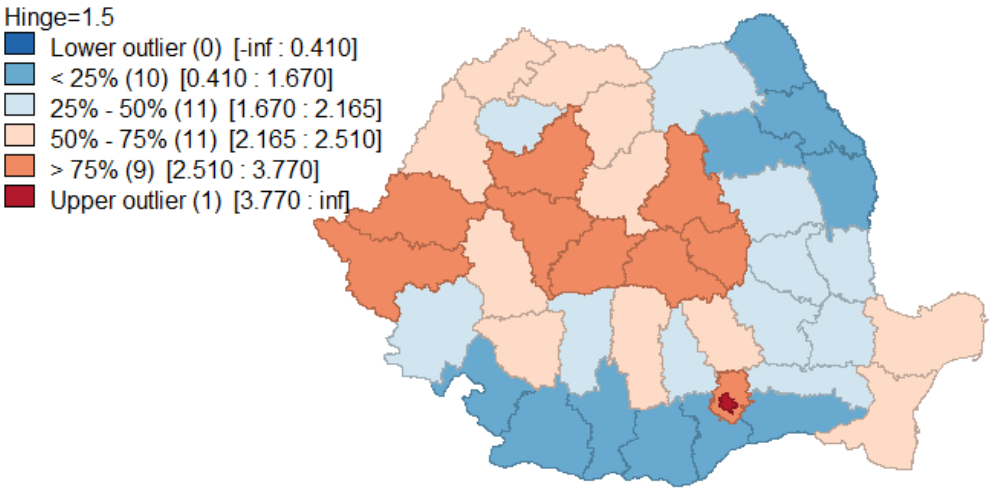

Figure 5: Clustering of counties, by the Infrastructure criterion
Source: own processing based on Tempo-Online and E-Demos, NIS

Again, București municipality and Ilfov county rank first and second, based on the value of the *infrastructure* criterion, followed by several counties from the west and centre areas, like Brașov, Cluj, Arad, Sibiu and Timiș. The indicators that contributed decisively to this result were the development level of the water supply infrastructure, population's mobility and freight road transport capacity. Thou, in many cases, the quality of road infrastructure remains a significant problem, it's contribution to the total value of this criterion being the lowest among the indicators.

At the other end of the hierarchy, the first two quartiles, with the lower values, are dominated by both predominantly rural and intermediate counties, mainly located in the south, north-east, south-east and south-west areas of the national territory. At this level, Botoșani, Teleorman, Vaslui, Olt, Neamț, Giurgiu, Dolj, Iași, Mehedinți and Călărași counties registered the lowest values for this criterion. Again, from a visual perspective, there is an evident corridor of counties alongside Danube river, extending to the north-east area, where low values are present. The result was based on the low normalized values for to population's mobility and freight road transport capacity, but also on the modest development level of the utilities infrastructure.

The fourth criterion is represented by *Education*, that groups three indicators considered relevant for the evaluation of educational system's performance at this territorial aggregation level: number of pupils/teacher, school (gymnasium) drop-out rate and number of students/10000 inhabitants.

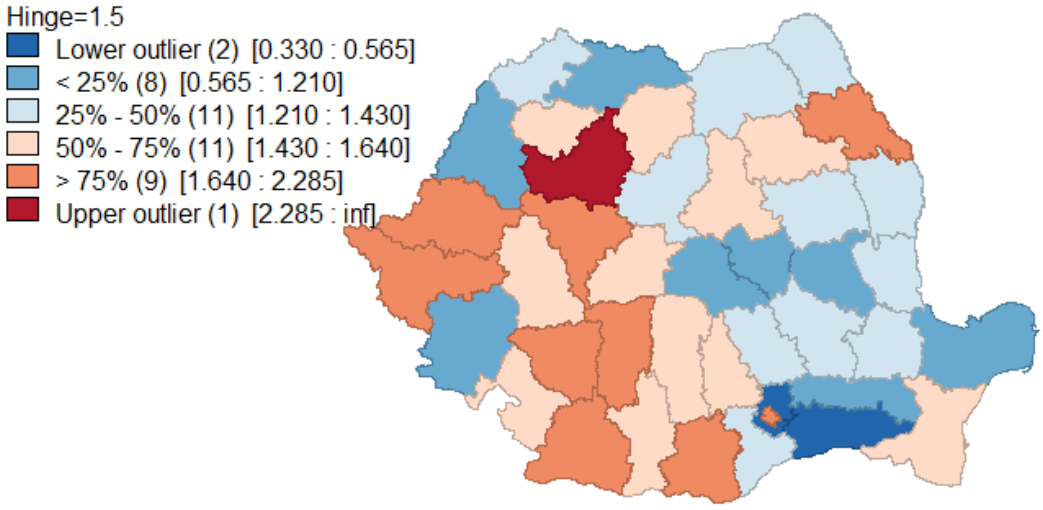

Figure 6: Clustering of counties, by the Education criterion
Source: own processing based on Tempo-Online and E-Demos, NIS

The first place, based on the value of the *education* criterion, is occupied by Cluj county, with a score of 2.48 points, followed by Vâlcea with 1.97 points, Arad – 1.90 points, Timiș – 1,89 points, Gorj -1,81 points and București municipality – 1.78 points. The result obtained by București municipality was determined by a higher number of pupils/teacher, and by a significant decrease of the number of students/10000 inhabitants.

In case of this criterion, it is the first time when a lower outlier is present, marking extremely low values, compared to the rest of the territorial units. Two counties fall into this category, namely Călărași and Ilfov counties. In case of Călărași county, the highest value of the school drop-out rate was registered and, also, a reduced number of students/10000 inhabitants. The second county present at this level, Ilfov, registered the highest number of pupils/teacher and similar to Călărași county, a reduced number of students/10000 inhabitants. As for the first

quartile, this is dominated by predominantly rural counties, with low values for this criterion, like Ialomița, Caraș-Severin, Vrancea, Tulcea and Covasna.

The last two quartiles, closest to the upper outlier, highlight a concentration of units in the south-west, south, centre and west areas, all types of territorial units by urban rural typology being present here. As for the upper quartile, only one county meets the criteria for being placed here, namely Cluj county, with a value of 2.48 points (out of a maximum of 3 points). The result was based on the highest number of students/10000 inhabitants out of all counties, and also by the levels registered in case of "de minimum" indicators.

From the perspective of the territorial distribution of counties, based on the value of the *education* criterion, there is an evident concentration of territorial units with low values, mostly predominantly rural, starting from the south part of the country and moving up towards the east, north-east. This process is also evident in the case of other criterions and signals the existence of a development gap, based on the overall performance of territorial units, between the east and west part of the national territory.

The fifth evaluation criterion included in the model is Health. This includes 3 indicators considered relevant for evaluating the population's access level to medical services, overall performance of the health system and specific infrastructure's.

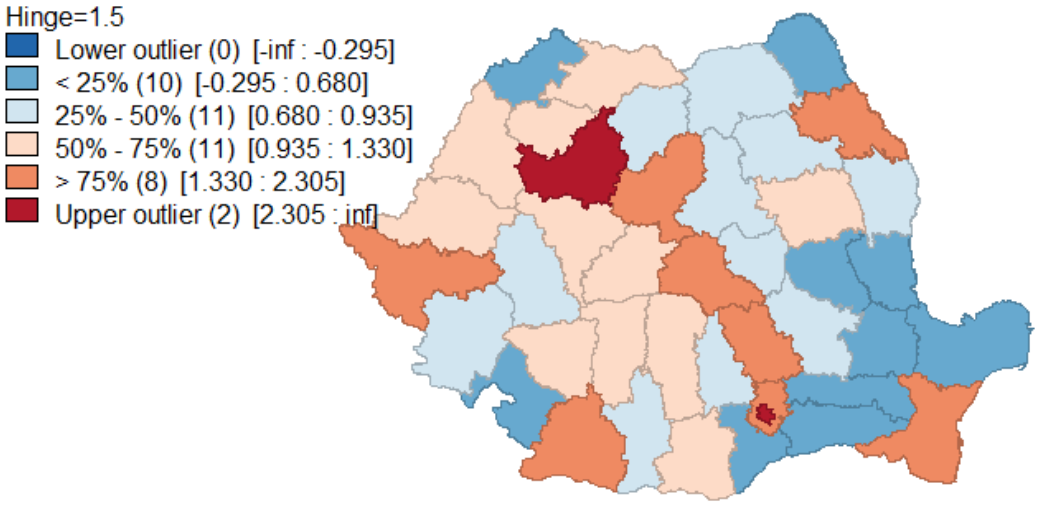

Figure 7: Clustering of counties, by the Health criterion
Source: own processing based on Tempo-Online and E-Demos, NIS

The best results in case of *health* criterion were obtained by București municipality, followed by 6 intermediate counties, namely Cluj, Timiș, Iași, Dolj, Brașov and Constanța. What do all these counties have in common? The presence of university centres and university medical units, that constitute a solid base for qualified human resources and access to modern health technologies, very important elements for a modern and efficient medical system.

At the level of lower quartiles, those of counties that have registered lower values for this criterion, there is a concentration of territorial units, mostly predominantly rural, in the south and south-east areas, like Călărași, Giurgiu, Tulcea, Brăila, Ialomița, Vrancea and Galați. In case of Călărași county, that ranked last, the result was determined by the highest value of the infant mortality rate ("de minimum" indicator) and by the lowest number of doctors/1000 inhabitants, that translates into a low access level of the population to specialised medical services provided by this category of health personnel.

Based on the urban - rural typology, there is an evident gap between the territorial units, the large majority of predominantly rural counties being present at the level of the first two quartiles, whereas intermediate and predominantly urban ones fall, mostly, in the last 2

quartiles, registering higher values for the *health* criterion. Only two counties, namely București municipality and Cluj county, meet the criteria for the upper outlier - in this case the result was supported by all three indicators included here. These are territorial units known for their strongly developed medical system, as well as renowned medical higher education training centres.

The last evaluation criterion included in the model is Research-Development-Innovation. It groups 3 indicators related to this sector, referring to the human capital and public expenses/capita. Ilfov county ranks first, based on the value for this criterion, with the maximum score of 3 points, followed by București municipality and other 7 intermediate counties: Iași, Argeș, Cluj, Timiș, Dolj, Sibiu and Brașov. This position of Ilfov county, the first among all 42 counties of Romania, was determined by performance registered at the level of the 3 indicators – number of employees/10000 occupied persons, number of researchers/10000 occupied persons and public RDI expenses/capita. Similar to the previous criteria, the first two quartiles are dominated by predominantly rural counties, distributed along the south south-east, north-east and north-west areas.

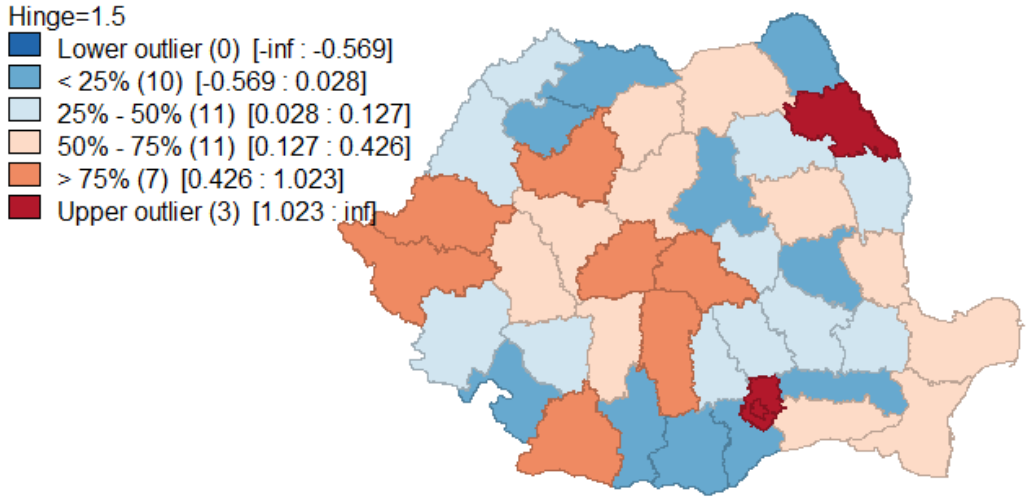

Figure 8: Clustering of counties, by the RDI criterion
Source: own processing based on Tempo-Online and E-Demos, NIS

As for the upper outlier, it includes three counties that registered the highest values for this criterion, Ilfov, București municipality and Iași - the main contribution in this case came from highly qualified human capital, expressed through the number of researchers/10000 occupied persons.

The last step of the methodological process is the summing of the values for the six for each of the 42 county level territorial units, leading to the County Competitiveness Index (CCI).

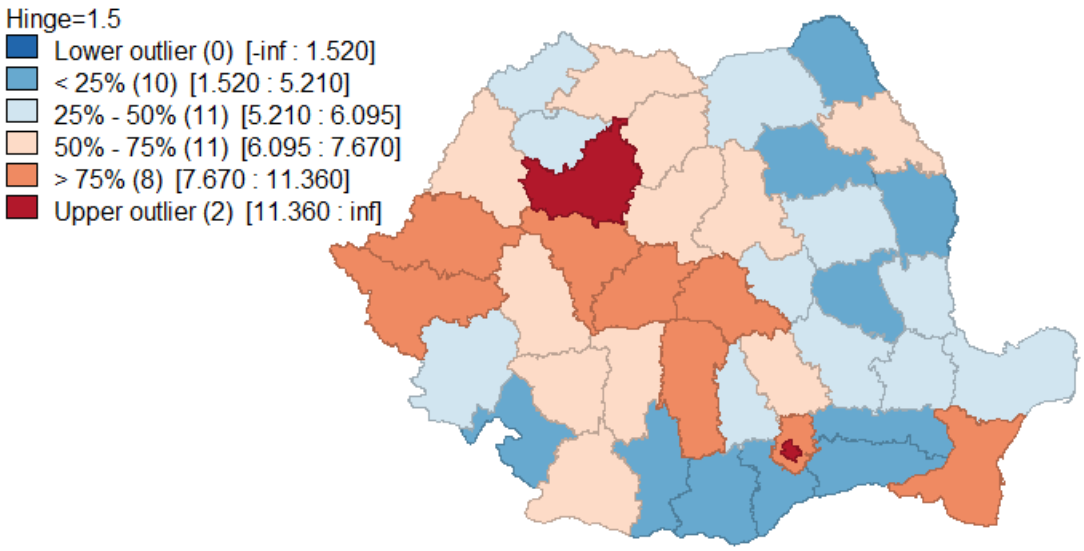

Figure 9: Clustering of counties, by the County Competitiveness Index (CCI)
Source: own processing based on Tempo-Online and E-Demos, NIS

The final hierarchy, by the value of the *CCI* comes as no surprise, confirming, overall, the individual performance of the territorial units for all criteria included in the evaluation model. București municipality ranked first, followed Cluj, Timiș, Arad, Brașov, Constanța, Sibiu and Argeș counties. The result obtained by București municipality was mainly supported by *economic performance, population and labour force, infrastructure and health* criteria, sector that are well developed in this predominantly urban county.

The graphical representation of the *CCI* values at county level, highlights the distribution of the investigated territorial units in 4 quartiles and one upper outlier. There is a concentration of predominantly rural counties present in the first two quartiles, with lower values of the CCI, like Botoșani, Călărași, Giurgiu, Vaslui, Mehedinți, Ialomița, Olt, Teleorman and Vrancea. Moving up, the third quartile groups 11 counties, both intermediate and predominantly rural, mainly located in the south-west, centre and vest areas. The last quartile is represented by 8 counties, covering all types of units based on the urban-rural typology: Timiș, Ilfov, Arad, Brașov, Constanța, Sibiu, Argeș and Alba. The upper outlier is represented by two counties, namely București Municipality and Cluj county.

If we were to group these 42 county level units based on the *CCI* value in 3 categories, associating them an overall performance expressed through competitiveness, then:

- The first 2 quartiles would represent the group of counties with a low level of territorial competitiveness: Botoșani, Călărași, Giurgiu, Vaslui, Mehedinți, Ialomița, Olt, Teleorman, Vrancea, Neamț, Brăila, Tulcea, Galați, Caraș-Severin, Buzău, Suceava, Dâmbovița, Covasna, Bacău, Satu Mare and Sălaj;
- The third quartile would represent the group of counties with an average level of territorial competitiveness: Gorj, Hunedoara, Harghita, Maramureș, Bistrița-Năsăud, Bihor, Dolj, Mureș, Vâlcea, Prahova and Iași;
- The fourth quartile and the upper outlier would represent the group of counties with a high level of territorial competitiveness: Alba, Argeș, Sibiu, Constanța, Brașov, Arad, Ilfov, Timiș, Cluj and București municipality.

Conclusions

The current theoretical model, based on 6 evaluation criteria, including 22 indicators, allowed the creation of a hierarchy of the Romanian territorial units of county level, based on the *County Competitiveness Index* (CCI). There is an evident gap between the counties, by urban-rural typology, the predominantly rural ones ranking, mainly, in the first two quartiles, with lower values of the CCI. Some of these counties are: Botoșani, Călărași, Giurgiu, Vaslui, Mehedinți, Ialomița, Olt, Teleorman and Vrancea. Thou, some units of this type did reach the upper quartiles, most of them located in the west area of the national territory, within the inner Carpathians arc, process that highlights a cleavage in this category of units, based on the spatial distribution, namely a gap between the counties from the perimeter delimited by the south, south-east, north-east areas and the centre, west and north-west areas.

At the same time, the intermediate counties, with a few exceptions, cluster in the third and fourth quartiles, but the same spatial distribution gap, as in the case of predominantly rural counties, is also present. At this level, of the upper quartiles, the intermediate counties Argeș, Sibiu, Brașov and Timiș, as well as Ilfov county (predominantly urban) complement the general overview of competitiveness, the *CCI* values being close to the upper outlier represented here by București municipality and Cluj county.

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Panel 3:

The Belt and Road Initiative and the Bulgarian-Chinese Economic Relations

THE SIX THEORETICAL CHARACTERISTICS OF THE BELT AND ROAD INITIATIVE AND ITS SIGNIFICANCE IN BULGARIA AND CENTRAL AND EASTERN EUROPE

Zhang Yaojun*

The Belt and Road Initiative (BRI), first proposed in 2013 by Chinese president Xi Jinping, has now come into its seventh year. In October 2020, the fifth plenary session of the 19th Central Committee of the Communist Party of China adopted the 14th Five-Year Plan (2021-2025), reaffirming the importance of promoting and cooperating on the high-quality development of the BRI.

The BRI has not only provided a new channel for China's reform and opening up policy, but also provided a platform for international cooperation to boost global economic recovery, growth and development. With the concerted efforts of all stakeholders, the BRI has become popular international public goods and the world's largest international cooperation platform.

Given that the COVID-19 pandemic is still spreading globally and that countries are facing the dual challenges of fighting the pandemic and recovering economically, the joint promotion of BRI cooperation has a more prominent significance due to its inherent theoretical and practical characteristics.

1. People-centered

There are still more than 700 million people living below the poverty line in the world. The World Bank warns that the COVID-19 pandemic may push 100 million people back into extreme poverty. Eliminating poverty remains an urgent challenge facing the international community.

The BRI has truly benefited people from participating countries and further fulfilled their expectations for a better life. Over the past seven years, the BRI has created a large number of projects that have benefited local people and solved the issues of unemployment and poverty for tens of thousands of people.

In June 2019, the World Bank reported its estimation over trade growth between 2.8 and 9.7 percent for corridor economies and between 1.7 and 6.2 percent for the world. Moreover, BRI transport projects could help lift 7.6 million people out of extreme poverty and 32 million people out of moderate poverty.

According to data from the World Bank and the International Labor Organization (ILO), China's service imports provided more than 18 million jobs for its trading partners in 2019. China's service imports from countries along the Belt and Road route have created nearly 3 million local jobs, an important outcome of the win-win cooperation in the service trade.

Since early 2020, the COVID-19 pandemic has had various impacts on the construction of the BRI. Chinese enterprises have been actively fulfilling and assuming their social responsibilities. According to the results of the survey on 12 BRI partner countries in Asia, Africa and Europe, entitled "Survey Report on Chinese Enterprises' Overseas Image 2020 with regard to the BRI," 60% of the respondents were most impressed by the measures taken by Chinese enterprises that "put the lives and health of corporate employees first". More than half of the respondents believe that Chinese companies have improved their country's infrastructure and provided support for the development of its education, medical care and public health.

The people-friendly nature of the BRI has won worldwide recognition. According to the statistics, the Chinese government has signed 201 intergovernmental cooperation agreements

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with 138 countries and 31 international organizations, and they have worked together on over 2,000 cooperation projects at ever increasing scope, with results exceeding expectations and benefiting the world, and making the BRI one of the most important multilateral cooperation frameworks supporting the United Nations 2030 Agenda.

2. Development-oriented

Since 2006, China's contribution to global economic growth has been ranked first in the world for 14 consecutive years, making it the number one engine for global economic growth. As stated in the 14th five-year plan, China will build a mutually beneficial cooperation system in the industrial and supply chains, deepen international cooperation in production capacities and expand two-way trade and investment.

Industry is the pillar of the economy, finance is the lifeblood of the modern economy, and infrastructure connectivity is the cornerstone of development. However, the lack of a complete infrastructure is an important factor restricting the economic growth and social development of many developing countries. Under the BRI, many developing countries have actively cooperated with China to jointly improve the construction of their local infrastructure. In the past seven years, focusing on the main framework of "six corridors, six roads, multiple countries and multiple ports", a number of BRI landmark projects have made substantial progress.

An illustrative example is the China-Europe Freight Train Route. As of November 5, 2020, the number of China-Europe freight trains has reached a new record high of 10,180. These trains have transported 927,000 TEUs of containers (up 54% year-on-year), reaching 21 countries and 92 cities in Europe. The China-Europe freight trains have become a veritable "life channel" and a "bond of a shared future" between the European and Asian continents.

These projects have effectively improved the infrastructure level of the countries along the Belt and Road route, shortened their transportation times, reduced trade costs, released the potential of trade and investment, and provided strong support for the maintenance of the security and stability of the international industrial and supply chains, and fundamentally improved the economic development momentum of countries along the route.

Relying on high-quality infrastructure and transportation systems, a significant portion of BRI investment has been put in newly established economic zones, industrial parks, and manufacturing or public buildings. With the advancement of the building of infrastructure under the BRI, the economic activities of participating countries have become more diversified, and development between regions has become more balanced. The BRI has helped many countries to effectively reduce their development gaps at national and regional levels.

3. Innovation-driven

The world today is undergoing a larger and deeper scientific and technological revolution and industrial transformation, with flourishing new technologies and applications such as artificial intelligence, cloud computing, big data, the Internet of Things, blockchain and other new forms of business. Global development has increasingly taken on a digital character.

According to the *Digital Economy Report 2019* published by the United Nations Conference on Trade and Development (UNCTAD), only a fifth of the people in the least developed countries currently have access to the Internet, while four fifths of the people in developed countries use the Internet, and Africa and Latin America together account for less than 5% of the world's colocation data centers.

The BRI also features innovation-driven concepts. The Digital Silk Road has been initiated to help partner countries bridge the “digital gap” and inject new impetus into the digital transformation of countries along the route. China, now the world’s second-largest digital

economy, has launched the BRI Digital Economy International Cooperation Initiative, and has signed the Memorandum of Understanding on Digital Silk Road Construction & Cooperation with multiple countries.

As a result, 34 cross-border land cables and numerous international underwater cables have been built in 12 countries. The newly developed BeiDou system covers all countries and regions along the BRI route, providing continuous, accurate and reliable services in a wide range of fields including transportation, land planning and fine agriculture. Chinese digital enterprises have participated in the construction of information infrastructure in fields such as intelligent cities, mobile payment and sharing economy in more than 170 countries around the world.

A report published by McKinsey shows that the development of digital services in Central and Eastern European countries (CEECs) accelerated during the COVID-19 pandemic. CEECs can take into consideration China's Digital Silk Road when going through digital transformation. Creating new growth points for cooperation between both sides will greatly help regional economic and social recovery and development, contributing to the joint construction of a convenient, smooth, innovative, developed, open and trustworthy Digital Silk Road.

4. Inclusive approach

The BRI adheres to the principles of dialogue instead of confrontation, and partnership rather than alliance, and is committed to building a mutually beneficial cooperation network, a new model of cooperation and a multifaceted cooperation platform, as well as a new model for openness and cooperation featuring multi-dimension network and all-round connectivity.

This approach is based on four "opens," which are "open mind, open space, open fields and open mechanisms". First, "open mind" means that all countries are welcomed as long as they have the will; second, "open space" means based on Asia, Africa and Europe, facing the world, and promoting world-wide cooperation; third, "open fields" focuses on 'five goals,' while aiming at solving global concerns; and fourth, "open mechanisms" aims to reduce institutional transaction costs through bilateral, tripartite, regional and international cooperation.

China has become one of the most open countries in the world and the largest trading partner of more than 130 countries and regions around the globe. Over the past seven years, China has had increasingly closer trade relations with countries along the BRI route. In terms of value of trade, the total import and export volume of trade in goods between China and the countries along the Belt and Road route increased from US$1.04 trillion in 2013 to US$1.34 trillion in 2019, and the cumulative total import and export volume of trade in goods over seven years exceeded US$7.83 trillion.

China proposed to establish the Asian Infrastructure Investment Bank (AIIB) to promote infrastructure construction and interconnection in Asia. Over the past four years since its opening, the AIIB has grown from 57 founding members to 103 members from six continents today. As of today, the AIIB has provided 24 members with 87 infrastructure projects with an investment totaling nearly US$120 billion. Since the outbreak of the COVID-19 pandemic, the AIIB has acted quickly and launched the COVID-19 Crisis Recovery Fund, which has now expanded to US$13 billion to support members in responding to the pandemic and recovering economically.

The main reason behind the fact that the BRI has attracted more and more partners is best explained by president Xi's word that "the BRI will not become an exclusive club." The countries alongside the Initiative can all benefit from jointly building the BRI and through multilateral cooperation.

5. Win-win results

"Building a community with a shared future for mankind is in essence to connect the prospects and destinies of every nation and country closely together." China has put forward the initiative of jointly building a community with a shared future for mankind and an open, inclusive, clean and beautiful world that enjoys lasting peace, universal security and common prosperity. As a banner of China's diplomacy, the BRI is an open platform, a philosophy for development, a concept for global governance, and a reliable partnership for improving the well-being of all humankind rather than just an infrastructure project.

In 2019, the bilateral trade volume between China and CEECs reached US$ 95.42 billion, an increase of 6.9%, higher than that of China-Europe trade. China's investment in CEECs is still active this year. As of the end of June 2020, China had directly invested US$3.05 billion, and indirectly invested over US$12 billion in CEECs.

Influenced by natural conditions and historical factors, CEECs are more dependent on agricultural development and are important crop production areas in Europe. However, parts of Central and Eastern Europe are facing challenges this year due to the COVID-19 pandemic and droughts. This agricultural product trade occupies a prominent position in the cooperation between China and CEECs, and agriculture is also one of the key areas of cooperation between the two sides.

Bulgaria is the lead country for China-CEEC agricultural cooperation. In 2015, the Association for the Promotion of China-CEEC Agricultural Cooperation was set up in Bulgaria. Agricultural products such as Bulgarian yogurt and rose products have continuously entered Chinese households, and the Chinese market has become a new growth point for exports of agricultural products from Central and Eastern Europe.

According to Bulgarian media reports, the country's wine industry is facing difficulties due to the pandemic and wine consumption and exports have decreased. A positive from this is that in the past few months, there has been a turnaround in the online wine trade. Many online wine shops have emerged, and in particular, online orders from China have increased significantly.

6. Future prospects

As a trans-century project, the BRI is oriented towards the future. The BRI has provided many programs and activities designed for young people including studying abroad in China, educational cooperation, young leadership training courses and youth exchange programs, etc.

In 2019, the Sofia Chinese Cultural Center was officially opened, and a joint Silk Road Exhibition on the occasion of the 70th Anniversary of the Establishment of Sino-Bulgarian Diplomatic Relations was held. Many Chinese universities, including Beijing International Studies University, where I work, offer undergraduate programs in Bulgarian language. There are two Confucius Institutes in Bulgaria, and Sofia University also offers Chinese language majors and was designated as a Chinese Proficiency Test (HSK) site. These will further consolidate the basis of friendly exchange among the youth and lay a solid foundation for the future of bilateral relations.

The construction of an ecological civilization is related to the future of mankind. Along the Belt and Road, most countries are developing countries and emerging economies, with complex ecological environments and high dependence on resources for economic development. They are generally faced with the contradiction between development and protection brought about by industrialization and urbanization. China insists on green development in the BRI construction and is committed to taking the path of coordinated economic, social and environmental development. While striving to pursue its own green development, it will jointly

create green international public goods with BRI participants and promote the construction of a global green governance system .

Specific initiatives include: the establishment of the Belt and Road Initiative International Green Development Coalition (BRIGC), and the issuing of *The Belt and Road Ecological and Environmental Cooperation Plan*， as well as the *Green Investment Principles for the Belt and Road*. China's Ministry of Ecology and Environment has established the BRI Environmental Technologies Exchange Center, built a BRI green supply chain platform, strengthened the transfer and transformation of green, advanced and applicable technologies in BRI-participating countries, and promoted the joint research and development, promotion and application of advanced ecological and environmental protection technologies.

Conclusion

In the first year of the 14th Five-Year Plan in 2021, China will enter a new stage of development. It will continue to work with partners to uphold the principles of extensive consultation, joint contribution and shared benefits, openness, greenness and clean government, and high standards to benefit the people's livelihood. Moreover, it will promote international cooperation under the BRI, and promote a high-level opening up to the outside world, which will be beneficial to regional economic recovery and sustainable development, further bringing tangible benefits to all countries and people.

In July 2019, President Rumen Radev of the Republic of Bulgaria paid a state visit to China during which the two heads of state announced that the relationship between the People's Republic of China and the Republic of Bulgaria would be upgraded to a strategic partnership. In early 2015, the two countries signed a memorandum of understanding on the co-construction of BRI cooperation. Bulgaria was one of the first CEECs to sign an intergovernmental cooperation document on the joint construction of the BRI with China. We believe that the relationship between the two countries will be even better during the high-quality co-construction of the BRI.

THE ONE BELT ONE ROAD INITIATIVE: IMPLEMENTATION OF A PUBLIC-PRIVATE PARTNERSHIP MODEL (THE BULGARIAN CASE)

Bistra Boeva*

Abstract:

"One Belt One Road" is a Mega project that symbolizes Globalization and the connectivity among states, companies and people. In a period of five years (2013-2018) plans were turned into new railroads, logistic centres and transport facilities. The literature review and media publications have revealed information about kilometres of high speed railways, a huge volume of investments in Africa, Asia and Europe. Politics, political ambitions and political concerns are priorities of many academic studies. This paper examines the "One Belt One Road" initiative from a different perspective: business models and mechanics that transform the strategy of Chinese leaders into infrastructure projects in Central and Eastern Europe (CEE), including Bulgaria***. The core problem under investigation is the rationale and applicability of a Public-Private Partnership within the "One Belt One Road" Initiative***. The results of a literature review and first-hand information provide us with some answers and with a new set of questions. The paper is organized as follows: (i) Introduction, (ii) Part One, which summarizes recent trends in "One Belt and One Road'' developments in CEE and the Balkans; (iii) Part Two sheds light on the essence of PPP; (iv) Part Three analyzes the results of field research; (v) the final part concerns the perspectives of a PPP model within the ''One Belt One Road'' initiative in the Balkan region, incl. Bulgaria.

Key words: One Belt One Road, PPP, business models

JEL: F50

Introduction: how the case was developed and the research methods used

The case was prepared according to the case study methodology: empirical research; analysis of received first-hand data and verification of the results with analogous studies.(HBS 2006(Due to the limits in terms of access to first-hand information sources second -hand data was also used.

As mentioned above, ***the objective of the study and this paper is to examine the rationale and applicability of a well-known model in international business - Public Private Partnership- within a mega project such as ''One Belt One Road''(OBOR***). It was discovered that the questions concerning the mechanics of business relations among partners on the Silk Road are not on the research agenda of academics. With regard to well -known international business patterns and my previous studies, I stick to the view that the various business aspects of a Public Private Partnership serve nature and objectives of OBOR-related projects. From the perspective of methodology, my case study is structured accordingly: a literature survey and field research via interviews and inquiries; evaluation of the information and the development the case study. It was my intent to limit the case study to Bulgaria as an EU member-state and a supporter of multilateral cooperation between CEE, including Balkan countries and Bulgaria, on one hand, and China on the other.

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1. The Balkan Silk way

1.1 OBOR

Irrespective of the fact that the of the focus is on Public Private Partnership projects within Bulgarian-Chinese economic relations, we have to look at the bigger picture, namely, EU-China cooperation on one hand ,and OBOR and 16+1 on the other. Although from the very beginning EU and China have declared a strategic partnership (Christiansen Th., R.Maher, 2017), an asymmetry exists: there are restrictions for the participation of EU companies at present and questions have arisen whether a balanced and mutually beneficial economic relationship with China is even possible (Christiansen Th., R.Maher, 2017). Academic research reveals a specific strategic engagement among the priorities of Chinese policy towards EU countries. This could be an indicator for the feasibility of the implementation of Public Private Partnership projects. "*Besides its political objectives, OBOR brings a much needed strategic focus and greater coordination policy to governments' "going out strategy", which encourages Chinese firms to go abroad in a search for new markets, or investment opportunities*." (Johnson, Chr. 2016) Other publications echoed the above views about the driving forces behind OBOR: absorption of a massive Chinese excess industrial capacity in steel production, cement and other industrial production, increasing marketing opportunities in OBOR countries that cover 2/3 of the World's population and a 1/3 of world GDP. Evaluations about drivers such as profit and feasibility of OBOR projects are controversial. These evaluations and explanations refer to the basic instruments of Chinese economic policy and the instruments that support the foreign activities of Chinese SOEs. Seen from a European perspective, the government-led investment initiatives and lending arrangements originating in Beijing have repercussions in countries as diverse as Germany, Greece, Serbia, North Macedonia and Bosnia and Herzegovina. (Bastian, J., 2017) From this perspective it is note-worthy to examine the role of Public Private partnership projects within the OBOR initiative.

1.*2 CEE countries OBOR and 16+1 are moving in the same direction*

Cooperation between CEE separate countries and China is a fact. Most of the projects are under the "16+1" scheme for cooperation, and some under an OBOR scheme. Irrespective of different status-quos, countries from the region label their transactions with the Chinese Government in a similar way: "*an Eastward opening*", according to official Hungarian terminology; "*reliable friendship"* according to the wording of the Serbian Government and also "*tremendous opportunity*" (Kynge, J., M.Peel, 2017) The focus of cooperation is infrastructure. It was reported that both EU member- states and non -EU member -states benefit from Chinese investments: Bosna &Hercegovina leads the rankings of CEE Chinese investments in the region-more than USD 3,5bn; followed by the Czech Republic- USD 3bn, Romania-more than USD 2bn and Serbia -around USD 1,5bn. Bulgaria is not among the recipients of Chinese funding. Despite the fact that the projects are a part of the "16+1" scheme of co-operation, "*it(China(sees the 16 countries as a gateway to Western Europe and one that is critical to Beijing's Belt and Road Initiative."*(Kynge, J., M. Peel 2017) The academic community examines this through a different lens - the existing format of 16+1 and OBOR. The "16+1" format is described as a dual China approach "*with focus alternating between Brussels and individual Member States…… increasingly differentiated, sub-regional focus, targeting clusters of individual Member States along Europe's traditional geographical division lines Central and Eastern Europe*(CEE)". (Chang V.F.Pieke 2017) Diversity in the EU- China economic relations in terms of "*different interests vis-à-vis China, depending on their political, economic and normative dispositions*."(Christiansen,T., R.Maher 2017) has questioned the nature and possibility of mutual project .

Different views are a good food for thought and a benchmark for the researcher. The above comments can not be neglected. Mutuality is not the main feature for CEE countries, and the Balkans as well. Although the paper and field research did not touch on and did not study the political and critical infrastructure issues of OBOR and "16+1'' projects, academic correctness requires the offering of views of EU officials and the positions of EU policy nay-sayers, such as Hungarian Prime Minister Viktor Orban. According to media sources, the President of the EU Commission Jean-Claude Juncker has sent a clear message about Chinese investments, specifically, that the EU needs to "*protect its collective security*". However, Hungarian Prime Minister V. Orban pointed out that "*the world economic centre of gravity is shifting from the west to the east. This is not just my opinion, it is fact.*"

One has to agree that for some of the initiatives in the region OBOR is supplementary to and being implemented simultaneously with the "16 + 1'' framework. This was confirmed by the unprecedented visits of Xi Jinping himself to Belarus in April 2015, Prague in March 2016, and Belgrade and Warsaw in June 2016. (Góralczyk B)

Within the "16+ 1'' framework there have been a number successful projects, which can be mentioned, such as the High-speed railroad via Asia to Turkey, the concession of the Port of Piraeus, energy projects and the initiation of the Balkan ''Silk way''. The high- speed railroad project is, along with similar Chinese infrastructure projects in Africa, Asia and Europe, the result of the so-called "*railroad diplomacy*". (Mikheev 2015)

1.3 Balkan ''Silk Road''

The Balkan Silk Road is the name given to the transport route and logistics corridor China has begun to establish in the Balkan region under the BRI (Bastian J.'2017) This project was started even before the official launch of the BRI (as OBOR was known then) four years ago. The "*gateway towards Europe*" as Chinese Prime Minister Li Keqiang referred to Greece during a visit in 2014, is the first stage of the Southeast European corridor of the newly emerging Balkan Silk Road. The Balkan Silk Road, which unlike the EU's Orient Corridor (see the map), bypasses Bulgaria, has a starting point At Piraeus and ends in Budapest, and passes through Greece, North Macedonia, Serbia(Belgrade) and Hungary. A project that justifies some above comments and concerns about the objectives and results of multilateral cooperation "16+1".

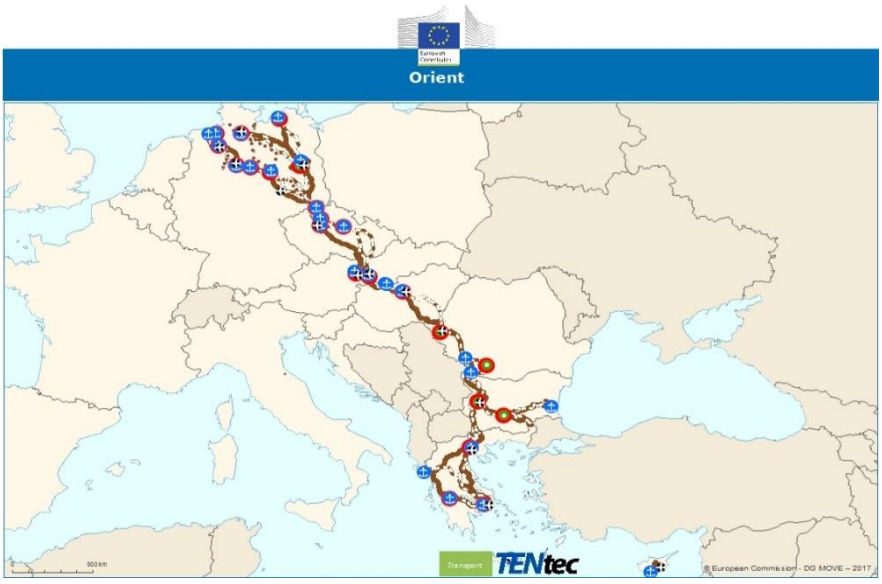

Figure 1: Orient route of EC infrastructure plans

2. Public private partnership: drivers and objectives

(Understanding Public-Private Partnerships and how the case was developed.)

The Public- Private Partnership as a strategic approach towards understanding the OBOR initiative is really not on the agenda of researchers. Theoretical observations are limited and speculations about causes and effects dominates scholarly discussions. Russian scholars evaluate PPP from the political economy perspective: financial issues, barriers to transforming blueprint projects into real assets in infrastructure. Traditional rationale, including dispersion and sharing of risks by the partners within a Public-Private Partnership project has not been examined. The conceptual framework for a case built on certain Bulgarian studies and the documents of European Commission suggests that: "*In general, the term refers to forms of cooperation between public authorities and the world of business which aim to ensure the funding, construction, renovation, management or maintenance of an infrastructure or the provision of a service."*(Green Paper 2004)[17,18] Beyond the definition above, Public-Private Partnerships contain characteristics, which can be boiled down to:

- Strategic orientation of the relationships
- Mutual benefit, which unites the partners
- Two clearly-defined groups of partners: Central and municipal authorities and private business, which enter in long –term, contractual based relations
- Contributions(resources, experience, knowledge(on behalf of both the State and private sector
- Distribution of risks among the partners
- Method of funding
- Modern management tools (Boeva, B., A.Vassileva, 2009)
- Last but not least one has to point out transparency. The start - up and the execution of Public-Private Partnership projects includes competitive business models- tenders, disclosure of information and transparency. This observation is relevant to business models in CEE, particularly to Bulgaria and China relations. One has to consider the criticism of the European Commission of the Hungarian government, which was based on a lack of transparent procedures, incl. lack of a tender procedure for the selection of Chinese partners for the high speed railroad project connecting Belgrade to Budapest.

We conjecture that crowdfunding can serve a crucial function in promoting a public-private engagement, essentially stimulating not only a constructive relationship but also a partnership with citizens, local communities and governments.

With respect to the definition of Public-Private Partnership and the business models used by the partners, the inquiry was designed by using interviews and inquiries, which include questions about the business models and various transactions of Public Private Partnerships**.** ***These include: Built-Operate and Transfer; Design Build, Operate and Transfer, Concessions, management contracts and joint ventures (contractual and equity joint ventures)***. The study of current OBOR practices in the Balkans has justified the selection of these transactions. Among good practice examples, it is noteworthy to point out the Piraeus Port concession (2009) and the spill- over effect for the local economy and neighbouring

[17] Bulgarian Law on PPP 2013sticksto a similardefinition with focus onthe transactions with high frequencyofusage.

[18] The paper does not cover statistical prescriptions(EuroStat(on how to define and reportonbehalf ofthe Governmentsof EU member-statesthe expendituresand the allocation of risk within PPP projects

countries and also for Chinese companies(Alibaba)[19,20]. Future plans for social and economic development in the countries in the region with a focus on infrastructure, energy and telecommunications in the region serve as a basis for the selection above.

Aligned with academic objectivity, certain specifics of joint projects between CEE countries and China require additional comments. Conventional wisdom teaches us that the Public-Private Partnership projects rely on the active funding on behalf of private business. As mentioned above, various CEE projects are the result of the active financial support of the Chinese government, including investments from the Silk-Road Fund. One also has to mention the impact made by the China State Construction Engineering Corp. and the China Communications Construction Co. These projects unite the efforts Chinese SOEs, a few Chinese private companies, on one hand, and SOEs and private business from other countries. The role of the private sector as a financial partner is limited. The stability of state funding is supported by present publications, and the strategic partnership between the State and private business is considered a viable and globally employed business practice. A few other arguments could be offered to justify the role and the importance of the mechanics of Public Private Partnership:

- some projects unite representatives with different ownership profiles. A Chinese – Hungarian commercial and logistic hub is among these projects,
- some researchers elevate the issue of the asymmetry between demand for financial resources for meeting the objectives of the OBOR initiative and the supply of the financial resources by the Chinese Government. (Mikheev 2015). Crowdfunding with private capital engagement is considered a reasonable financial vehicle for OBOR projects. Instead of borrowing money from external international funding institutions, crowdfunding can play a role in collecting the required funds for projects where governments are not able to fund them independently (Chang, L. J. Zhao and G. Hassna 2016). Crowdfunding encourages not only simultaneous public-private engagement but also makes the selection procedures of such projects more efficient (Lehner 2013; Miglietta et al. 2014)
- a current trend of an increasing implementation of Public-Private Projects in China. Chinese government encourages local Public-Private Partnership projects and for private capital to participate in large-scale PPP projects. (Guiding opinions 2017)

Aligned with the above conceptual framework about the essence and mechanics of Public Private Partnership project is the questionnaire, which was designed and distributed among representatives of the government administration; the business community, NGOs and the academic community.

It took courage to ask for responses on OBOR and PPP. The literature under observation lacks information regarding any clear plans about the projects, information about the few good examples in the Balkans and information about future plans for cooperation and EU's priorities to explain the limits of knowledge and information. The questionnaires were designed to find out the information and experience in Public-Private Partnerships related to OBOR and barriers. The respondents/representatives of the private sector, the government, NGOs and academia answered positively to questions about information concerning PPP and PPP models. Among the models used, BOT, DFBOT, concessions and management contracts were the most preferred.

The findings can be summarized as follows:

[19]www.ecahtimarincom, 2016

[20] Negotiationsare under way for Alibaba investments (Greek Branch) in the Plovdiv industrial zone in Bulgaria

- The Bulgarian legal framework and the objectives of the socio- economic development of Bulgaria set out frameworks for Public Private Partnership projects with foreign partners
- More than 50% of the respondents have experience in concessions and management contracts. Representatives of the private sector shared information about their experience in concessions.
- It was discovered that the respondents are not familiar with the objectives of OBOR initiatives. Information about OBOR initiatives incl. in neighbouring countries and lack of experience with Chinese partners are considered barriers for Public Private Partnership projects for OBOR initiatives by the Bulgarian business community.
- Traditional hurdles for successful development of Public-Private Parnerships projects (Boeva, B., A. Vassileva 2009) are not marked by the respondents. More than 90% them focused on lack of information about OBOR, lack of information about OBOR-related practices in the region.
- the majority of the respondents explained that the are two major areas for potential partnerships: infrastructure projects (highways and high-speed railroads) and industrial zones.

In the previous part of the paper - the theoretical observations and information about the OBOR project- it was explicitly stated that PPP projects are not on the road to implementation of the strategic objectives of OBOR initiatives, namely: the export of goods and services, export of labour, connectivity and long term presence of Chinese companies. The huge amount of financial resources that are marshalled via financial entities, such as the Silk Road Fund, does not lead to proper ways for PPP development. Various publications have focused on the financial support on behalf of Chinese State for projects in Asia, Africa and in certain CEE countries (EU member states and non EU member states). It is well known that money and efficiency are among the drivers for successful PPP projects.

3. Interpreting the findings

Although the results of the field research contribute to clarifying the objectives of the study, the final perspective is difficult to shape. The major contribution of China's BRI activities in the region of south-eastern Europe is the facilitation of closer trade links and lending activities. Seen from the perspective of Chinese investors and political authorities along the Balkan Silk Road, lending opportunities at preferential rates, infrastructure innovation or increased trading opportunities are judged as a 'win-win cooperation' (Bastian, J., 2017). The perspective for Bulgarian business is still in traditional trade and PPP -concessions and joint stock companies and the improvement of trade relations and tourism under 16+ 1 initiatives. We also found out that the Balkan phenomenon features the current and near future perspective: non-EU member states rank among the champions in OBOR initiatives in the region. At the same time EU member-states, with the notable exception of Greece, demonstrate minimal tangible results. The results of the field research have to be analyzed within the achievements and perspectives of Bulgarian-Chinese trade relations. (See Table one) The study discovered that current infrastructure projects bypass the country. Geopolitical importance and geopolitical advantages of Bulgaria in the context of the "One Belt, One Road" initiative is a fact, which is articulated by the politicians. Academic studies in Bulgaria offer various arguments for the viability of OBOR projects with regard to Bulgaria's geopolitical advantages. (Alexeev 2015; Georgiev)

Table 1: Bulgarian- Chinese trade relations

trade US $	2010	2013	2015	2016	2017	2018	2019
Bulgarian Export	250	868,1	612,4	479,7	763	900,6	914,9
Bulgarian Import	653	1020,2	1076,3	1149,4	1243,5	1559,7	1665,2
Bulgarian Chinese trade	953	1888,3	1688,7	1629,1	2006,5	2460,3	2580,1
balance	-403	-152,1	-469,3	-669,7	-480,5	-659,1	-750,3

Source: Bulgarian Ministry of Economy

The future of Public- Private Partnership projects has to be examined via the lens of the status quo of bilateral commercial relations and successful projects. The future development also has to be seen from the results of the "16+1'' initiative and a number some projects in areas such as civil construction, chemicals - Devnia, agricultural joint project in Momchilovtsi. The business community, as well associations of Bulgarian companies encourage bilateral and multilateral cooperation with Chinese partners. Positive developments within "16+ 1'' projects could also be beneficial for projects within OBOR.

The importance of the Black Sea region is another prerequisite for the development of future OBOR initiatives. Since 2016, for example, the ferry boat service "Friendship" (Bourgas –Poti) has played an important part in the infrastructure scheme Asia- Europe. Its most important role is the already mentioned trade connection between Asia and Europe, namely the famous Silk Road. Commercial traffic between Europe and Asia along the Silk Road dates from the 2nd millennium BCE. (Georgiev, G.)

And finally a "soft perspective " of the bilateral relations is interesting to evaluate-tourism in Bulgaria has presented a very interesting area for collaboration with Chinese partners- culture and tourism were communicated by the Minister of Tourism Bulgaria as an interesting area of collaboration within OBOR. (Anglelova 2017) The focus on cultural issues is rarely examined by experts and academia.

Conclusion

The study on Public -Private Partnership within OBOR initiative sends some positive signals in terms of future business development, which could justify some of the findings and concerns raised during the research. It would be useful to refer to the new Chinese concept about OBOR funding and risk management-"PPP as a new driver of the Belt and Road Initiative."[21] PPP schemes are considered useful tools for international activities. In Bulgaria the new concession law (2017) offers progressive business models for cooperation between the State and the business.

It is clear that business realities have to be viewed from a bigger picture: two giants (the EU and China) collaborate, but also compete on the global arena. In this situation, the countries in the Balkan region should not just play the passive role of a transit territory. They have a real opportunity to organize and to come up with initiatives that go beyond the logistics and transport infrastructure, and take advantage of China's plans to expand its presence in the CEE region to develop their new export markets in Asia and Europe. (Aleksiev 2016) Concerning

[21] www.cpppc.org 3d China PPP Financing Forum

Bulgaria and OBOR and "16+ 1" initiatives it is important to observe the future opportunities via plans for European and OBOR routes. (See red corridors on the map)

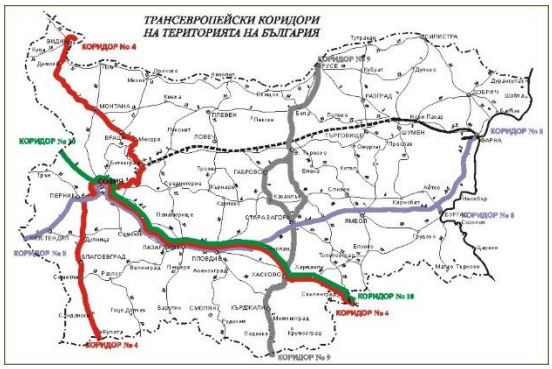

Figure 2: Map of the Balkan Silk Road

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BULGARIAN-CHINESE TRADE, ECONOMIC AND FINANCIAL RELATIONS WITHIN THE INITIATIVE "ONE BELT, ONE ROAD" - CHALLENGES AND PROSPECTS IN THE NEW POST-COVID WORLD

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Abstract:

The report consistently traces the state of Bulgarian-Chinese relations over the past ten years in the trade, economy and finance sectors.

The emphasis is on the new dynamics in our bilateral relations, which is caused by two main factors: On the one hand, with its growth as a second world economy and technological leader in many areas, China has radically strengthened its activity in the international arena, becoming a significant exporter of capital and a promising investor, not only in developing countries but also in Europe. A convincing embodiment of China's innovative vision is the BRI, launched in 2013, designed to strengthen China's connectivity with the rest of the world. On the other hand, the inclusion of Bulgaria as a "more friendly to China wing" in the construction and implementation of European Union policies, including to deepen its relations with China, elevated to the level of a "comprehensive strategic partnership".

The report provides answers to the question of how Bulgaria views the global Chinese initiative BRI through the prism of another regional cooperation platform "CEE - China" ("17 + 1"), in which in 2015 we signed a bilateral Memorandum with China for BRI cooperation. In addition, the report seeks interconnection and synergy with the European Concept of Connectivity with Asia, the TEN-T Trans-European Transport Network and the EU-China Connectivity Platform.

Special attention is paid to the legal basis, incl. intergovernmental and interdepartmental agreements, arrangements, contracts, etc. in the considered three areas – economy, finance, trade.

The trends in our bilateral trade and the obvious imbalance in bilateral trade in favor of China, which is our largest Asian trading partner among our export partners outside the EU, are discussed. Greater attention is paid to Bulgarian exports, which are limited to a small range of goods and the reasons for this fact are analyzed. Bulgaria is also looking forward to the Global Partnership Center of the 17 + 1 Initiative, based in Sofia, designed to stimulate business contacts by explaining the conditions for business activity of companies from China and CEE.

The conclusion summarizes Bulgaria's strategic shortcomings in working with China's gigantic potential, its dynamic development, its relations with the rest of the world and, last but not least, its key role in international politics in the new post COVID pandemic world.

Key words: Bulgarian-Chinese trade, economic, financial relations

JEL: F50

Introduction

China occupies a priority place in Bulgarian foreign policy in the Asia-Pacific region:

- leading role as a permanent member of the UN Security Council;
- economic successes;
- investment opportunities;

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- the huge potential of the Chinese market;
- the cooperation with China enjoys wide support in the whole political spectrum in our country; The Friendship Group with China is among the largest in the National Assembly;
- China respects our foreign policy priorities; appreciate the role of Bulgaria as a stabilizing factor in Southeast Europe, including the EU integration of the Western Balkans.

1. Factors determining the development of Bulgarian-Chinese relations at the present stage

Ascending development of the Bulgarian-Chinese relations at the present stage is determined by:

- the good traditions and the positive perception of each of the two parties in the political circles and among the public of the other side (The Ministry of Foreign Affairs, 2016).
- Pragmatic approach to expanding mutually beneficial cooperation, regardless of differences in political systems.

In recent years, bilateral relations have acquired a new dynamic, caused by the following main factors:

- China's growth as the world's second largest economy and technology leader; strengthening its activity in the international arena; Guided by the concept of the "Chinese dream" and the "great rebirth of the Chinese nation," Beijing has expanded its foreign economic ties, becoming a significant exporter of capital and a promising investor. The embodiment of China's innovative vision - the One Belt, One Road (BRI) initiative, designed to strengthen China's connectivity with the rest of the world (Filipova, R. 2019);
- Bulgaria is fully involved in the design and implementation of EU policies to deepen relations with China, raised to the level of a "comprehensive strategic partnership". (The founding document "EU-China Agenda 2020" from 2016; European concept of connectivity with Asia, considered as the European response of BRI from 2017;
- Within the EU, Bulgaria is positioned in the “more friendly to China wing” (the first Bulgarian rotating presidency of the EU Council in 2018);
- Political dialogue with China at the highest level is intensified.
- They are signed joint declarations, which enshrine the principles and characteristics of bilateral relations:
  - 2006 - "*comprehensive cooperation and partnership*";
  - 2014 - added "*friendly*";
  - 2019 (visit of President Rumen Radev to China) - "*strategic partnership*";

Intensive parliamentary exchange at various levels; inter-party contacts, regardless of differences in political systems (The Ministry of Foreign Affairs, 2016):

- Visits of Deputy Prime Ministers;
- Ministers;
- Heads of the Judiciary;
- Representatives of local authorities and public organizations, mainly during international events. The last of them in May 2018 at the G20 Forum in Argentina and in December 2019 during the Asia-Europe Summit of Foreign Ministers (ASEM) in Madrid;

2. Development of the Bulgarian-Chinese relations through the prism of the Chinese initiative "One Belt, One Road" and the platform for cooperation "17 + 1"

The Bulgarian reading of BRI seeks interconnection and synergy with „17 + 1“, the European Concept of Connectivity with Asia, the Trans-European Transport Network TEN-T and the EU-China Connectivity Platform.

A strong impetus in the development of bilateral relations between the Republic of Bulgaria and the People's Republic of China gives the creation of the "16 + 1" format and deployment of the „17 + 1“ cooperation platform.

- Within the framework of the Initiative, meetings are held every year between the Prime Ministers of the two countries;
- Host of the Meeting of Heads of Government (July 2018 after our just concluded presidency of the Council of the EU);
- Within the framework of "17 + 1" a Bilateral Memorandum with China for cooperation in BRI was signed (in 2015).

In principle, it should open wide prospects, but currently, 5 years later, it`s still unused (Filipova, R., 2019). Something more, a working group for project implementation has not been established yet;

3. What are the challenges to the development of Bulgarian-Chinese relations within the two Chinese initiatives BRI and 17 + 1 and proposing models for their improvement

Possible models for cooperation within the BRI are:

- public-private partnership;
- joint ventures;
- concessions;
- projects between private companies;
- etc.;

Making China an indispensable factor in international politics and raising it to our priorities requires developing and pursuing a well-thought-out strategic vision for developing our relations with this country. With regard to the Bulgarian strategy towards the PRC, the following circumstances must be taken into account:

- China's complex relations with our allies;
- the situation with the COVID-19 pandemic;
- the document "EU-China - a Strategic Outlook" (March 2019), where China is described as a "cooperation partner; economic competitor and systemic adversary".

For the formation of a Bulgarian vision are needed:

- responsible dialogue between the interested departments, business, academic and public circles;
- taking into account the accumulated experience, interests and views in various fields;
- synchronization of positions and formulation of unified messages, taking into account the specifics of the partner;

In the economic field:

There is a legal basis:

- Agreement for the avoidance of double taxation (Protocol of amendment of 2002);
- Intergovernmental Agreement on Economic Cooperation (2006);
- Agreement for mutual promotion and protection of investments (Additional Protocol of 2007);

Interdepartmental agreements through the Ministries of Economy, investment agencies and small and medium enterprises, chambers of commerce and business organizations, technology parks, trade departments of a number of Chinese provinces (Ministry of Economy of the Republic of Bulgaria);

- The main engine of the relations in the economic field are the forums of the Initiative "17 + 1" (ministerial meetings, exhibitions, fairs, etc.), in which the Minister of Economy Emil Karanikolov participated three times in 2018-19;
- Bulgaria is presented at the main trade fairs in China (Guangzhou, Shanghai, Ningbo, Hefei, etc.);
- During the Seventh Summit in Sofia (with Chinese Prime Minister Li Keqiang) a number of agreements were signed in the field of scientific and technical exchange, peaceful use of nuclear energy, interbank cooperation, Bulgarian tobacco exports, shipbuilding and others. The Ministry of Economy and BSMEPA organized a large-scale business forum with the participation of over 1000 business representatives from Bulgaria, China and CEE (Ministry of Economy of the Republic of Bulgaria);
- A concrete result of the meeting is the establishment last spring of the CEE-China Global Partnership Center, based in Sofia, designed to stimulate business contacts. It's a think tank.

In the field of trade

China is our largest Asian trading partner. The tendency in our bilateral trade is towards growth, which is evidenced by the statistical data.

For 2019 trade between the two countries is estimated at 2.577 billion USD. Of these, Bulgarian exports to China are USD 912 million and the imports from China - USD 1.665 billion. In the first half of 2020 (USD 1.295.6 billion (an increase of 4.3% compared to the same period in 2019), of which Bulgarian exports amounted to USD 474.0 million (+ 14.3%) and imports from China USD 821.6 million (-0.8%) (National Export Portal).

These data show an imbalance in bilateral trade in favor of China;

More worrying is the fact that Bulgarian exports are limited to a small range of goods – low-processing products such as refined copper, copper alloys and copper ores predominate with a share of over 70%. Among the small share of machine-building products are Bulgarian machines for Counterpressure casting Traditional Bulgarian products such as wines and essential oils are still poorly represented.

Despite China's enormous potential and its increased international activity in recent years, **bilateral investment cooperation remains underdeveloped**.

At the end of 2019, with investments of about 118 million euros, China is far from the leading foreign investors in Bulgaria (National Export Portal).

Chinese companies are investing in Bulgaria in the field of renewable energy (a project of 86 million euros). To build a sulfur treatment plant in Maritza Iztok (2008);

- In 2012, the Bulgarian company Litex Motors and the Chinese company Great Wall opened a car plant near Lovech;
- The Chinese companies "JAC Motors" (for assembling electric cars) are active on the Bulgarian market;

- "Yutong Bus" (supply of diesel buses and electric buses, with a desire to build an assembly plant) and the Bulgarian-Chinese consortium "Higer-Aowei" (supply of electric buses and charging stations);
- The most powerful Chinese telecommunications companies "ZTE" and "Huawei" are partnering with the Bulgarian mobile operators to build and upgrade their networks;
- Huawei is developing together with Vivacom a cloud data processing center;
- From 2017 there are two other Chinese companies in Bulgaria, producing digital cameras, smartphones, tablets and video surveillance and security systems;
- In 2018, the consortium between the Chinese "Hainan Airlines" and "Plovdiv Airport Invest" was designated as a concessionaire at Plovdiv Airport, but the Chinese partner refused to sign the deal;
- The Chinese National Nuclear Corporation (CNNC) is among the participants in the announced tender for the implementation of the Belene NPP project;

Bulgarian companies in China are extremely small in number and their activities do not raise enough money in China. For this reason it is not worth mentioning.

The Bulgarian side strives to attract serious Chinese investments in the following sectors:

- machine building;
- automotive and auto parts production;
- electronics and electrical engineering;
- information and communication technologies;
- agriculture and food industry;

In this regard, what has been done until now:

- A number of projects in infrastructure, energy, healthcare, etc. are under discussion with Chinese companies;
- Three infrastructure projects have been proposed by the Bulgarian side under the EU-China Connectivity Platform;
- Under the "17 + 1" Initiative, a Center for Promotion of Cooperation in the Field of Agriculture (at the Ministry of Agriculture and Food) was established in Bulgaria;
- Under the "17 + 1" Initiative, a pavilion for electronic trade in agricultural products was established in Plovdiv;
- Establishment of a Demonstration Park for Cooperation in Agriculture and Food (2017);
- Signing of bilateral protocols and approval of the respective export certificates (to date Bulgaria has started 31 such procedures, of which only 9 have been completed);
- Leasing by Chinese companies of land in the Plovdiv region for the production of corn and alfalfa for export to China;
- Construction of a feed production plant near Dobrich (invested over 6 million euros);

Still remain untapped the huge possibilities:

- for products containing Damascene rose;
- the Bulgarian wines;
- Bulgarian mineral and table waters.

In the transport and communications sector

- It has been repeatedly pointed out by the Bulgarian side, including at the highest level by President Rumen Radev and Prime Minister Boyko Borissov, the need to open a direct

air line between the two countries (attempts have been unsuccessful to date);
- Opportunities for rail and sea transport with a focus on multimodal transport
- Building 5G networks

Regardless of the tension around Huawei, the implementation of 5G projects could hardly be realized without the use of components from the world's leading Chinese companies.

Financial cooperation

It is developed mainly through the Bulgarian Development Bank (BDB), which has several signed agreements with Chinese banks:

- the Chinese Development Bank (CBD);
- Eximbank;
- the China Industrial and Commercial Bank (ICBC).

In July 2018, BDB hosted and rotated the first international meeting of the Interbank Association of China and the CEE countries held in Sofia (signed Capacity Building Agreement and Action Program 2018-2020 of the Interbank Association).

Conclusion

In conclusion, instead of summaries and suggestions, I will share my views and I`ll try to make some recommendations for more fruitful Bulgarian-Chinese cooperation, which will benefit both parties.

Recommendations:

- The expansion and diversification of Bulgarian exports would be crucial for Bulgaria;
- Extremely high value would be the implementation of an emblematic Chinese project in Bulgaria. For example, in infrastructure, energy or other high visibility areas, which would pave the way for more Chinese investment;
- Construction in Bulgaria of a Bulgarian-Chinese industrial zone;
- It would be very useful to open a branch of a Chinese bank in order to support Chinese investments;
- Deployment of bilateral cooperation in the field of health and medicine, especially in a situation of pandemic COVID-19 (interest in traditional Chinese medicine; direct contacts between hospitals; exchange of good practices and sharing of scientific discoveries);
- Bulgaria is an "approved tourist destination". It`s a Priority in Bulgarian policy towards China. An example is opening of Bulgarian tourist centers in Shanghai and Beijing, but the number of Chinese tourists in Bulgaria is a negligible share of over 100 million Chinese tourists traveling abroad. In 2019, the so-called "exported visa centers" will be launched in 15 Chinese cities - the maximum number allowed under the EU-China Agreement. The possibility for Chinese citizens to travel to Bulgaria with valid Schengen visas and visas for Croatia, Romania and Cyprus was regulated. But in order to further develop as a promising area, tourism cooperation needs adequate and accompanied by information in Chinese unified advertising of Bulgaria in modern Chinese platforms as a cultural, historical, entertainment, culinary and educational destination;
- Development of relations at the local level.

- A number of Bulgarian and Chinese cities and provinces have agreements for cooperation and twinning;
- Under the 17 + 1 Initiative, Bulgaria hosted meetings of regional governors in Plovdiv (2017) and local authorities in Sofia (2018);

- Practice shows that local cooperation is extremely welcome and strongly stimulates people-to-people contacts;
- To involve the non-governmental sector much more effectively in the formation of the Bulgarian strategy towards China (BCABR, BCCI, etc.).

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THE EUROPEAN SILK ROAD

Georgi Chankov*

Abstract:

From the beginning of the 21st century the trade between China and the EU is growing at such a pace that logistical problems are emerging - congestion on the Suez Canal and insufficient capacity in the EU's main ports. Alternative solutions need to be sought. Defining "One Belt - One Road" project as a strategic project can allow the EU to manage its internal crises and successfully fit into the process of transition to a new international system.

But the EU does not have its own response to China's strategic project, 9 years after it was announced. The attitude towards him is passive and full of suspicion.

However, the new opportunities that arise with the relocation of the economic center of the world to the East are provoking reactions at academic level. In 2018 the Vienna Institute for International Economic Research is developing a concept for a more active EU policy and the implementation of the 11,000 km European Silk Road. The project follows the geo-economic logic revealed in the Theory of trade routes. It requires centralized planning and financing of trans-European transport networks (TENNs) and an increase in their density in transport-lagging Eastern Europe.

The financing seems to be within the power of the EU, the question is in the priorities: the new European Commission prefers investments in green energy, the so-called "Green Deal". The European Silk Road does not seem likely to receive political support, despite its logic. The EU currently does not have the intellectual and political resources to respond to the Chinese initiative.

Key words: world economy, trade routes, Belt and Road Initiative, European Silk Road

JEL: F50

Introduction

The shift of the world economy center to Southeast Asia and the changes in world trade, which has been observed for two decades, requires a restructuring of the global transport infrastructure. At the heart of this redevelopment is the Belt and Road Initiative (BRI), of which Fr. Fukuyama pays special attention and evaluates it as the only strategic plan for the next 25 years and a possible option for the structure of "World Economy 4.0".

The concept of the project was first announced by Chinese President Xi Jinping during a visit to Central Asia and Indonesia in autumn 2013. The project aims to connect the two centers of the Triad - Europe (EU) and Asia (China) by land and water. The initiative must create an area of economic growth by building "hard" infrastructure - rail, road and sea links, and "soft" infrastructure - trade agreements and a judicial system to regulate the agreements. It is part of China's task of partially shifting to an economy based more on domestic consumption and avoiding the "middle-income trap" that most developing countries have fallen into over the past 60 years. China's economic interests require the provision of raw materials and energy and the search for markets, mainly for industrial goods. The project does not deviate from the current growth strategy - encouraging investment with loans from state-owned banks, but now outside

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the country. Preliminary intentions include 60 countries, with two-thirds of the world's population. Its potential goes beyond the regional dimension.

1. Methodology of research

The European perspective on the initiative is shaped by works that express a Eurocentric view of the world. Among the most important of these is the theory of the "world system"[22], according to which the concept of "system" is close to the concept of "civilization" of Arnold Toynbee. However, it not only examines the development of social systems within a civilization, but also examines the connections between individual "civilizations". This approach was developed in the 70s of the 20th century by Fernand Braudel, Immanuel Wallerstein, Samir Amin, Giovanni Arigi and others. Andrei Fursov is currently working in this field.

The present study mainly uses the approach of Fernand Braudel, who studies the system of the "world economy", connecting all societies. (Braudel, F., 1961) It has its mobile centers or "supercities" (Venice in the fourteenth century, later Antwerp, Amsterdam, London, New York in the twentieth century, Shanghai in the 21st), secondary but well developed societies - "semi-periphery", and underdeveloped "periphery". At the same time, trade routes and communications connect different regions and cultures in one macroeconomic space.

Franz P. Lang's Theory of trade routes describes the mechanism by which the center, the semi-periphery and the periphery are outlined and changed. (Lang, Franz P., 1980) It best justifies the internal 'center-semi-periphery-periphery' division, both within the EU and across the European continent. According to this theory, two main trade "axes": "Novgorod (later St. Petersburg) - Santiago de Compostela" (East - West) and "London - Rome" (North - South) connect the different parts of the continent in the last 1000 years and set historical the international division of labor. In addition to these major trade "axes", there are other routes: the Mediterranean route, which connects southern Europe, northern Africa and the Middle East, the Baltic sea route (around which the Hanseatic League emerges), and the continuation of the Silk Road through Southeast to Central Europe. Along and especially at the intersection of these axes are the largest accumulations of population and capital, which causes the emergence of economically strong areas, large and rich cities and allows the existence of relatively small state formations at the expense of peripheral areas.

2. Reactions to the Chinese initiative

At present, the scale of the BRI and the likelihood of it setting the structure for World Economy 4.0 meet the EU's need for a new impetus for economic development. Guidelines for the development of China's trade relations with the EU are set out in a document of the Chinese Academy of Social Sciences (CASS) in 2003. Since the beginning of the 21st century, trade between China and the EU is growing at such a pace that logistical problems arise - congestion of the Suez Canal and insufficient capacity of the main ports in the EU, alternative solutions have to be sought and so the CASS proposals become a political solution 10 years later.

In this case, there is an important additional consideration - the cost of shipping remains lower, but it is important for China, given the accumulating tensions with the United States, to divert a significant part of its trade off the sea routes controlled by the U.S. navy - the only one with a global deployment.

Defining BRI as a strategic direction can allow the EU to manage its internal crises and successfully fit into the process of transition to a new international system, addressing specific

[22] Here the terms "world system" and "world economy" are given as used by Braudel and Wallerstein.

tasks such as regional security, economic growth and diversification of energy supplies. This could expand access to other emerging markets, including India, Pakistan and Kazakhstan in the framework of a common strategy with China, moving to the political level. In addition, the EU's involvement in the northern section of the BRI, passing through Russia, could become a means of settling strained relations with that country after 2007.

In fact, the EU does not formulate its own response to China's strategic project, 9 years after its announcement. The attitude towards it is passive and full of suspicions, as can be seen from the uncoordinated development of cooperation within the 17 + 1 group at the Union level.

In Brussels, China's activity in CEE did not provoke a serious reaction, although China's negotiated approach with each country hindered the building of a unified (and therefore stronger) position on trade issues, especially in the negotiations on the bilateral investment agreement, which is being prepared since 2012. The reason for this is that the Union is too busy overcoming its internal crises, and the distribution mechanisms have reached the ceiling of their ability to support the more backward member states. (Britain's exit from the union further lowers this ceiling over the next budget period.)

In such circumstances, any Chinese investment is beneficial, apart from that, large trading partners would reap additional benefits from reducing the logistics costs of Chinese supplies. Chinese investments in sensitive energy and steel industries for instance proceed with the consent of the supranational governing bodies. At the same time, China already participates with a symbolic share in the EBRD, while many EU countries are included in the Asian Infrastructure Investment Bank.

In addition to Chinese activity, there is an opportunity (Koribko, A., 2015) for a Russian-Chinese strategic partnership in the 17 + 1 group. In this partnership Russia's task would be to push energy networks through the southern group of countries (gas pipelines) and that of China to build a high-speed railway corridor ("Balkan Silk Road") through Turkey (Bosphorus), Greece, Macedonia, Serbia and Hungary. This section can be connected to the sea "Silk Road" through the Greek port of Piraeus. If Russia succeeds in connecting the Balkan countries to the energy grid and China promotes economic activity in the region, it can effectively spiral out of control of geopolitical adversaries. The coincidence of interests is present, as through BRI China will be able to offer an economic alternative, but for this purpose the established ties of Russia with the political and economic elites, as well as the sympathies among the population can be of help. The possibility of a Russian-Chinese strategic partnership along this line still seems hypothetical, but there is already a preventive reaction: the United States are making great efforts to block all Russian energy projects in the last few years, including the countries of the Western Balkans in NATO and by reviving attempts to help those countries entering the EU.

3. The European Silk Road

At the end of March 2019, President Xi Jinping toured a number of European Union countries, as a result of which trade agreements were signed for € 40 billion in France and € 2.52 billion in Italy. The new agreements with France allow China to gain access not only to French high-tech goods, but also to French Mediterranean ports, which could accept large container vessels after reconstruction. The same has been agreed for the Italian ports of Trieste, Genoa and Palermo, the use of which will also reduce the cost of delivering Chinese goods to EU markets. The port of Trieste, where there is a special customs regime, has direct rail links with other European countries. For this purpose, in addition to investing in port infrastructure, one is also planned in the Italian state railways. Italy became a key country in the BRI project and, with 29 documents signed on satellite communications, internet trade,

agriculture, banking, gas and steel supplies, gained clear economic prospects for the next few decades.

The European Commission's reaction to these events is not surprising - it proposes a document with binding rules for all member states regarding Chinese investment. The EC even insists on a veto in agreements between China and individual EU member states. From the EC's point of view, China is an "economic competitor" and even a "systemic rival pursuing an alternative model of governance." (Kosirev, D., 2019)

However, the new opportunities that arise from the relocation of the world's economic center to the East, and in particular from the Chinese BRI project, are provoking other reactions, at least at the academic level. In 2018, the Vienna Institute for International Economic Research is developing a concept for a more active EU policy and the implementation of the European Silk Road, a total of 11,000 km long. (Holzner, M., Heimberger, Ph., Kochnev, 2018) The project should include several routes: Lisbon - Uralsk (on the Russian border with Kazakhstan), Lyon - Moscow, Milan - Constanta and Milan - Volgograd - Baku.

Figure 1: Northern and southern routes of the European Silk Road
Source: Mario Holzner, Philipp Heimberger, Artem Kochnev, 2018

The project should include high-speed railways, motorways, warehouses, ports and high-speed Internet. According to a conservative estimate, the European Silk Road should lead to an economic growth of 3.5% on average and an increase in employment of around 2 million jobs along its route over an investment period of 10 years. Under favorable circumstances, the total number of new jobs should reach 7 million.

The project, among other things, is a reaction to the losses from the politically justified interruption of the East-West road and the losses in trade with Russia. With its help, EU exports to Russia alone would increase by 11% to € 12.5 billion. As the development is in Austria's interests, it emphasizes the benefits for Austrian industry: its exports to Russia would increase by more than 14%. This corresponds to about 330 million euros. The construction projects would create 34,000 jobs in Austria out of a total of 121,000 new jobs. (Holzner, M., Heimberger, Ph., Kochnev, 2018)

Overall, however, the project relies on the development of the more backward eastern EU member states by more actively involving them in East-West trade by counter-linking with the Chinese strategic project. For Bulgaria, the project does not promise much benefit: the Austrian interest, according to the authors of the project, requires the most direct access to the east coast of the Black Sea through the port of Constanta. Nevertheless, with its overall logic, this project can become a good basis for options that protect a wider range of interests. Bulgaria could benefit from the priority development of Corridor № 7 "Rhine - Main - Danube" with the revitalization of the Danube ports, but the main interest of our country is

in the development of Corridor № 10 "Budapest - Istanbul". The task is difficult, as it confronts Bulgarian interests not only with those of Romania, but also of Greece, which seeks to dictate the economic development of the Balkans and is interested in placing the logistic center in its northern part. (Pudin, K., 2009)

The strength of the project is in following the geo-economic logic revealed in the theories analyzed so far. According to the authors, it should accelerate the lack of progress (lack of centralized planning and funding) in the trans-European transport networks (TENNs) and increase their density in the transport-lagging Eastern Europe. EU funding for the project is estimated at € 1 trillion, without relying on Chinese funding:

Table 5 / Cost estimate of the European Silk Road

	(Rounded to 100)	Distance km	Motorway EUR mill.	Railway EUR mill.
Northern route	Lyon-Moscow	3,400	98,500	200,400
	Extension Lisbon	1,900	49,800	101,000
	Extension Uralsk	1,400	26,100	53,700
	Total northern route	6,700	174,300	355,200
Southern route	Milan-Constanta	2,500	69,900	141,800
	Extension Volgograd	900	17,100	35,300
	Extension Baku	900	14,600	30,100
	Total southern route	4,300	101,600	207,200

North & south	Total distance km	Motorway EUR mill.	Railway EUR mill.	Road & railway EUR mill.
	11,000	275,900	562,400	838,200

North & south	5 seaports EUR mill.	10 river ports EUR mill.	6 airports EUR mill.	12 logistics centres EUR mill.
	35,000	35,000	60,000	25,400

TOTAL EUR mill.	TOTAL in % of the GDP of concerned countries	TOTAL in % of the EU's GDP
993,700	7.6	6.7

Figure 2: Breakdown of expected costs for the European Silk Road
Source: Mario Holzner, Philipp Heimberger, Artem Kochnev, 2018

The amount seems to be within the power of the EU, but the question is in the priorities: upon taking office in December 2019, the new President of the EC Ursula von der Leyen stated the same amount for the so-called "European Green Treaty" - investments in green energy and electric cars. One third of the amount must come from the general budget and the rest from national budgets and from the European Investment Bank. In this situation, it does not seem likely that the European Silk Road or a similar project will soon receive political support, despite their logic.

Conclusion

The low probability that the latter will happen in the foreseeable future, regardless of diplomatic activity shows that the EU does not currently have the intellectual and political resources to respond to the Chinese initiative - neither within its own borders nor in the border area.

However, geo-economics has its laws. The Chinese factor is becoming increasingly important for the course of European integration and is about to gain a weight comparable to that of the United States. In the United States, however, the economic development model has reached its limits, while China's potential is far from exhausted. Through its BRI strategic project, China can definitely provide an alternative and rather give a new impetus to European economic integration, especially in lagging Eastern Europe. Making China a new economic center of the world may make it easier for the EU to find an optimal structure for the transition to a new WCO, but it requires new strategic thinking.

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