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EU-MERCOSUR AGREEMENT: DEVELOPMENTS AND PROSPECTS FOR BULGARIAN-BRAZILIAN ECONOMIC AND TRADE RELATIONS

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Abstract

***As** the signature of the Free Trade Agreement between the European Union and Southern Common Market is a fact, the paper aims at disclosing the impacts and the prospects of it on the Bulgarian-Brazilian economic and trade relations. After presenting the EU-Mercosur trade context briefly, it discusses the dynamics of the bilateral trade flows both between the European Union and Mercosur and, Bulgaria and Brazil and, emphasises on the novelty of the features and opportunities. The prospects for future economic developments are stated.*

Keywords*: economic relations, trade, Mercosur, European Union*

JEL*: F10, F14, F50*

Introduction

The European Union (EU) and Southern Common Market Free Trade Agreement (EU-Mercosur FTA) is a deal announced on June 28th of 2019, during the 2019 G20 Osaka summit (European Commission, 2019a; 2019b). After twenty years of negotiations, it will represent the largest trade deal ever signed by both EU and Mercosur; it will constitute one of the largest free trade areas in the world, aggregating GDP of about 25% of the world economy (USD 20 trillion) and market composed by 780 million of people (Brazilian Ministry of Foreign Affairs, 2019).

Bulgaria, as a member of the EU, is a party to all trade and economic agreements and negotiations. Brazil is one of the main trade partners of Bulgaria; traditionally, it is the biggest from Latin America; Peru is the other since 2010 (NSI, 2019). The trade between Bulgaria and Brazil amounts EUR 77,4 million in 2018, which represents 61% of change compared to 2017. Bulgaria and Brazil have intensified the political dialogue since 2011 to boost economic and trade relations.

In this sense, the paper aims at disclosing impacts and prospects on the Bulgarian-Brazilian economic and trade relations that will open after the entry into force of the EU-Mercosur FTA. The structure of the paper is organised in three main directions: (i) to make a brief overview of the EU-Mercosur trade context and agreement, (ii) to discuss dynamics of the bilateral trade flows both between the European Union and Mercosur and, Bulgaria and Brazil and, (iii) to emphasise on novelty of the features and opportunities for Bulgarian and Brazilian economies. The prospects for future eco-

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nomic developments are stated. The methodology of the research combines statistical and official data and information from European Statistical Office (Eurostat), National Statistical Institutes (NSI), UN Comtrade, OEC, European Commission documents, Ministries of Economy and Ministries of Foreign Affairs of Bulgaria and Brazil, and other sources.

1. The EU-Mercosur Free Trade Context and Agreement

Over the years, the EU has established several initiatives in Latin America in order to ensure a better approach with the countries of this region, such as bilateral cooperation agreements with Brazil and other Mercosur members (e.g. Argentina, Paraguay, Uruguay, others); Interregional Framework Cooperation Agreement, signed with Mercosur in 1995; Strategic Partnership with Latin America and the Caribbean; and Strategic Partnership with Brazil, sealed in 2007 (Tomazini, 2013). However, it is worth to point out that the current EU-Mercosur FTA corresponds to the trade pillar of a wider bi-regional Association Agreement (AA), which encompasses two more pillars, still under negotiations: political and other forms of cooperation, respectively. Thereby, the European bloc aims to consolidate a strategic political and economic partnership with the Mercosur countries (Brazilian Ministry of Foreign Affairs, 2019; European Commission, 2019a).

According to Tomazini (2013), an AA establishes a closer and more institutionalized relation between the parties. Hence, beyond trade measures, it must provide cooperation in other sectors, as well as usually it contains protocols that specify an aid package to be received from the EU. In the EU-Mercosur agreement case, it is expected to enhance the political dialogue and to increase the cooperation in the fields of migration, digital economy, research and education, human rights, including the rights of indigenous people, corporate and social responsibility, environmental protection, ocean governance, fight against terrorism, money laundering and cybercrime, among other areas (European Commission, 2019c).

Today, trade relations between the EU and Mercosur are already relevant to the economy of their members. In 2018, the EU goods trade with Mercosur reached EUR 87,607 million. It was imported from Mercosur about 2.2% of all EU partners (EUR 42,580 million) and exported to Mercosur about 2.3% of all EU partners (EUR 45,027 million). It resulted in a positive balance of EUR 2,446 million for the EU (European Commission, 2019e), according to Table 1.

Table 1. EU goods trade flows and balances with Mercosur, in EUR million

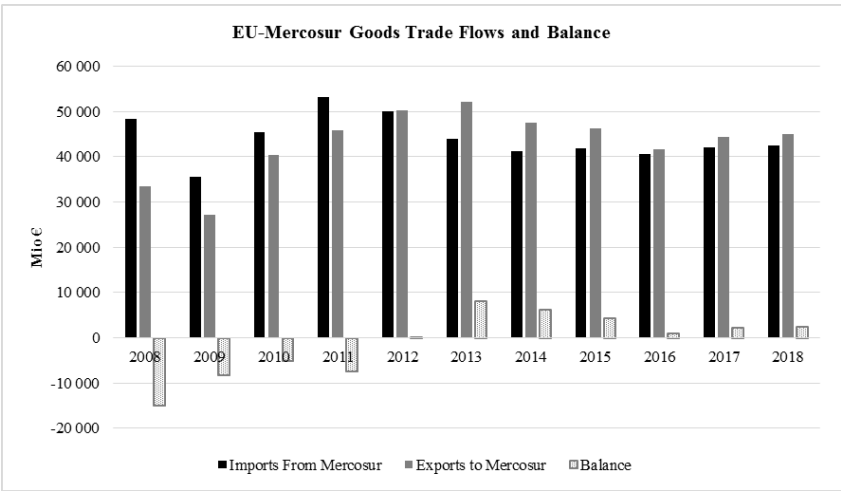
Period	Imports from Mercosur	Exports to Mercosur	Balance
2008	48.329	33.444	-14.886,00
2009	35.562	27.277	-8.285,00
2010	45.434	40.327	-5.107,00
2011	53.171	45.873	-7.297,00
2012	50.166	50.365	200,00

Period	Imports from Mercosur	Exports to Mercosur	Balance
2013	43.944	52.144	8.200,00
2014	41.237	47.453	6.215,00
2015	41.889	46.243	4.354,00
2016	40.643	41.653	1.010,00
2017	42.021	44.337	2.315,00
2018	42.580	45.027	2.446,00

Source: European Commission (2019e)

While the trade balance has been negative until 2011, the trend changed, and the European bloc has maintained a positive trade balance in its relationship with Mercosur since 2012 (Figure 1).

When it comes to services, the trade between the blocs totals EUR 35,722 million in 2017, but in this case, the EU exports more than twice as much as imports. The value of the services supplied by EU companies to clients in Mercosur amounts to EUR 23,865 million. At the same time, it is EUR 11,867 million of services delivered to EU clients by companies from Mercosur countries (European Commission, 2019d). However, there is a very slight tendency that the imports from Mercosur grow (Table 2).



Source: Based on European Commission (2019e).

Figure 1. Evolution of EU bilateral commodity trade flows and balance with Mercosur, in EUR million

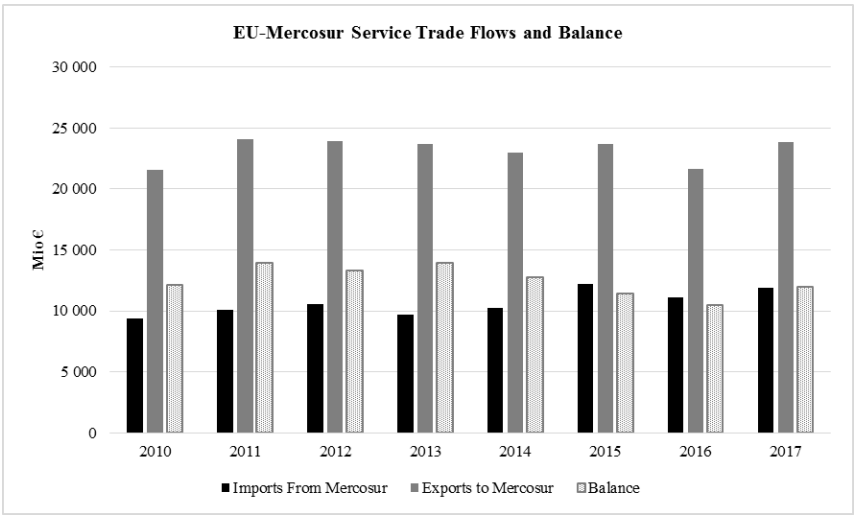
Table 2. EU bilateral services trade flows and balance with Mercosur, in EUR million

Period	Imports From Mercosur	Exports to Mercosur	Balance	Total Trade
2010	9,409	21,568	12,159	30,977
2011	10,084	24,069	13,985	34,153
2012	10,564	23,934	13,370	34,498
2013	9,713	23,704	13,991	33,417
2014	10,205	23,006	12,801	33,210
2015	12,209	23,649	11,441	35,858
2016	11,111	21,609	10,499	32,720
2017	11,857	23,865	12,008	35,722

Source: Eurostat (2019a)

The European bloc has maintained a positive trade balance in its relationship with Mercosur during the period 2010-2017 (Figure 2).

Nowadays, trade with Mercosur also collaborates significantly with economic dynamism and job creation in the EU. In this sense, over 60,000 EU companies are exporting now to Mercosur and, only considering the exports to Brazil alone, they employ more than 855,000 people. Thus, the EU became the biggest foreign investor in Mercosur, with an accumulated stock of investment that has gone up from EUR 130 billion in 2000 to EUR 381 billion in 2017. In parallel, Mercosur companies are increasingly investing in the EU, employing more than 30,000 people in the European State Members and accumulating a stock of EUR 52 billion in 2017; the Latin American bloc became the major investor in the EU (European Commission, 2019a; 2019f).



Source: Eurostat (2019a)

Figure 2. Evolution of EU services trade flows and balances with Mercosur, in EUR million

Although this partnership is quite relevant for both blocs, Mercosur is still considered a closed market with high tariff on most products (Table 3) and non-tariff barriers to trading, like: (i) technical regulations and standards, which differ from international standards; (ii) unnecessarily complicated procedures to prove that EU products meet Mercosur's technical requirements or standards for food safety or animal and plant health; (iii) limited access for EU business and an unequal playing field in key service industries, such as financial services, postal and courier services, telecommunications and transport; (iv) preference given to domestic firms and goods over foreign firms and goods in government contracts; (v) lack of easy access (European Commission, 2019a; 2019d).

Table 3. Duties applied to the main EU products exported to Mercosur

Product	Duty
Biscuits	Taxed at 16% to 18%
Canned Peaches	Taxed at 55%
Car Parts	Taxed at 14% to 18%
Cars	Taxed at 35%
Chemicals	Taxed at up to 18%
Chocolate	Taxed at 20%
Clothing	Taxed at up to 35%
Leather Shoes	Taxed at up to 35%
Machinery	Taxed at 14% to 20%
Pharmaceuticals	Taxed at up to 14%
Soft Drinks	Taxed at 20% to 35%
Textiles	Taxed at up to 35%
Whiskey and Other Spirits	Taxed at 20% to 35%
Wine	Taxed at 27%

Source: European Commission (2019d)

With the EU-Mercosur FTA application, the customs duties will be removed progressively on 91% of goods that EU firms export to Mercosur, including food and drink. Likewise, the import duties will also be eliminated on 92% of Mercosur goods imported by the EU (European Commission, 2019d). These and other measures provided in the trade agreement are summarised in Table 4.

Table 4. Main measures that will be applied through the EU-Mercosur FTA

Measure	Description
Cutting tariffs	The agreement will eliminate high customs duties in key EU and Mercosur export sectors, like the industrial. For some of these tariffs, the phasing out will take place over several years, allowing Mercosur companies to adapt.

Measure	Description
Easier customs and compliance procedures	The two sides will simplify their customs procedures and work together more closely on technical regulations and standards so that any differences that may exist do not stop the export activities from EU and Mercosur.
Selling services and setting up a business presence	The agreement will address many significant barriers that companies involved in trading between blocs could face. It will also help other companies seeking to provide services or set up a service or manufacturing business in a country of Mercosur.
Getting access to public contracts	The agreement will allow firms from EU and Mercosur to bid for public contracts on equal terms.
Supporting small and medium-sized companies	Small and medium-sized companies often cannot afford to enter new export markets due to red tape at customs, costly testing and certification requirements. With the agreement, they will now benefit from a new online platform providing easy access to information on market requirements and customs rebates. It will be included specific benefits in order to foster their integration in the global value chain, participation in government procurement, training programs, among others.
Supporting and respecting interests of farmers	The agreement will make it easier for farmers and food producers to make the most of new opportunities in the countries of each bloc, by: Removing high tariffs for main export products for each bloc; Sensitive agricultural products such as honey, sugar, poultry, beef, pork, and ethanol will have limits for imports from Mercosur. Therefore, they will have access through quote application; Preventing imitation of EU traditional foodstuffs (recognized as Geographical Indications); Making food safety procedures clearer, more predictable and less cumbersome for EU exporters.
Upholding the EU's food safety standards	Any product arriving in Europe must comply with the EU's food safety standards. The agreement also reaffirms the ‚precautionary principle', the right of both sides to adopt measures to protect human, animal and plant health, including in situations where scientific information is not conclusive. At the same time, the provisions of the agreement will help to tackle common challenges such as antimicrobial resistance, promote animal welfare standards and reinforce the flow of information to help to keep unsafe products out of the market.

Measure	Description
Contributing to sustainable production	The agreement must promote sustainable development through: The EU and Mercosur commit to effectively implement the Paris Climate Agreement and agree to cooperate on the climate aspects of trade between the parties. It includes tackling deforestation; The EU and Mercosur agree that they will not lower the labour of environmental standards in order to promote trade and attract investment. To the contrary, the dedicated chapter includes specific commitments related to environment protection, workers' rights and promotion of responsible business conduct. The 'precautionary principle' is upheld in the agreement and ensures that the EU and the Mercosur countries can continue to regulate, including on environment or labour matters, even if this affects trade, also where scientific information is not conclusive.
Intellectual property rights	The agreement consolidates the international standards of property right protection, which will guide the modernization of domestic law in countries of both blocs.
Involving civil society	The agreement gives civil society an important role in its implementation, including on the provisions on trade and sustainable development. The EU and Mercosur will keep environmental interest groups, business organisations, employers' and workers' organisations, and others informed of how the agreement is implemented. These civil society groups will be able to communicate their views and provide input to discussions on how the trade pillar of the agreement is being implemented in a forum set up for the purpose and at national level.
Enforcing the agreement and solving disputes	The agreement puts in place a mechanism that is fair, efficient and effective to solve disputes that may arise regarding the application of its provisions and the interpretation. Among other things, it relies on transparency, includes independent panellists and due process, and involving open hearings, the publication of decisions, and the opportunity for interested parties to submit views in writing. The mechanism will ensure that the EU and Mercosur fully implement their obligations under the agreement so that businesses, workers and consumers can enjoy its benefits.

Source: Brazilian Ministry of Foreign Affairs (2019); European Commission (2019d; 2019g)

However, the EU-Mercosur FTA has no immediate effect and must be ratified by the parties so that it can take effect. After the political announcement, it is made a technical and legal review on the text. Then, it will proceed to translation in all EU and Mercosur

official languages (in EU's case, the text must be available in 23 languages while in Mercosur case in 4 languages). After finalization, it must be signed and ratified by the European Council, the European Parliament, Mercosur and national parliaments, a process that may take many years (Brazilian Ministry of Foreign Affairs, 2019).

An agreement, like the EU-Mercosur FTA, is viewed as something uniquely novel, due to the scale of the expansion of their regulatory scope, as well as a reaction of the multilateral track against the protectionist pressure caused by several factors, such as the inconclusiveness of Doha negotiations, increased complexity of post-2008 trade negotiations, changes in the United States trade policy after President Trump's election and deepening divisions between developed and developing countries. Besides that, this kind of deal could be a step toward broader and more uniform commercial institutions (Hadjinikolov & Zhelev, 2018; Sondergaard, 2019).

The expected intensification in the trade between EU and Mercosur may play an important role in the economies involved due to its capacity to boost the economic growth, lower transaction costs, transfer technology and knowledge, and press competitiveness, force business to lower their mark-ups and to better exploit returns on scale (Stanojević & Veličković, 2019). Further, trade may have a positive effect on the environment, too, in consequence of higher environmental standards that can be spread through lobbying and public opinion. Some environmental gains tend to occur with rising incomes; others are likely to be associated with international trade and investment in consequence of a more efficient regulation (Sterner & Coria, 2012).

However, some studies point out that the potential of using all benefits from trade liberalisation is conditioned by the initial level of per capita income, foreign direct investments rate, gross fixed capital formation and level of complexity of the productive structure (Gala, 2017; Stanojević & Veličković, 2019). Also, it can consider that the enhancement of economic performance rests on the improvement of productive domestic institutions, rather than only on increasing openness to international trade *per-se*, which in the absence of the first condition even might lead to a negative effect on welfare (Rodrik et al., 2004; Sondergaard, 2019).

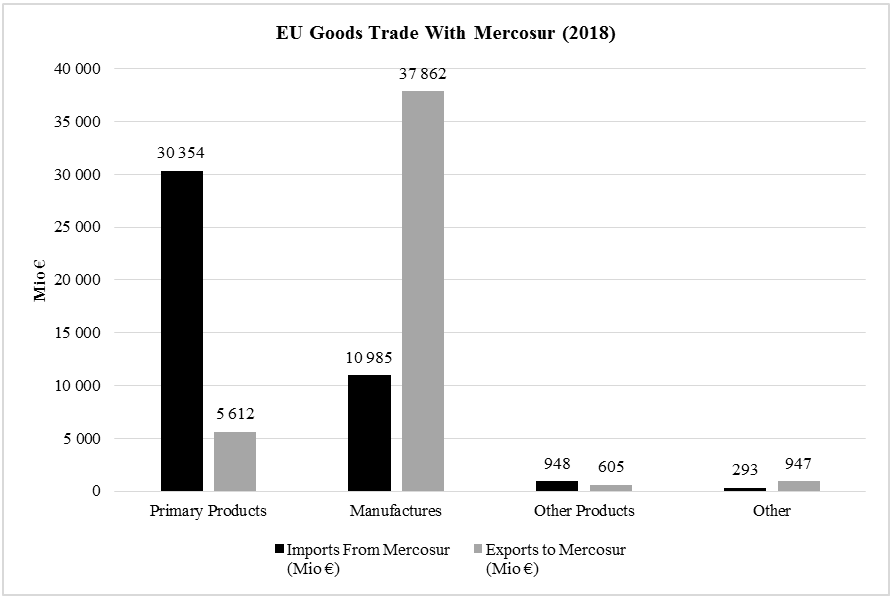
Effects on Brazilian and Bulgarian Economies

The Growth Lab of the Harvard University's Center of International Development states that countries whose exports are more complex than expected for their income level, grow faster. Therefore, growth can be driven by the process of diversifying know-how to produce a broader and increasingly more complex set of goods and services (Harvard, 2019a). In this sense, the effects caused by the EU-Mercosur FTA on EU and Mercosur economies could be analysed from the economic complexity of exportation perspective, which in turn will influence its growth path.

In the goods trade with the EU, Mercosur has its advantages concentrated on primary products rather than manufactures (Cano et al., 2017). The soy complex, corn, and oil, in addition to livestock and oils/waxes of animal origin, form the basis of these countries' trade with the EU. In terms of manufactured goods, only Argentina has some prominence in chemicals and transportation equipment (Albuquerque & Lohbauer, 2013). It is verified through the statistics of the EU-Mercosur trade in 2018 (Figure 3),

when it was exported from Mercosur to EU EUR 30,354 million of products, slightly more than 71% of all exports, while manufactures were EUR 10,985 million or about 26% of total exports (European Commission, 2019e).

Brazil follows the same trend. It is in the top ten trading partners of the EU. However, its exportations in last decade still focused only in roughly a dozen products, mostly primary and semi-manufactured products (Table 5 and Figure 4), such as that range from the soy complex, iron and copper ore, petroleum, coffee, corn, tobacco, wood pulp and cellulose, among others (Albuquerque & Lohbauer, 2013; Brazilian Ministry of Economy, 2019). Among the 27 EU State Members, just a few countries concentrate all the Brazilian exports: Germany, France, United Kingdom, Italy and Spain appear as the major economic partners, whereas the Netherlands is the biggest recipient of Brazilian exports that use Rotterdam as a port of importing (Albuquerque & Lohbauer, 2013).



Source: Based on the European Commission (2019e)

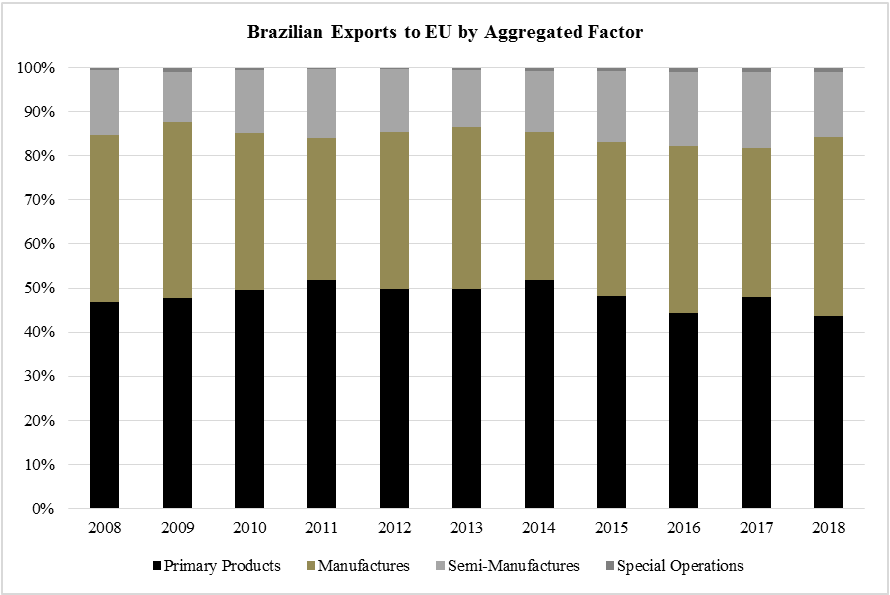
Figure 3. EU trade with Mercosur relative to goods (Standard International Trade Classification), 2018, in EUR million

Table 5. Brazilian exports to EU by aggregated factor, 2008-2018 (USD FOB billion)

Product	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Primary Products	21.81	16.28	21.45	27.50	24.43	23.74	21.79	16.39	14.80	16.71	18.42
Manufactures	17.69	13.72	15.42	17.18	17.51	17.58	14.11	11.81	12.62	11.82	17.02
Semi-Manufactures	6.86	3.86	6.17	8.37	7.01	6.16	5.85	5.47	5.63	6.03	6.27

Product	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Special Operations	0.22	0.32	0.27	0.11	0.13	0.29	0.28	0.28	0.31	0.34	0.40
Total	46.58	34.18	43.31	53.16	49.08	47.77	42.03	33.95	33.36	34.90	42.11

Source: Based on the Brazilian Ministry of Economy (2019)



Source: Based on the Ministry of Economy (2019)

Figure 4. Share of Brazilian exports to the EU by aggregated factor, 2008-2018

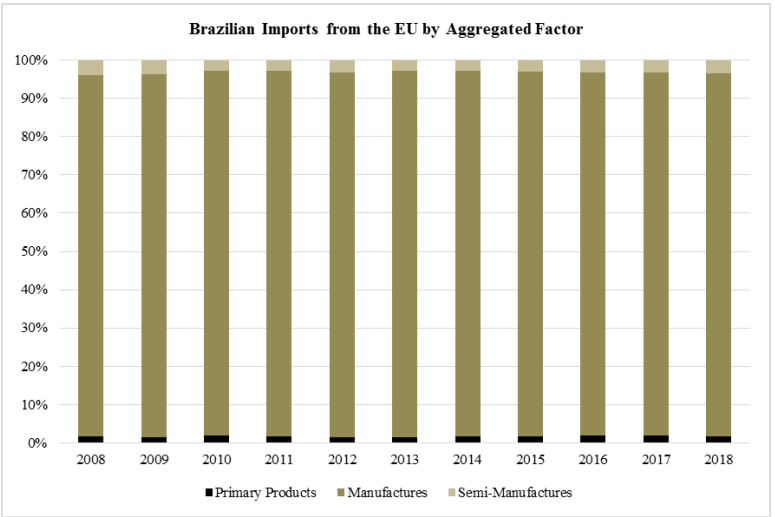
The opposite occurs with Brazilian imports from the EU. The trade with this bloc over the recent years is significantly concentrated to manufactures products, such as human and animal medicine, heterocyclic compounds, their salts and sulfonamides, parts and pieces for cars and tractors, naphtha, pesticides, measuring equipment, gasoline, bearing and gears, among others (Table 6 and Figure 5). The main exporters to Brazil from the EU are Germany, Italy, France, Spain and the United Kingdom (Brazilian Ministry of Economy, 2019).

Table 6. Brazilian imports from the EU by aggregated factor, 2008-2018 (USD FOB billion)

Product	2008	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Primary Products	0.64	0.40	0.73	0.77	0.74	0.72	0.75	0.62	0.59	0.62	0.59
Manufactures	34.14	27.76	37.28	44.42	45.37	48.55	44.67	34.90	29.47	30.41	32.94
Semi-Manufactures	1.41	1.07	1.13	1.26	1.60	1.46	1.29	1.13	1.02	1.04	1.22

Product	2008	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Total	36.19	29.23	39.14	46.45	47.71	50.73	46.71	36.65	31.08	32.07	34.75

Source: Based on the Brazilian Ministry of Economy (2019)



Source: Based on the Brazilian Ministry of Economy (2019)

Figure 5. Share of Brazilian imports from the EU by aggregated factor, 2008-2018

Thus, due that its exports are concentrated in low complexity products, such as agriculture and minerals, along with its imports profile concentrated in manufactures, it becomes evident that Brazil (as well as other Mercosur countries) has a less complex economy than its partners from the EU. It happens because its economy has not yet started the traditional process of structural transformation when the economic activity is broadly reallocated from low to high productivity sectors, based on manufactures and sophisticated services (Gala, 2017; Harvard, 2019a).

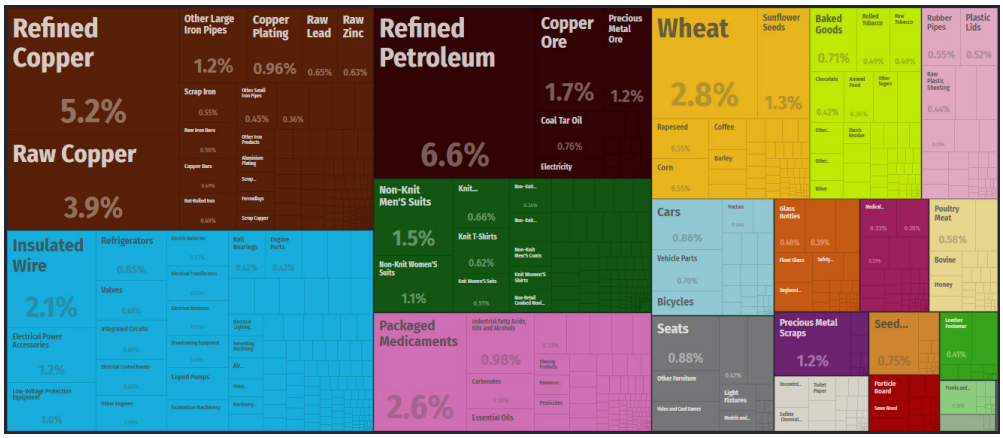
In theory, the EU-Mercosur FTA could help Brazil to rely less on exports of commodities (raw materials or primary agricultural products) and to diversify its economy by producing higher-value goods and services because Mercosur citizens would be able to provide their services in the EU (European Commission, 2019a). However, even the EU-Mercosur FTA not being into force, around 70% of agriculture already enter the EU without tariffs barriers and the remaining 30%, considered sensitive and protected by the EU, corresponds to all of the products for which Brazil has comparative advantages (Albuquerque & Lohbauer, 2013).

So, when this agreement comes into force, the tendency is that it will, even more, stimulate the production of commodities in Brazil and the rest of Mercosur, as well as of manufactures in the EU, since Europeans already has more complex productive networks, with a high content of productive knowledge (Gala, 2017). In this scenario,

the Brazilian manufacture production would reduce even more their share in the national economy, triggering a Dutch disease process.

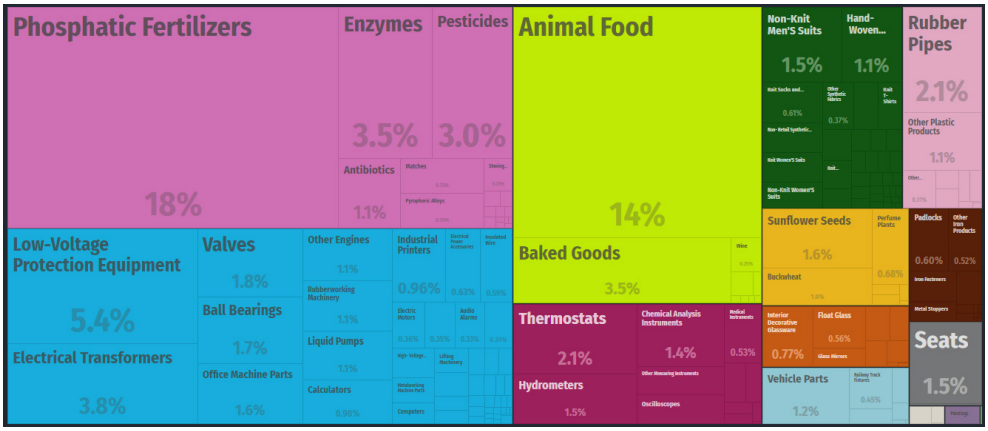
Concerning Bulgaria, which is an upper-middle-income country as Brazil is, its economy has become more complex, diversifying its exports gradually. In 2017, it exported EUR 27.9 billion in high and moderate complexity products (Figure 6), such as refined petroleum, refined copper, raw copper, wheat, packaged medicaments, machinery and, electrical machinery and equipment. In 2018, the total export value raised slightly to EUR 28.2 billion. Besides that, the global market share in machinery manufacturing in Bulgaria has risen over the previous decade (Harvard, 2019b; OEC, 2019). The share of electrical machinery and equipment and parts thereof is the biggest, 10.8% of all exports in 2018. The main destinations of the Bulgarian exports are the European countries: Germany, Turkey, Italy, Romania, among others, which represents 68.63% of all exports (Harvard, 2019b).

It is worth to mention that, today, the Mercosur's share in Bulgarian exports is quite tiny, about 0.26%, and the main destination is Brazil, with USD FOB 45.9 million (Harvard, 2019b). The main products exported were fertilizers, animal food, machinery and, electrical machinery and equipment (Figure 7). The machinery has a share of 10.5% and the electrical machinery and equipment – 4.9%, of the Bulgarian exports to Brazil in 2018. The latter represents only 7.8% of all the Brazilian imports of electrical machinery and equipment.



Source: OEC (2019)

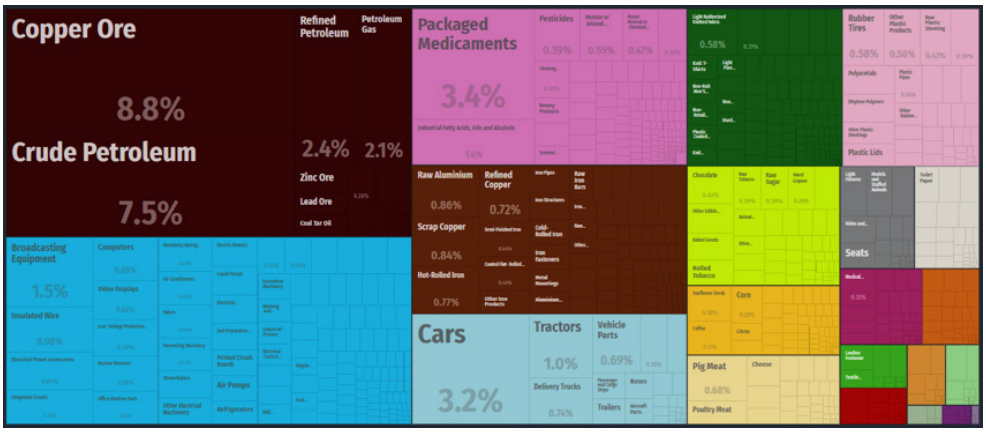
Figure 6. Main products exported by Bulgaria, 2017



Source: OEC (2019)

Figure 7. Main products exported from Bulgaria to Brazil, 2017

As for the Bulgarian imports, they amounted EUR 30.3 billion in 2017 and raised to EUR 32.1 billion in 2018. The main products imported are mineral products (13.7%), represented by copper ore and petroleum, but almost as much also are machinery (10.2%) and, electrical machinery and equipment (9.7%) (Figure 8). The top import origins are Germany, Russia, Romania, Turkey and Italy, which represents 75.52% of all imports, while Mercosur countries collaborate with 0.68% (Harvard, 2019b; OEC, 2019). Bulgaria's import from Brazil figured out EUR 44.3 billion in 2018, mainly in ores, slag and ash (33.6%), coffee, tea, mate and spices (18.2%) and, machinery (17.4%). The machinery import is 2.46 bigger in value comparing to the Bulgarian export to the Brazilian market in the last year. The Bulgarian machinery export represents 7.8% of the total Brazilian machinery import in 2018 (in value).



Source: OEC (2019)

Figure 8. Main products imported by Bulgaria, 2017

In comparison to Brazil, Bulgaria's economic complexity is lagging with nine positions (ranked 46 most complex country in the world), not showing substantial advances in the process of structural transformation to entering major and more productive sectors. However, the country exports almost twice more products with revealed comparative advantage (348 Bulgarian products comparing to 209 Brazilian products exported). Besides that, its economic growth is driven by diversification into new products that are incrementally more complex (Harvard, 2019b). In this sense, Bulgaria has added 46 new products since 2002, and these products contributed with USD 244 in income per capita in 2017, against Brazil's 13 new products, which contributed with US$ 22 in income per capita (Table 7).

Table 7. New export products, 2002-2017

Country	New Products	USD per capita
Bulgaria	46	USD 244
Brazil	13	USD 22

Source: Harvard (2019a; 2019b)

Though, Bulgarian profile about exportations and importations shows that its current trade is significantly focused on Europe, mainly the EU countries. In this sense, the EU-Mercosur FTA could help Bulgaria to expand its trade network towards a region with the potential to become its importer of machinery and electric machinery and equipment, and exporter of ores and petroleum, coffee and other commodities following the path of complexity improvement. To succeed in trade liberalization, Bulgaria should make investments in order to improve the quality of its institutions (Stanojević & Veličković, 2019). In this sense, Hadjitchoneva & Georgiev (2017) points out that corruption and judiciary are the most problematic factors of the Bulgarian business environment, despite that Bulgaria has reached the lowest corporate tax in the EU, with low operation costs for doing business in the region, and showing one of the highest business investment rate (28.8%) among the European countries, which would be an advantage for Mercosur countries.

Conclusions

The Association Agreement between European Union and Mercosur, whose the Free Trade Agreement is one of its pillars, can be understood as a new chapter in the history of both regions and with potential to reach an unprecedented scale in terms of people and markets when it becomes effective (Brazilian Ministry of Foreign Affairs, 2019). This deal is also considered even more relevant due to the current context, with higher protectionist pressure and preference for bilateral agreements instead of multilateral agreements (Hadjinikolov & Zhelev, 2018; Sondergaard, 2019).

Although the EU-Mercosur FTA aims to establish a closer and more institutionalised relation between Europeans and South Americans, providing different types of cooperation and opportunities (Tomazini, 2013), it is not wise to generalise that all countries will benefit from the trade liberalisation in the same way. In this sense, it is necessary to analyse some competitiveness and economic issues of each country, like

the initial level of per capita income, foreign direct investments rate, gross fixed capital formation and level of complexity of the productive structure (Gala, 2017; Stanojević & Veličković, 2019). However, the EU-Mercosur FTA represents a favourable factor in expanding the bilateral trade and economic relations between Bulgaria and Brazil, as it liberalizes the trade and eliminates multiple tariffs and non-tariffs barriers.

Concerning Brazil, as well as other Mercosur countries, primary and semi-manufactured products mainly compose the exportations to the EU. At the same time, the importations from the EU are fundamentally focused on manufactured products and sophisticated services. It means that the Brazilian economy is less complex due to having not yet started its process of structural transformation so that its comparative advantages are concentrated in sectors with lower productivity (Harvard, 2019a). Further, Brazil does not still present strong institutions and other elements, which constitute sources of competitiveness, like efficient tax legislation and infrastructure. Thus, it arises a concern about Brazil getting a Dutch disease process, and its manufacture production share reduces even more after the EU-Mercosur FTA comes into force. Still, many opportunities for the Brazilian producers and services suppliers arise to internationalize and diversify markets and partners.

As to Bulgaria, the country faces similar structural economic problems; its process of structural transformation needs to be intensified so to integrate high productive sectors, mainly those related to machinery and electronic machinery manufacturing, and services providing. As Bulgaria trades primarily with its European partners, this situation could be changed with the agreement enhancing the trade structure and partners diversification. Hence, Bulgaria could expand its trade network towards a region with the potential to become its importer of machinery and other added-value goods and services, and exporter of ores and petroleum products, and other raw materials, following the path of complexity improvement. Besides the risks that the geographical distance brings, the Bulgarian businesses could benefit largely from the opportunities to make economies of scale once opened to huge new markets.

Both studied countries have to improve the quality of their institutions for getting more advantages from trade liberalisation and new economic cooperation opportunities and to realize the potential that represents the Association Agreement between European Union and Mercosur, and especially its Free Trade Agreement.

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SPECIAL FEATURES OF HUMAN RESOURCE MANAGEMENT IN BUSINESS ORGANIZATIONS DURING COVID-19 PANDEMIC

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Abstract

This *article outlines several emerging features of human resource management, revealed by the identified human resource management (HRM) initiatives and practices, implemented in the contemporary leading business organizations under the conditions of Covid-19. The performed literature review presents the main current challenges, confronting companies and several emerging important characteristics of the HRM strategy. The system perspective is applied to identify some deeper changes that have been undertaken within certain critical HRM components for successfully surviving and thriving business organizations as recruitment and selection, training and development, compensation and benefits, work-life balance and teamwork. Based on the accumulated qualitative data, special features of HRM that emerge during the Covid-19 crisis are grounded.*

Keywords*: human resource management, human capital, employee engagement*

JEL*: M12, J24*

Introduction

The main aspects of the crisis caused by the ongoing Covid-19 pandemic - health, financial, economic and social - posed new challenges to human resource management (HRM) in modern business organizations, pursuing not only their own survival but also successful development under the new conditions in their business environments. In such a tense, dangerous, uncertain, unpredictable and volatile environment, the importance of one component from the traditional human resource systems, implemented in large organizations, has sharply increased, i.e. the "Establishment and maintenance of safe and healthy working conditions" that is otherwise relatively well regulated in comparatively developed and rapidly developing countries around the world. It should be obligatory noted that the functioning of this component in the HRM system remains almost unnoticed under the normal conditions of the organizational existence. Exploring the nature of the virus proceeds slower than the medical professional group, society and business leaders desire, which situation has repeatedly contributed to the implementation, repeal and amendment of various anti-crisis measures. The latter hindered at all times the maintenance of a long-term orientation in the planning of the stakeholders'activities and the interactions with (or among) them.

For this reason, at first glance, some anti-crisis measures taken may seem inadequate, contradictory or untimely, but in fact their essence is based on the knowledge, results

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and experience, accumulating up to specific moments during this key marker event. In this way the array of the aforementioned measures gradually formed their basic essence, accumulated new nuances in their content, stabilized, dropped or refined a number of their specific attributes. Thus, concrete measures emerged, oriented to organizing of the production processes, office layouts, ventilation, sanitation and human density of company premises to ensure the necessary level of security, guaranteeing the (business) continuity in the functioning of the organizational formations. Monitoring and measuring the results of the anti-crisis measures taken to protect the health of working people has turned some of them into deliberate requirements of state institutions in the realization of the socio-economic relations in many countries around the world, while other measures – still not so popular, have acquired the status of good practices, voluntarily implemented by succeeding companies from different regions of the world (Milota, 2020; Balgeman et al., 2020; Centers for Disease Control and Prevention 2020; Dua et al., 2020; OSHA 2020; Furtado et al., 2020).

However, the purpose of this publication is to review HRM management initiatives and practices in leading companies beyond the semantic field of the „establishment and maintenance of safe and healthy working conditions", undertaken in response to events that occurred or in rare cases, embedding proactive HRM activities. Based on this qualitative data, special features of HRM that emerge during the Covid-19 crisis are grounded.

1. A general overview of the HRM field in the pandemic

The Covid-19 pandemic accelerated to a great extent the slowly creeping digitalization of the workforce in the contemporary organizations, not only in the high-tech industry. The positive perspective to the current crisis allows considering it as a useful opportunity to revise implemented HRM strategies, processes, approaches and organizational structures, with some orientation to the lean approach in company management and especially its HRM function (Financial Times, 2020; Wickramasinghe, Wickramasinghe, 2020). In such turbulent environment a number of HRM related challenges may be defined, as follows (Financial Times, 2020; Wickramasinghe, Wickramasinghe, 2020; Lund et al., 2020; Ellingrud et al. 2020):

- Achieving a shared understanding of multiple nuances, embedded in the meaning of flexibility – (a) in perceiving working schedules as flexible or fragmented ones by managers, employees, clients, government institutions, etc., (b) in used places of work, and (c) in realized employee interactions with managers.
- Reflecting on and wisely changing the dominating employee frame of reference, emphasizing the embedded importance of "why" the employee does a certain activity in the firm over "what" the contributor performs.
- Timely understanding and even stimulating human thoughts and feelings, regarding new ways of working by fast adoption of certain technologies.
- Rebalancing the interests of diverse company constituencies by assuming some HR initiatives and responsibilities outside the boundaries of the organizational setting, but always and to great extent for its immediate or indirect benefit.

- Satisfying the urgent need of employees for vacant Covid-19 related jobs not only in the healthcare industry, but also in diverse sectors of economy where the crisis embedded great market opportunities (for example IT jobs, delivery services, etc.).
- Undertaking timely employee dismissal in sectors heavily affected by the crisis and/or applying for participation in government programs to retain staff in affected companies under these adverse conditions.
- Identifying and balancing the organization's responses to specific needs of diverse employee groups (women, LGBTQ+ employees, people of color, working parents), because of the positive relationship between higher diversity leadership and realized profitability in business organizations.

The complexity of the aforementioned challenges requires from the HR managers and specialists to collaborate intensively with other managers in the company and even some stakeholders outside it as potential candidates, government officials, competitors, local community, etc.

2. Forming characteristics of the Covid-19 HRM strategy

The current pandemic finally brought to perceiving the HRM in the companies as a business function by the respective constituencies in and outside the organizational setting, because the implemented forced changes in operating business models or their entire shifts required the timely contribution of the HRs by ensuring the availability of needed talent capabilities, skills and knowledge (Schmidt, 2020). Thus, the HR's support to organizational survival (i.e. business continuity) and possible successful development in the future became apparent. When organizational development is emphasized, at least several important HRM strategic initiatives in congruence with Covid-19 conditions may be outlined, as follows:

- The establishment and maintenance of external partnerships in the HRM field (Schmidt, 2020): (a) especially with companies that had to lay off or furlough large numbers of their personnel, thus generating higher added value to the organizational performance through timely hiring of needed human resources. The aforementioned partnerships proved their usefulness even to companies whose business collapsed during Covid-19 crisis who could efficiently and effectively realize their outplacement policies through them, preserving the human face of their management in turbulent times. (b) by HR managers who start to practice open source collaboration, intentionally sharing pandemic response plans, templates, research, crisis management related thoughts and ideas within their professional communities.
- Supporting multiple switching among numerous nuances of work models as co-located, distributed, hybrid or fully remote one (Schmidt, 2020; Paychex, 2020).
- Boosting the agility of the HRM function by adopting a useful means to measure the achievement of formulated goals in the HRM sphere as objectives and key results (OKRs) and make fast decisions regarding potential pivots and related budgeting in concern with the entire talent ecosystem. Executing of continuous reassessment and re-imagination of followed HR strategy becomes the

new norm due to changes in performed work in business organizations and necessary workforce. Thus, the tracking of data insights into different categories of personnel (alternative, part-time, former employees, etc.), even potential candidates or employees, their knowledge, skills and capabilities, employment preferences are useful to HR managers and specialists who try to maintain a healthy fit between changing organizational needs and available workforce (table 1) (Schmidt, 2020; Deloitte. Insights 2020, pp29-34).

- Persistent satisfying of the organizational need to comprehend the essence and usefulness of previously neglected HRM spheres as diversity, inclusion, belonging and equity and implement deliberate activities, regarding them that should cover the whole employee journey in the company. Such HRM approach brings to increases of creativity and productivity levels among personnel members (Schmidt, 2020).
- Directing the efforts of the HRM department to the fuller utilization of the available human potential in the company and deliberate stimulation of its increases in the near future in order to prepare the business organization for existence in an unpredictable and disrupted world by not only capturing employee potential for growth (learning) and adaptability, but also developing the leadership ability to cultivate potential among followers (subordinates). The HRM department should ensure the timely transformation of professed organizational values to managerial actions by gaining the support of the senior executives and supervisors (table 1) (Deloitte. Insights, 2020, pp29-34).

Table 1. Tracking the realization of undertaken HRM initiatives in response to Covid-19 crisis

OKRs of the HRM activities	**Descriptions…**
1. Key milestones to higher employee potential utilization…	1.1. Tracing and analyzing job evolution in the company and outside it (object of change, frequency, depth). 1.2. Appraising the current personnel preparedness to perform the work of the future: (a) Identifying current capability, experience, and skill gaps. (b) Composing plans to close the aforementioned gaps. 1.3. Assessing employee ability to change continuously and their agility (speed, effectiveness). 1.4. Judging the preparedness of company leaders for the future (trends, challenges, scenarios, success attributes).
2. Key milestones to take advantage of the whole talent ecosystem, supplying capability to the company…	2.1. Quantifying employees who provide direct or indirect services to the company. 2.2. Assessing the situation on the Internal talent market of the company. 2.3. Appraising the situation on the external talent market for the company. 2.4. Identifying employee retention drivers, i.e. personalizing the risk of leaving the company and elucidating the related reasons.

3. Key milestones to transform organizational values to daily actions…	3.1. Reassessing the balance in the relationships with company constituencies, regarding dominating workforce social contract. 3.2. Appraising company's diversity policy by criteria as presence of diverse employee communities and their strength of influence. 3.3. Analyzing employer branding initiatives (organizational culture characteristics, workforce image, dominating leadership styles). 3.4. Assessing organizational risk, resulting from peculiar (extreme) cultural manifestations in the company (i.e. the cultural forms).
Source: see Deloitte. Insights, 2020, pp 31-34	

3. Recruiting and selection

Timely management reactions to increased market demand of certain products and services forced many companies to reinvent their hiring processes in congruence with the new pandemic limitations by speeding them up, heavily digitalizing them and enhancing the communications among constituencies (candidates, HR specialists, prospective managers) (Albert-Deitch, 2020). The current hiring process as a whole (recruitment and selection of candidates) may be described by several characteristics, as follows: (a) decreased duration of the interval, formed by the moment of candidate attraction (the scheduling of initial interview) to the moment of closing the deal (i.e. making a job offer) to three or maximum four hours, (b) wide use of videoconferencing platforms and (group) phone communications to interview candidates, keeping the rule of social distance, (c) providing individual virtual follow-ups for selected candidates, (d) arranging final interviews (30 minutes) for the further selected candidates with a potential manager, and (e) synchronized HR's schedule with the working agenda of the potential managers for respective candidates.

The pursuing of a strong fit between the individual purpose of the candidates and the organization's purpose, semantically transposed to the levels of the respective jobs, also represents a good HRM recruitment and selection practice under the pandemic conditions. This statement is based on empirical results, revealing that: (a) employees with individual purpose in congruence with their jobs are inclined to demonstrate higher levels of personal productivity in comparison to their colleagues, (b) there is a positive correlation between the "purposefulness of employees and … company's EBITDA margin", and (c) a strong sense of purpose, observed in employees' behaviors, is associated with successful demonstrations of human abilities as resilience and recovery from crises (Dhingra et al., 2020).

4. Training and development

Garcia, Maples and Park (2020) recommend that the companies, striving to prosper under the conditions of Covid-19 crisis and after it, should creatively and timely

reconsider their capability-building approach, because the new requirements for work safety and health conditions make it almost impossible for the HR departments to rely on in-person, hands-on learning through case-studies and simulations of real business situations. The elaboration and upgrading of employee capabilities and the increase of personnel resilience impose the implementation of a new training and development approach, appropriate to the current conditions that integrates desired employee learning of knowledge and skills, their daily intensive on-the-job applications and sustainable behavioral changes across diverse personnel categories. The aforementioned approach may be characterized as digitally delivered, mitigating both physical and psychological distance among employees and innovative in implementing simple and robust reinforcements to sustain desired employee behavioral changes, driving a change-oriented culture. Digital training content should stimulate the active participation and gaining of experience by the trainees through virtual workshops, although the learning priorities are set by HR managers. Employee intrepidity to adopt the new skills in their work life, change their work-related behaviors and realize improvements of their on-the-job performance should be deliberately augmented. So, virtual training is expected to become an intersection point among acquiring and maintaining of technological fluency, developing a pragmatic attitude to problem solving, delivering and learning appropriate content, smooth facilitation of conducted remote meetings, ensuring direct electronic access to higher rank managers, whenever possible mixing it with safe and useful in-person experiences. The link "cherished behaviors – specific on-the job results for each employee – immediate consequences for each employee – corrective actions" should be adapted to the requirements of remote-working contexts (Garcia, Maples and Park, 2020).

Another point of view discloses that a novel perception of workforce potential is needed, defined as "giving workers more freedom to choose how they can best help tackle critical business problems as organizations and ecosystems evolve" in order to sustainably increase to a greater extent the overall company performance (Deloitte. Insights, 2020, pp. 20). The establishment of virtual "opportunity or talent marketplaces" for current company employees and potential candidates is identified as an effective and efficient way of achieving the aforementioned organizational goal, based on the employee voluntary initiatives. They are defined as "platforms that make visible and communicate to workers defined opportunities" (i.e. roles that may undergo frequent reinventions) "for professional development, training, mentorship, project participation, networking, promotion, diversity, and inclusion" (Schrage, et al., 2020). These platforms serve as a means of aligning closely the officially declared employee interests, passions, and capabilities with the current and potential company demands. The employee interests, passions, and capabilities may be characterized as pliable to reinvention in congruence with emerging needs, oriented to identifying critical gaps, (re-)(ab-)solving unexpected and potential issues, supporting employees to reimagine key parameters of work performed, compatible with the use of AI-enabled technologies, tracked by managers in real time, frequently analyzed for whole teams (Deloitte. Insights, 2020, pp.22-23).

5. Compensation and benefits

The current crisis brought to the full and open communicated inclusion of a new item in traditional lists of employee wellness and benefits, supplied by companies, i.e. mental health support. Frequently, HR managers' giving a lead in sharing own mental health struggles may be highly valued by troubled employees (Schmidt, 2020) who will probably perceive an added touch of humanity in the exercised role modelling efforts by the subject of management.

Furthermore, a great deal of working parents desperately need the support of the HR managers and specialists, especially during these crisis times when mingling of professional and parenting roles may decrease employee concentration, productivity and emotional stability. Some useful HRM solutions in this sphere may be recommended (Dowling, 2020; Rodsky, Smith, Johnson, 2020):

- Improving the communication for the existing perquisites for working parents in the companies and even design specific packages for them (reimbursement of kindergarten expenses or subscription to on-demand sitter service).
- Establishing support groups of working parents in the company.
- Scheduling specific time periods for working parents when they are allowed to close their electronic business communication channels.

In the Covid-19 pandemic some new benefits come into being as HR managers try to adapt their compensation and benefits policies to the new conditions as altered employee preferences, imposed governmental restrictions and urgent company needs of cost control and reductions (Paychex, 2020). For example these are catered team lunches or outdoor picnics, half-days once per week, employee appreciation activities, virtual happy hours, tuition assistance, paid time off, gift cards, organized outdoor small group activities and free coffee and/or tea (arranged to be monthly delivered to remote workers).

6. Changing attitudes to "work-life" balance

The adherence to strong divide between employee's life in the company and his personal one has already become impossible, because the Covid-19 pandemic situation disclosed and mixed to some extent these two spheres of human life by imposing remote work (entirely from home or hybrid) and digital communication among working people (Schmidt, 2020; Deloitte. Insights, 2020). This made life much more difficult for the working parents and other categories of diverse employees whose pending challenges and struggles have become intrusively visible to colleagues, managers and other stakeholders, and have not received adequate attention by many HR and other managers yet (Dowling, 2020; Rodsky, Smith, Johnson, 2020; Ellingrud et al., 2020, p.7). Such organizational climate brings forth the short term effects and long term consequences in realizations of all the nuances of office politics. Frequently the employer requirements to distant employees to stay longer hours reachable and available break enacted labor legislation, defining the work day duration and the obligatory schedules of work breaks that may contribute to employee psychological issues (burnout, depression) and physical health issues (fatigue, muscular or eye illnesses). It is

an indisputable fact that in majority of the countries all over the world the labor laws do not regulate the current stage of development in the societal-economic relations – especially the remote work, highly increasing under the conditions of Covid-19 crisis.

It may be also concluded that a dominating number of organizational settings have not yet created inside written regulations, arranging the rights and obligations of their virtual employees or those, contributing in a hybrid way. The trade unions seem very slow posing this issue in the ongoing process of national or even international industrial relations (European Union, International Labor Organization), taking into account the Covid-19 related challenges that a great deal of employers have to surmount. For example the European parliament discussed the employee "right to disconnect" from the Internet and e-mail in December 2020 without facing any negative repercussions, approving a directive to be interpreted in the national legislative systems of the single member states, but several weeks later the deputies recommended the adoption of a regulation to be directly abided by all member states (Hansens, 2020; Associated Press 2020; Lynch, 2020; European Parliament, 2021).

That is why some leading companies brought forth the idea of integrating work and personal lives of the employees through design and implementation of certain well-being practices simultaneously at three levels within the organizational setting (organizational, team, individual) and the environments in which work is designed (cultural, relational, operational, physical and virtual) (Deloitte. Insights, 2020, p. 17). For example, design of work environments, facilitating employees' physical, mental, and emotional health needs or modeling behaviors, oriented to well-being (e.g. taking micro-breaks, using video connection only for key meetings, etc.).

The HRM department's interventions in the sphere of employee "work-life balance" during the Covid-19 pandemic should be an indispensable part of the company's overall diversity, equity, and inclusion (DEI) strategy that is supported by specific HRM practices as performing frequent employee pulse surveys, proposing to employees virtual/ flexible work options (including extended family leave), implementing manager trainings for inclusive virtual/ hybrid leadership, providing regular leadership communication and engagement (Ellingrud et al., 2020).

7. The new aspects of Teamwork

Teamwork has become the "golden standard" of boosting organizational performance in contemporary succeeding and innovative companies, since bright, creative and engaged team members intensively collaborate to find better solutions to pending organizational issues, including external adaptation, internal integration and increasing the speed of learning and work (Schein, Schein, 2017; Deloitte. Insights, 2020, pp.24-26). Many teams in companies today perform in more than one location, even contributing across the borders, virtually or at least with some remote members, shifted at certain periods or for the completion of certain tasks, always bearing in mind the need to comply with safety requirements. Thus, the increase and maintenance of employee engagement has become a priority for the HR managers and specialists, especially in the emerging new daily work related critical incidents - for example video meetings. The accumulating experience reveals that turning on the video connection

among participants in a virtual meeting, providing them with clear orders, advises and strong follow up materials may improve teamwork efficiency and effectiveness. That is why one of the aims of contemporary HRM is to guide the employees and their managers in the creative reinventions of occupied job roles in two perspectives – pursued increase in added value creation for the company, and performed daily on-the-job activities (Financial Times, 2020).

Another important aspect of potential advantageous management impact on teamwork is identified eight months after the start of the pandemic (Morieux, Tollman, 2020), i.e. relational productivity that has to be taught to organizational leaders, struggling to solve pending issues, originating from the crisis. The relational productivity is defined as "the differential performance created by effective behavioral interactions in an organization", dominating under the conditions of "specific organizational context" (Morieux, Tollman, 2020, p.5). Leadership, engagement and cooperation are determined as the three key drivers of relational productivity whose deliberate organization-wide implementation through concrete recommended steps and creative elaborations by managers may increase the overall company performance (table 2). Of course the influence of certain new and specific for the respective firm and its personnel members' roles, structures and processes, regarding these endeavors, cannot be ignored by HR managers and supervisors, too.

The HR managers and specialists now possess a new instrument to accelerate company growth or at least to minimize the negative influence of the business environment in comparison to the competitors. This is the next phase of the elaboration in teamwork, emerging after the proclaimed pursuit of diversity among team's members, i.e. "superteams". The last is defined as "combinations of people and technology leveraging their complementary capabilities to pursue outcomes at a speed and scale not otherwise possible" (Volini et al., 2020) that requires managers' adopting a new point of view to technology as an additional team member and collaborator, and creatively transforming the performed work. Empirical evidence reveals that cherished organizational culture, building workforce capability and technology not only exercise great impact on the forming of superteams, but also matter to work transformation. The success in this HRM sub-area also depends on the establishment of the right ownership on superteam creation in business organizations that is better to be shared among managers and specialists in the HR, IT and other specific company spheres who have to struggle for integrating humans with technology in order to realize the synergy of "complementary capabilities to re-architect work" in more human and personalized ways (Deloitte. Insights, 2020, p 24-28).

Table 2. The components of relational productivity

DRIVERS	WHAT LEADERS PERFORM…
1. Leadership: How Managers Create Value	1.1. Interacting with more personnel members across the company and doing it more frequently. 1.2. Virtually communicating more directly and clearly, concentrating on the essence of work.
2. Engagement: Going Beyond the Minimum	2.1. Using (organizational) "purpose to move people beyond grief to action." 2.2. Applying two ways of fostering employee engagement: (a) a "macro" way by cultivating a collective sense of purpose; and (b) a "micro" way by cultivating a sense of compulsion in their employees through time-limited and iterative sprints.
3. Cooperation: Putting Individual Autonomy in the Service of the Collective	3.1. Establishing the right context for cooperation in the virtual or hybrid working environment. 3.2. The new context should be highly appreciated by the employees.

Source: Morieux & Tollman, 2020

Conclusion

Based on the performed literature review, disclosing an array of implemented successful HRM initiatives and practices in business organizations in response to the occurring changes in the business environment due to Covid-19 pandemic, at least several key components of the HRM system beyond the core one of "Establishment and maintenance of safe and healthy working conditions" may be identified – HRM strategic management, recruitment and selection, training and development, compensation and benefits, work-life balance and teamwork. Analyzing them and their content, i.e. bundles of HRM initiatives and practices within each one of them, permits formulating several emerging features of HRM that constitute its specificity at the initial stages of the current crisis, as follows:

- Accelerated and deep penetration of technologies in the aforementioned key components of the HRM system in the business organization.
- Implementation of agile approach to undertaken anti-crisis measures in the field of HRM, supporting organizational resilience and flexibility.
- Wider adoption of talent management perspective within the functioning HRM systems in the surviving and thriving business organizations (for example HRs engage with initiatives outside the company and/or are oriented to the wellbeing of more constituencies and society as a whole).
- Reformulating the HRM strategy of the company in congruence with the adopted new overall company development strategy in response to the crisis.

- Stimulating a more humane approach in the "employer (manager) – employee relationships" because of the crisis.

It should be taken into account that the aforementioned bundle of special features of HRM originate from just the first year of coping with the Covid-19 crisis and may deeply change in the near future. But the business efforts in recovering from it will continue at least several years (Foroni, Marcellino, Stevanovic, 2020; UNCTAD, 2020; Charumilind et al., 2021) that opens space for pursuit of other critical initiatives and practices in the HRM sphere with high potential to create greater value added to company's survival and thriving. Thus, the world of business may soon get into situation in which the current ways of getting things done in companies and realizing of inter organizational collaborations may be vastly transformed, contributing to inevitable restructuring of the content of different components in the functioning HRM systems, creating new components and ceasing the existence of redundant ones.

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THE DEVELOPMENT OF FISCAL COUNCILS IN THE EUROPEAN UNION WITHIN THE CONTEXT OF BUDGET STABILITY

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Summary

The objective of this paper has been to discuss the idea of better coordination between the national fiscal councils within the EU. An effective focal point would be feasible solution for limiting the impact of negative spillovers between the countries as some governments might have intentionally or unintentionally taken on policies which effect would be experienced negatively by other partnering countries.

The institutional solution of this challenge was established back in September 2015, almost immediately after adopting the legislation for the establishment of independent fiscal councils in the member states. The formal agreement on EU Independent Fiscal Institutions network (EUIFI) was signed between 23 independent fiscal institutions from: Austria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Spain, Sweden and the United Kingdom.

Key words: *independent fiscal institution, fiscal council, fiscal discipline, fiscal union, fiscal integration, European Union, Economic and monetary union*

***JEL**: E62, H63*

Introduction

The independent fiscal councils on national level could serve the purpose of a democratic watchdog with expertise in the matter of the fiscal regulations. Their transparent observations shall be made available to the public and voiced out to the stakeholders – mainly the governmental regulators of the financial and economic sectors as well as the parliament which represents the interests of the citizens whose public funds would be spend at the end of the day as part of the government budget expenditure plans.

The 'Six-Pack' and 'Two-Pack' legislative acts accelerated the evolution of the national independent fiscal institutions across the EU. The first-time notion for independent boards which would analyse the national fiscal numerical rules was given by Directive 2011/85/EU[1]. This monitoring shall occur not only during the course of the implementation of the fiscal program but the planning phases and targets set up based on independent benchmarking assessment. According to the directive, the IFIs shall be endowed with functional autonomy vis-à-vis the fiscal authorities of the member states.

[1] Council Directive 2011/85/EU of 8 November 2011 on requirements for budgetary frameworks of the Member States, OJ L 306, 23.11.2011, p. 41–47

1. The role Fiscal Councils in the EU

The existence of the national fiscal consulting bodies contributes to the overall budgetary control in order to improve the quality of the governmental decisions and the democratic control over the taxation and public spending. Governments are often susceptible to the '*deficit bias*'[2] for pure political expediency and electoral gains (Baldwyn, Wyplosz 2015). As authors suggest, collective measure is possibly required to enforce sustainable fiscal decisions and coordinated actions among group of countries whose interests and actions must be aligned in order to minimize negative spillovers between the members of the union.

The idea of expanding the budget deficit for political purposes could happen in few ways should there be no fiscal control or certain level of supranational monitoring. In times of crisis, some governments might decide to resolve current economic issues by 'borrowing' from the future generations – the heavy public indebtedness (through increasement of the sovereign government debt at present) would be a temporary solution that could influence the purchasing power and financial stability of the generations to follow.

The above could be attributed to the nature of the national political system when multiple coalition parties or interests of related groups shall be met. As easy as it seems, monetarization of the current debt could have also been possible in case there was no EMU or, again, supranational monitoring mechanisms. The national governments could have simply been allowed to request central banks to print out money to cover the debt which on its end will lead to inflationary pressure and the economy would be depressed in a long run.

Without proper fiscal controls, those negative scenarios could trigger fears of defaults of countries which find themselves unable to serve on its debt. This is highly undesirable picture for the union such as the EU which is becoming more interdependent than ever after decades of economic and social integration.

The participation in the EUIFI is a voluntary act and is not constituted under the EU legislative acts pertaining to the fiscal stability and draft budgetary plan regulation[3]. EUIFI supports its partner organizations in reinforcing the EU fiscal framework on local level, seeking better cooperation between the designed rules and the institutions with view on the principle of subsidiarity and enhancing local ownership and accountability.

EUIFI published minimum standards for the national fiscal councils which must be observed by all participating institutions. The standards are broad enough to serve as a framework for the local fiscal bodies in building their inter-institutional channels for cooperation. Let us review those standards briefly:

- An adequate level of resources and management flexibility:
  - Both human and financial resources shall be allocated for the national fiscal councils so that they are able to fulfil their tasks independently, with sufficient flexibility and without discretionary cuts. The mechanisms of analytical

[2] Baldwin, Richard E., and Charles Wyplosz. 2015. The economics of European integration. London: McGraw-Hill Education

[3] See Regulation (EU) No 473/2013, OJ L 140, 27.5.2013, p. 11–23

work, consultations between the members and delivering reports/positions shall be decided on local level considering the country specifics;

- Good and timely access to information:
  - On time access to reliable and comparable information sources shall be made available to the fiscal councils by the national governments – ministries or statistical offices;
- An effective implementation of the "Comply or Explain" principle:
  - This is the backbone principle of the national fiscal councils. As they are not mandated with executive power, they could influence the public opinion by voicing their concerns and recommendations towards the budgetary plans or actual budget progress of the national governments. Legal provisions could be in place obliging certain stakeholders to participate in joint meetings or take actions on recommendations issued by the fiscal committees;
- Safeguards to political pressures:
  - The independence of the experts shall be guaranteed by both material and financial provisions. There should be strictly no conflict of interests as well as members of the boards should be given chance to perform their expert skills adequately. Thus, parliament or the relevant ministers should observe the presence of these experts when they plan a budgetary calendar allowing sufficient time for the IFI (independent fiscal institution) to carry out analysis and publish its positions.

Those minimum standards are in line with the recommendations made by the Organisation for Economic Co-operation and Development (OECD) for the IFIs.

National fiscal councils in the EU would be useful institutional tool not only for tacking the 'deficit bias' in the budgetary policy of a certain member state. Being network of reputable experts, they could assist in avoiding income and debt spillovers between the member countries. *Without coordination, fiscal expansion in one particular country could impact in undesirable way their partner countries* (in terms of trade or regional integration).

Coordination in the fiscal policies is especially important during asymmetric shocks that affect countries in a specific way – while country A could experience favourable conditions (e.g. rising export levels due to currency depreciation) partnering country B could feel pressure on its production and further depress the economic situation.

While the supranational fiscal policies regulated by an executive body (in our case this would be the European Commission) could be suitable for symmetric shocks that spread across the member states with the same effects, this might not quite be the case for the asymmetric tremors in the economy. This where the local expertise and coordination among the national IFIs comes in place.

Not only do national fiscal councils observe the numerical fiscal targets of the local governments but they review them in line with the long-term budgetary goals in line with the EU framework. That is why *enhanced coordination between the local IFIs would support coherent fiscal efforts to achieve overall budget balance within the EU*, low or acceptable level of unemployment and decrease the output gap in the national economies.

Sargent and Wallace (1981) bring us the view that taxes and money stock are both baking the government debt[4]. This means that fiscal and monetary policies are both expressed via the budget structure and parameters. While we have strict solution on the monetary aspects within the EMU – the European Central Bank is governing the stability of the euro, the fiscal aspects are regulated through primary and secondary legislative acts and national acquis.

In line with the subsidiarity principle, national governments design their national budget plans and coordinate them through the European semester mechanism with the rest of the member states and concerned institutions. Objective evaluation of those fiscal and budgetary plans is required to ensure their correspondence with the Fiscal compact – the national fiscal boards are the one delivering expertise and independent opinion on those budgetary projects.

Their position is valuable to the policymakers in Brussels due to the fact that they posses first-hand information about the economic environment of the country in question, and being by presumption independent, should deliver a conclusion which is not biased by political ambitions, avoids information asymmetries and tackles the discrepancies between the projected budget and the more realistic scenarios.

In this aspect we can view the national fiscal boards in between the fiscal federalism and the application of the supranationality principle – they are observing fiscal parameters agreed on Union level to tackle the heterogeneity among member states while at the same time applying their discretion considering the national structural specifics and course of development.

The importance of policy coordination is vital in order to smooth the economic cycle (Chadha and Nolan 2003)[5]. This is one of the areas where the network of the national fiscal councils in EU, the EUIFI, shall be developed – dedicated coordination among the members to properly evaluate the macroeconomic stance of the EU. These efforts shall be made in order to decrease the macroeconomic heterogeneity that appears in regions/countries experiencing lower level of cohesion or asymmetric shocks.

We concluded that coordinated actions are beneficial for mitigating the risk of spillovers. The national fiscal councils however have the capacity to react faster than the supranational institutions when it comes to local asymmetries or temporary shocks. Thus, they are pivotal for the discretionary fiscal policy of the local governments – in times when the automatic budgetary stabilizers are not sufficient to tackle ongoing issues, the discretionary measures shall be taken to minimize the effects of slumps in the economic activity.

The national IFIs could foresee budgetary gaps based on overly positive economic projections to fill up the income side of the budget or populistic expenses which does not correspond to the sustainable fiscal rules. Early alert could lead to reviewing the budgetary projections and fiscal stance of the country. We need to highlight again that in their current shape the national fiscal boards in the EU would be able to publicly

[4] Sargent, Thomas and Wallace, Neil, (1981), Some unpleasant monetarist arithmetic, Quarterly Review, 5, issue Fall

[5] Chadha, J. S., & Nolan, C. (2003). On the interaction of monetary and fiscal policy. in S. Altug, J. S. Chadha, & C. Nolan (Eds.), Dynamic Macroeconomic Analysis: Theory and Policy in General Equilibrium (pp. 243–307). Cambridge: Cambridge University Press

express their concerns but cannot oblige the government to listen and follow their recommendations. The advisory function here could be helpful in determining the output gap and the structural deficit targets adherence.

2. Fiscal Boards Development and links with the EU policymaking

Historical data we have reviewed suggests that the fiscal councils are relatively new trend which was initiated by economically developed countries and it remains typical for the advanced market economies.

The guidelines for the establishment of the IFIs laid out in the directive are quite broad. That is why there are number of differences between the functions of the EU national fiscal councils between the member states and their level of contribution to the EU policymaking process.

Observations under the Fiscal Compact rules is conducted by the national IFIs among all signatories of the Treaty on Stability, Cooperation and Governance (TSCG). Those are 22 member states (euro area countries and volunteering Bulgaria, Denmark and Romania). There is one exception – Poland does not have at present separately functioning IFI body and respectively does not participate in the EUIFI network.

Table 1. Functions of the national fiscal councils – EU legislation and applicable national law

Function	Countries
Monitoring national fiscal rules by IFIs Monitoring of correction mechanism for the structural budget balance rule Production of macroeconomic forecasts	Austria, Belgium, Cyprus, Denmark, Greece, Estonia, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Portugal, Sweden, Slovenia
Monitoring of national fiscal rules (independent analysis) Monitoring of correction mechanism for the structural budget balance rule	Bulgaria, Denmark, Romania
Monitoring of national fiscal rules (independent analysis)	Czeck republic, Croatia, Hungary, Poland, Sweden
No requirements	UK

Sourse: Data by the European Commission

The OECD and EUIFI share common minimum standards for the functioning of the national IFIs. Those match the provisions in the dedicated communication[6] about principles on national fiscal correction mechanisms given by the Commission on the TSCG. The document highlights that: i) the national fiscal councils' status shall

[6] COMMUNICATION FROM THE COMMISSION Common principles on national fiscal correction mechanisms, COM/2012/0342 final

be legally accommodated; ii) there should be no interference in their observations and evaluations; iii) proven experts shall be chosen transparently as members of the boards; iv) human and financial resource adequacy shall be ensured by the national governments. The applicable Bulgarian legislative act is in line with those requirements.

All member states designed their IFIs in a way ensuring independence and political detachment from the current government cycle – meaning the IFIs mandate does not match the term of the parliament and/or appointments of the board members does not follow the appointments of the relevant ministers. In countries such as Estonia, France, Italy and Lithuania there are constitutional provisions requiring establishment of IFIs for example.

The main output of the IFIs is related to: i) macroeconomic and - ii) budgetary forecasting; iii) compliance with the numerical fiscal rules; iv) ongoing evaluation of the budget expenditure. Let us review few examples.

- In terms of macroeconomic forecasting production, the IFIs in Austria, Belgium, Luxembourg, Netherlands and the UK are actively involved in this process. The Fiscal Board of Bulgaria evaluates the spring and autumn macroeconomic forecasts issued by the Ministry of Finance.
- In terms of budgetary forecasting, IFIs of Austria, Belgium, Denmark, Greece and Italy are producing budgetary forecast which is compared with the government projections. In the UK the Office for Budget Responsibility together with the Treasury issue a joint budget forecast. The Bulgarian fiscal board endorses the budgetary forecast issued by the Ministry of Finance. This includes the proposed budget for the national social insurance and the national healthcare.
- All IFIs across member states monitor the compliance of the numerical fiscal rules, endorsed by the national law and the Fiscal Compact.
- Budget expenditure analysis – it occurs in the course of budget implementation. Most of the fiscal boards contribute with ex-post evaluations of the expenditure and revenue parameters.

Core functions of all the IFIs are promoting transparency of the public finance stance, encouraging sustainability through quality evaluations and recommendations delivered to the national and EU stakeholders.

There is definite heterogeneity however observed among the functions scope of the IFIs in the EU. While some of the IFIs are aligning their tasks with the explicit requirements in the national and EU acquis, others go beyond the minimum requirements. For example, the IFIs in Ireland and Bulgaria analyse the health expenditure, in Germany the IFIs advise the government on fiscal statistics improvement. A Brief guide to the public finances[7] was issued by the British Office for Budget Responsibility in an attempt to boost the public awareness.

In an attempt to summarize the IFIs activities and systematically review their contribution to the EU policymaking process, the Commission's Directorate General for Economic and Financial Affairs computed a Scope Index of Fiscal Institutions

[7] Latest edition available at https://obr.uk/docs/dlm_uploads/Brief_guide_to_the_public_finances_March_2019.pdf

(SIFI) measuring the scope and range of activities performed by the national IFIs. The index groups typical tasks into six:

1) monitoring of compliance with fiscal rules;
2) macroeconomic forecasting;
3) budgetary forecasting and policy costing;
4) sustainability assessment;
5) promotion of fiscal transparency;
6) normative recommendations on fiscal policy.

SIFI has been calculated on annual base since 2015. The computation of the European Commission's SIFI consists of weight associated between the different tasks performed.

Computation of SIFI

$SIFI_{n,t} = \sum_{a=1}^{6} TK_{a,n,t} * C_{TK,t} * W_{a,h}$

$SIFI_{n,t}$: index for institution n at year t

$TK_{a,n,t}$: task a completed by institution n at year t

$C_{TK,t}$: legal force coefficient for task TK at year t

$W_{a,h}$: weight associated to task TK_a (h being the type of weighting scheme)

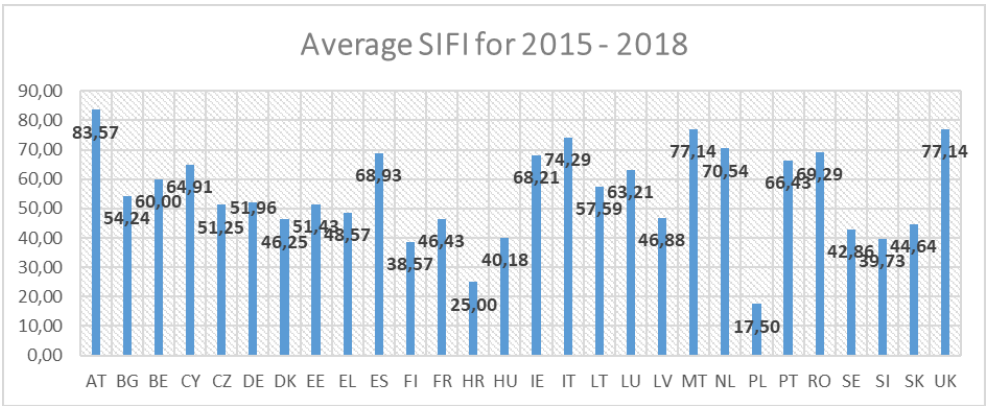
The index expands its assessment power by assigning bonus weight to tasks which were not under the legal requirement for a certain IFI. This way it improves the score for those organizations which demonstrate proactivity.

The scores are assigned into the following expanded categories:

1) Monitoring of compliance with numerical fiscal rules:
   a. bonus for involvement in triggering correction mechanism;
   b. bonus for monitoring of all the rules for the general government level.
2) Macroeconomic forecasting:
   a. bonus for reconciliation procedure in case of diverging views between govt and endorser.
3) Budgetary forecasting and policy costing:
   a. bonus for opinion based on quantitative policy costing.
4) Long-run sustainability analysis;
5) Active promotion of transparency;
6) Normative recommendations;

For example, all EU member states received bonus in 2018 for involvement in triggering of a correction mechanism with exception of Croatia, Poland, Sweden and the UK.

In the category for macroeconomic forecasting Austria, Belgium, Netherlands, Luxembourg and the UK are awarded with the highest score due to their active participation in macroeconomic projections composition.



Source: Author's calculations based on Commission's data

The Bulgarian Fiscal Council performance is competitive with the rest of the IFIs according to the SIFI index methodology. There is however room for improvement when it comes to the field of active promotion of transparency and normative recommendations.

We can see consistency in the high ratings for Austria, the UK as well as Italy, Ireland and Spain. This we can read the score for the last three countries as a testimony of an ambitious recovery actions for sustainable public finance in long run as a result of the last recession.

The encouraging results demonstrated by the Austrian IFI (Fiscal Advisory Council) were praised in the 2019 European Fiscal Board annual report[8]. The national fiscal board in Austria foresaw violations of the EU fiscal rules for 2018 and projected the government deficit would be higher than the one projected in 2017 although it would remain below the 3% of GDP Maastricht threshold. It published concerns for non-compliance with the MTO which triggered the European Commission's issuance of an early warning for significant deviation based on the expenditure rule.

Spain's Independent Authority for Fiscal Responsibility as well as the Swedish Fiscal Policy Council are considered as IFIs which contributed significantly to the fiscal discipline and budget governance according to the European Fiscal Board assessment.

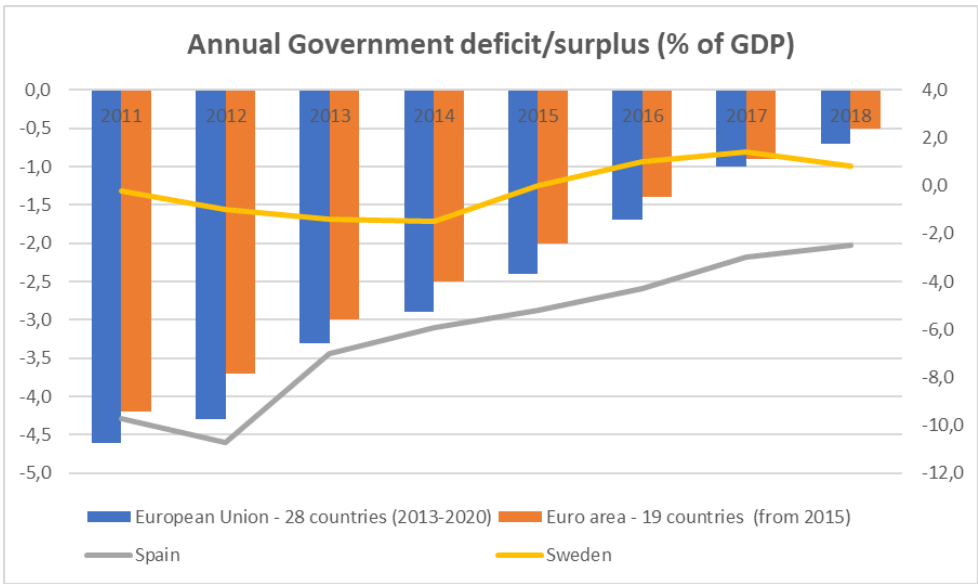
The Spanish IFI emerged with important functions in a situation of a severe fiscal crisis and pressure on the economy. The IMF recommendation[9] to create strong fiscal council in order to boost the credibility of the government spending gave empirical results which we observe below – the government debt decreases with at stable pace. The Independent Authority for Fiscal Responsibility demonstrated impartial opinions and strong public voice regarding the 'comply-or-explain' principle.

Apart from the expansion of competences of the Swedish Fiscal Policy Council (FPC), the IFI demonstrated complete independence and relied on political consensus

[8] European Fiscal Board (2019), 'Annual Report 2019', EFB: Brussels

[9] IMF (2011), 'Spain – Staff Report for the 2011 Article IV Consultation', IMF Country Report No. 11/215,
Washington, D.C.

among the ruling and opposition parties which agreed on the importance of unbiased judgement towards the fiscal discipline. Its actions were not following political agenda and in the 2009-2010 crisis, FPC advocated for fiscal expansion rather than constraint[10]. This is very essential trait of the independent expertise – do advocate for actions which will tackle the negative experiences of the current economic cycle by allowing buffers/fiscal space to be used as a stimulus.



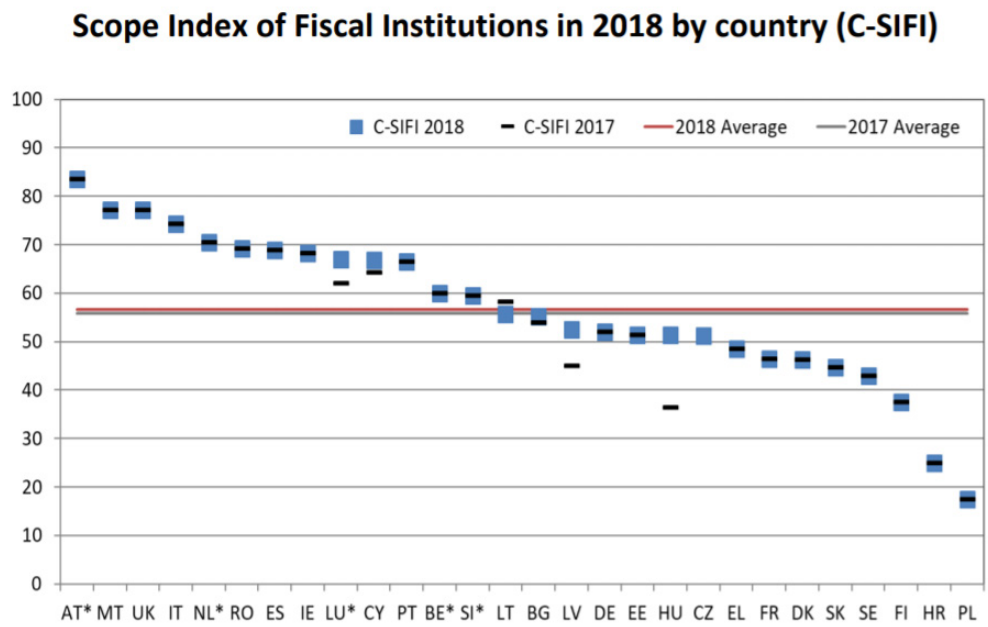
Source: calculations based on Eurostat Data

Fig.1. Annual government deficit/ surplus, % of GDP

We can empirically prove the results of the fiscal efforts of those countries by reviewing the positive dynamics of their government deficit (as % of GDP) for a fraction of time.

The empirical data between the average SIFI for the period of 2015 – 2018 as well as the SIFI for 2018 in particular are showing relative consistency in the scores of the countries. Austrian IFI remains with the top score consistently during the reviewed period. High level of consistency (above the average) is noted for Malta, Spain, the UK, Netherlands and Luxemburg (where more than one IFI is functioning).

[10] Calmfors, L. (2013), 'The Swedish Fiscal Policy Council: Watchdog with a Broad Remit', in: Restoring Public Debt Sustainability: The Role of Independent Fiscal Institutions, edited by George Kopits, Oxford: Oxford University Press



Source: European Commission

Fig.2 Scope index of Fiscal institutions in 2018 by country

The lowest score is calculated for Poland which Supreme Audit Office is not a registered organization in the EU network of independent fiscal institutions. Thus, the office's functions are not aligned completely with the IFI standards mentioned earlier.

Box 1. The case with Poland

Poland does not have an independent fiscal board registered with the EU network of IFIs. In this situation the SIFI index lowers down the country's score due to the fact that the organization there is primarily involved in monitoring of the numerical fiscal rules but not in macroeconomic forecasting and evaluations as well as activities in the other four categories compiling the index.

There is however an institutional establishment for fiscal discipline in Poland – the Supreme Audit Office, abbreviated earlier in its 90-years old history as NIK. This is an independent government audit body serving as a watchdog on public spending. It reports to the lower chamber of the Polish parliament and its positions are adopted by the Council of NIK (expert members). The Council consists of the NIK President, Vice-Presidents, Director General and expert members.

There is a great level of similarity between the way the Polish audit office functions and number of EU IFIs, the Bulgarian Fiscal Council including. The organization is led by a president who is supported by 4 Vice-Presidents and 3 Advisors to the President of NIK at present. There are seven experts with proven academic and professional experience called 'Scholars in law and economics'. Their meetings could be initiated by the president or demanded by 1/3 of the members.

The Supreme Audit Office issues analysis for the state budget program progress, monetary matters, of audits and annual reports on its activity. At this time Poland does not have plans on establishing an independent fiscal body.

High positive relation between the top-performing national IFIs and the EU economic policymaking is a characteristic of member states who are adhering to the 'Two-Pack' Regulation 473/2013 which requires macroeconomic forecast for the budget and the mid-term national fiscal plans to be produced or endorsed/approved by an independent body.

Out of the 19 eurozone member states, 5 rely on macroeconomic forecasts produced by their national fiscal boards - Austria, Belgium, Luxemburg, The Netherlands and Slovenia. This reaffirms the trust in those IFIs as well as their unbiased output[11] (Jankovics and Sherwood 2017). For the year of 2019 the draft budgetary plans were built up on a forecast produced by an IFI in Finland bringing the total number of countries using independent macroeconomic forecasts to 6.

The rest of the eurozone countries receive macroeconomic forecast by the ministries of finance. Under the 'Two-Pack' all remaining eurozone IFIs (Germany, Estonia, Ireland, Italy, Spain, France, Cyprus, Latvia, Lithuania, Malta, Portugal and Slovakia) shall endorse formally the macroeconomic forecast which would be the base for further budgetary planning and adjustments. Some endorsements however were issued with critique (Spain, Portugal, Estonia and Greece).

According to the latest 2020 European Semester country reports[12] Sweden's independent fiscal board (Finanspolitiska rådet) strengthened its positions legally in monitoring the fiscal rules and macroeconomic forecast. Commission's evaluation is positive: 'Public finances remain resilient. The general government balance had a surplus of 0.8% of GDP in 2018, with the general government gross debt at 38.8% of GDP and the debt-to-GDP ratio expected to have declined below the new 35% debt anchor in 2019'.

The country specific report for Croatia (SIFI index 25) highlights low fiscal sustainability risks in short and long run. The Commission however highlights that the

[11] László Jankovics & Monika Sherwood, 2017. "Independent Fiscal Institutions in the EU Member States: The Early Years," European Economy - Discussion Papers 2015 - 067, Directorate General Economic and Financial Affairs (DG ECFIN), European Commission.

[12] European Commission Staff Working Document Country Report Sweden 2020, SWD/2020/526 final

fiscal framework remains incomplete as the Fiscal Policy Commission is not fully functional and the Budget Act is not yet in place[13].

Czech Republic has established IFI since 2017 and became functional in the following year. The scope of the activities contributed to a SIFI score almost near the average (SIFI index 51.25) for this short period of time. The country specific report on Czech Republic[14] notes the fiscal board there issued two reports endorsing that local governments are compliant with the debt management rules imposed in 2017. Three municipalities did not meet their obligation but remedied the situation within the given timeline.

The data we have reviewed suggests Italy has consistently high SIFI index – 74.29. In the 2020 Country specific report[15] there is a pending issue of the fiscal federalism within the country - reform of fiscal relations between the central, regional and local governments which is still incomplete. The reform was initiated in 2009 with the goal of allocating resources to subnational governments based on objective criteria and sound public spending. Completion of the reform has been postponed due to necessity of further clarifications with the local governments and is currently planned for 2021. The Italian IFI could play vital role in consulting and providing overall opinion in this process.

Although there are no direct comments about the Fiscal Council of Bulgaria in the 2020 country's specific report, the European Commission notes a strong institutional framework[16]. Bulgaria has the highest number of numerical fiscal constrains – 9 in total.

Three of those are rules based on Maastricht criteria. The remainder of the rules emanates from national accounting rules. 'Based on compliance information in the Commission's database over the period 2015-2017, there has been a clearly improving trend as Bulgaria met eight out of its nine rules in 2017. However, the overall high number and differing accounting standards of the rules would warrant some streamlining', Commission concludes. This could be viewed as a testimony for the productive inter-institutional cooperation between the Bulgarian IFI and the other stakeholders (Parliament, Ministry of Finance, National Statistics Institute, etc.).

There are however deficiencies in the process. In Luxembourg[17], the National Council of Public Finances, an IFI, issued recommendations on the macroeconomic scenario underlying the budgetary projections, which were however rejected by the Finance Ministry as it argued that the macroeconomic projections are developed by another independent body (STATEC) and was therefore not in the area of competence of the National Council of Public Finances.

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[13] European Commission Staff Working Document Country Report Croatia 2020, SWD/2020/510 final

[14] European Commission Staff Working Document Country Report Czechia 2020, SWD/2020/502 final

[15] European Commission Staff Working Document Country Report Italy 2020, SWD/2020/511 final

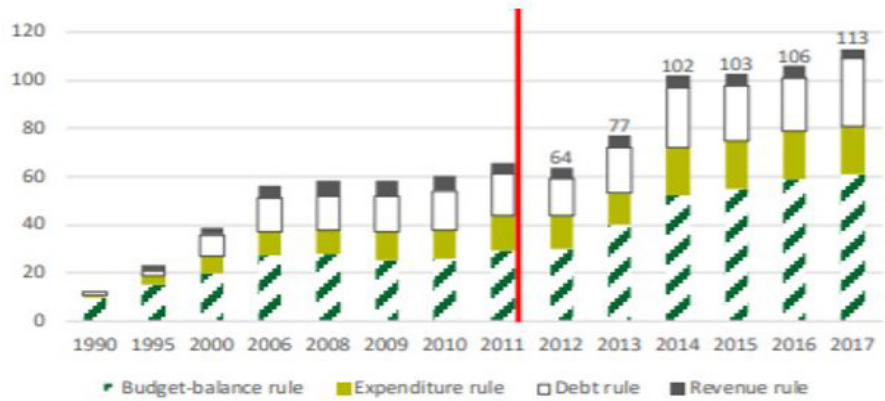
[16] European Commission Staff Working Document Country Report Bulgaria 2020, SWD/2020/501 final

[17] Angerer, J. and Sabol, M. (2020): 'In-Depth Analysis - The role of national fiscal bodies State of play - January 2020', European Parliament Economic Governance Support Unit (EGOV), PE 634.368

There is another vocal concern mentioned in the European Court of Auditors report[18] on the EU fiscal governance – risk of inconsistency with the EU fiscal rules assessment conducted by the Commission and the national IFIs. In p. 47 of the report is stipulated that in some Member States (e.g. Italy and Portugal), IFIs are mandated to assess compliance with EU fiscal rules.

Some IFIs without such mandate (e.g. France's) do this on a voluntary basis. The position about the adherence to the MTO (or the progress towards it) and adjustments due to special circumstances must be better coordinated between the Commission and the IFIs.

Number of national fiscal rules in member states, 1990-2017



Source: European Court of Auditors, European Commission
**the red line depicts the adoption of Directive 2011/85*

As we see the numerical fiscal rules growing in the EU (especially in the post-crisis years and more significantly the budget balance type of rules) the comment for more efficient institutional framework sounds even more feasible.

That is why the cross-institutional communication, transparency of information and greater power to demand response from the national governments or suggest actions under the SGP corrective arm might be the way to look forward for the development of the national IFIs and the European Commission as a focal point.

Note: This paper has been developed within the framework of the scientific research project NI-20/2019 „Financial Discipline in the European Union – problems and prospects" under the guidance of assoc. prof. Atanas Atanassov, Ph.D.

[18] European Union. (2019): 'European Court of Auditors EU requirements for national budgetary frameworks: need to further strengthen them and to better monitor their application', ISBN 978-92-847-3924-0

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GAMIFICATION IN BUSINESS LOGISTICS TRAINING

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Abstract

Developing multifaceted contemporary individuals implies that they have to be constructed as one whole system, as well as provide for their creative realization. In order to improve the training of university students, innovative models for conducting lectures and seminars should be implemented. The change in curricula should meet the social requirements of the modern world and technologies used by students. Implementing gamification in the business logistics training should aim at studying and establishing logistics knowledge and skills activities and processes. The games included in the curriculum should take into consideration the changes and not only identify the state and progress students make and to provide opportunities for making business decisions, they should be motivating and correcting, generating ideas and alternatives.

Gamification is the application of game-design elements in various systems which can be used in education. Within the education framework this can involve a number of game mechanisms. The possibilities to use these game-design mechanisms to facilitate training have become the object of increasingly more research and are ever so often included in practice. The report will focus on identifying how these game mechanisms can improve knowledge in business logistics and along with that strengthen efficiency and the provision of new opportunities for instructors.

Keywords: gamification, training, business logistics, supply chains

JEL: *F630, L90, R41*

Introduction

Teaching and learning are two interrelated aspects of the process of education which has undergone an evolutionary process over the centuries. In scholastic education the most important element in the process of knowledge acquisition is the memory. The students repeat what they have learned so that they can reproduce it mechanically. During the Renaissance teachers' attention focused on the immediate contact with real facts, i.e. the focal point is on students' perception and ideas. In the beginning of this century the theory and practice of education determined activity as a precondition for efficacy and efficiency of the education activity. Attempts were made to overcome the passive perception of knowledge and attention was directed to the formation of an active individual who can learn to understand the meaning of knowledge through personal efforts.

Nowadays the development of teaching in the higher educational institutions in Bulgaria witnesses a steady trend in strengthening activity in education. Active education is a key issue in business logistics which considers the cognitive process

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not only as a means to acquire knowledge but also as the most important source for the development of students. Logistics as a scientific management involves a number of activities and processes and facilitates the material flows. These flows are seen as integrated and include client service, demand forecast, inventory management, provision, communications, warehousing and storage, packaging, transportation, order processing etc. Although not all organisations explicitly implement all these logistics activities, each and every one of them concerns logistics management. After the 90ies of the last century market changes sped up, relying on the more comprehensive recognition of logistics and its development.

The purpose of this report is to consider the implementation of gamification in business logistics training by presenting a classification of the business logistics games and applying a Failure modes and effects analysis (FMEA) method game for training in quality management in logistics.

Application of gamification

Over the past years the gamification model has become one of the leading topics for discussion around the world. According to Groh, the notion "gamification" applies to the use of a game or desire to stimulate the involvement of a consumer (trainee) in a given activity. (Groh, 2012, pp. 39-46)

Gamification uses computer games in applied programme securitization aiming to attract trainees and improve their involvement in knowledge acquisition.

Gamification can be included in any type of training without even making it an informed decision. The process of introducing game elements in a given subject or degree course adds value to the training. In logistics this is possible in purchasing different products or for presenting individual systems, such as JIT and the push effect.

The main goal in gamification is to guarantee a continuous, measurable feedback for students, provide an opportunity to improve knowledge and, as a result, quick acquisition of all functional capabilities of the studied subject with gradual introduction in details. In gamification it is possible to gradually change and expand goals and tasks along with the acquisition of experience which guarantees improvement of the results while preserving the involvement of students.

The key characteristics of gamification are related to: **the dynamics which in practice** means the use of scenarios, which call for attention on the part of the trainers and a response on the spot; **the mechanics, which includes** using elements typical of computer games of the virtual awards, status, gifts etc. type; **aesthetics as a characteristic of gamification involves** making the general impression of a game which contributes to emotional involvement of trainees and **social interaction** which can include a wide range of techniques providing interaction between the trainers, which is characteristic of games. (Gamification, http://cio.bg/dictionary/164_gamification)

Broadly speaking using games as an element of the educational environment is part of the philosophy of active learning. Kohn (Kohn, A., 1997) assumes that in order to stimulate deeper understanding of the materials, students should be committed to what they are doing. Passman (Passman, R., 2001), Applefield Huber, Moallem (Applefield,

J.M., Huber, R.L. and Moallem, M., 2000, pp.35-46) describe the benefits of adopting a more constructivist teaching model. According to Mc Keachie (McKeachie, W., 1994) students' active participation results in positive learning and achievement of better results. McKeachie explains that learning improves if students make decisions and then have to take responsibility for the consequences of each decision. (Kenneth J. Klassen, Keith A. Willoughby, 2003)

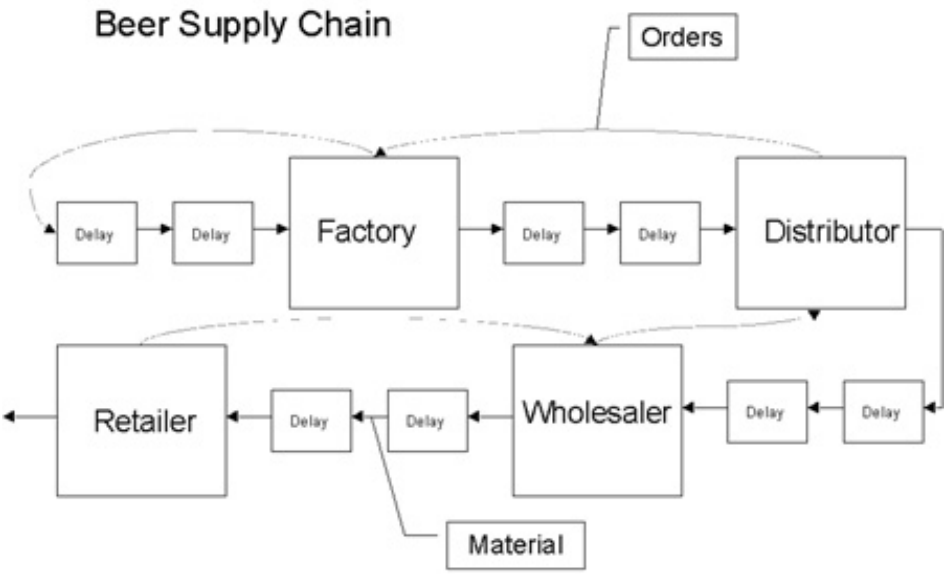
Business universities have broadly adopted the use of games and simulations in their curricula. Faria (Faria, A.J., 1998, pp. 295-309) writes that 97.5% of the accredited business schools use simulation games in the courses taught. Most of these games address marketing or strategic issues. Bodo (Bodo, P., 2002, pp. 207-216) describes the development of simulation in the selection of strategies, designed by students. It is common to apply innovative technologies in the games. For example, Doyle and Brown (Doyle, D. and Brown, F.W., 2000, pp. 330-342) introduced a business strategy which uses electronic mail and video conferencing where five teams of students in Business Administration in Ireland, France and USA participate. Also, guidelines for developing games were designed by Heineke & Meile (Heineke, J. & Meile, L., 2000) who suggest that games can be effective through: guaranteeing the "aha" effect – i.e. the received insight should remain unknown while the game is still being played; students should be expected to generate data (rather than get them ready) in order to acquire deeper understanding; to guarantee lower stress levels among students and to use simple materials. (Kenneth J. Klassen, Keith A. Willoughby, 2003).

Gamification in business logistics training

Gamification in higher education performs complex functions which provide unity of the main activities and change in their relations and interdependence in order to achieve the full realization of the training and facilitate the development of the elements of the training activity and providing a transition to the practical implementation and the working environment.

Logistics training has become increasingly popular over the past years. This is evidenced by the new degree courses in logistics in different universities in the country. Currently, logistics training in Bulgaria is provided at UNWE – Sofia, The University of Economics in Varna, Todor Kableshkov University of Transport, The Naval Academy, The National Military University – Veliko Turnovo, Georgi Rakovski Military Academy etc.

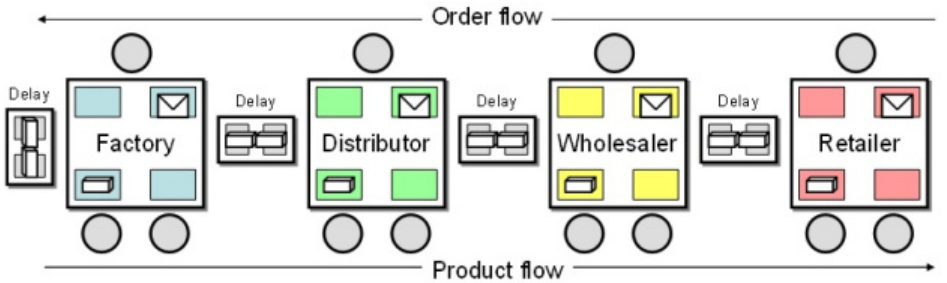
It can be stated that gamification in logistics training and chain management started with the creation of the beer game which is very popular among both teachers and students. This is one of the most popular demonstrations in management created by John Sterman (John D. Sterman, 1992, pp.40-44). In this game a retailer sells beer to end users and buys the beer from a wholesaler. The wholesaler sells the beer to the retailer but he orders it from the brewery where the beer is produced. The delivery chain is shown in the figure:



Source: Sterman, J. D., Teaching Takes Off, Flight Simulators for Management Education, OR/MS Today, October 1992, pp. 40-44

Figure 1. Beer supply chain

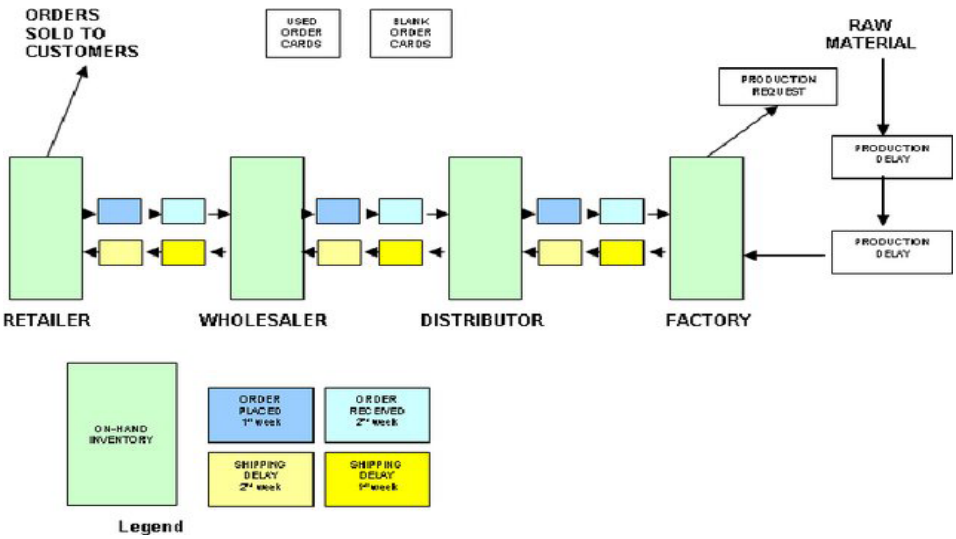
University logistics training is of paramount importance for the students' successful training and therefore their business career. It can be observed in their independent, conscious and creative learning and thinking. In the process of active logistics training and supply chain management the student analyses the task, its goal and its formulation which are related to inventory management and customer service. This activity is an important condition for acquiring long-lasting knowledge and skills in business logistics. Software products for project management or business processes, warehouse software products are an indispensable element of the logistics training.



Source: https://beergame.org/the-game/structure-rules/ (accessed 12 February 2020)

Figure 2. Logistics flows

The current stage in the development of logistics is the supply chain management – this is a complex systematic approach with a high degree of interaction and requires simultaneous consideration of a number of interrelations and strategic thinking. By adopting the entire supply chain concept, the participants represent all companies and organisations a given company works directly or indirectly through its suppliers and clients from the moment resources are produced to the point of product consumption. The researchers of these channels determine the members according to their participation in the different flows which are connected with the product, the right to ownership, payments, information, the promotion activities and the logistics flow (Louis W. Stern, Adel El-Ansary, and Anne Coughlan, 1996, pp.8-22). The researchers of these channels determine the members according to their participation in the different flows which are connected with the product, the right to ownership, payments, information, the promotion activities and the logistics flow. What is more, they try to involve all components which take part in the logistics flows irrespective of their contribution to the benefits for the end clients.



Source: https://www.researchgate.net/publication/237803282_The_Poker_Chip_Game_A_Multi-product_Multi-customer_Multi-echelon_Stochastic_Supply_Chain_Network_Useful_for_Teaching_the_Impacts_of_Pull_versus_Push_Inventory_Policies_on_Link_and_Chain_Performance/figures?lo=1 (accessed 18 December 2019)

Figure 3. Supply chain management

In logistics and supply chain managements training elements of Gamification such as tests, simulations, actual case studies, reality interviews etc. and the implementation of specific games in business logistics would considerably improve the success in acquiring new knowledge.

Classification of business logistics games

The classification of games used in business logistics training can include the following types:

1/ Creative games

- role-playing games with intelligence, research and forecast plots in inventory management;
- designing logistics channels, centres etc.

The management of creative games is indirect. The instructor does not regulate the game activities of the students but manages through the realization of the structural elements of this type of game. Therefore, the analysis of the psychological structure of the creative game that the students recreate / "in the shop", 'the library", "at the station", 'in the supermarket", 'at the post office" and many others/ is of significant methodological importance. An example of a game applied in logistics is the so called distribution game. It is designed in accordance with the globalization trends in supply chains. The players are the distributors and have to run a global network of suppliers and clients, each of them with its individual characteristics. The players have to manage products with high depreciation like electronics. The inventory management and the interpretation of the market development are of crucial importance to the players.

Another type of distribution game may involve the development of skills to control a small supply chain which is divided into two levels. The students have to monitor the quantity which is to be shipped by the manufacturer to the warehouse. Apart from that, it is important to monitor the number of shipments to different retailers. The goal of this game is to ensure that students deal effectively with the flow of goods to guarantee the customers' random demand in different locations. The students that generate the biggest net profit are the winners. If the shops do not have enough stock, they are not in a position to meet demand and suffer losses of income. These games reflect the problems related to ordering and distribution at different levels and distribution systems. The distribution systems typically have two levels of retention: a cetral warehouse and a retailer. The players have to monitor both levels and have to make decisions related to: when and how much to order from the supplier? When to transport the goods and how much to ship to each retailer? Clients purchase from retailers and the goal is to generate as much money as possible from these sales. One cannot sell something that is not available. Each retailer should be sufficiently stocked, but overstocking the system will result in higher expenditure. The following three decisions have to be made at every stage of the game:

1/ How much to order from the supplier?

2/ How much to send to retailer 1?

3/ How much to send to retailer 2?

Recreating the activities and the relations in the business environment, the players should aim to demonstrate their own qualities and pattern of behavior. This demonstration is closely related to the development of self-awareness, self-evaluation and self-analysis. This is one of the specifics of logistics games which turns game reality into a kind of self-education.

Students try to reproduce with greater accuracy the reality, i.e. conditionality gradually is replaced by the real specifics of the conditions and the objects used by players to create an imaginary situation.

Business logistics training uses other type of games related to order stimulation and warehouse arrangement.[2] Students try to reproduce with greater accuracy the reality, i.e. conditionality gradually is replaced by the real specifics of the conditions and the objects used by players to create an imaginary situation.

The leader of the game is aware of the structure of creative games and specifics of each structural element, which helps him guarantee maximum developing impact of the given game both in terms of the individual student and the team as a whole.

Business logistics training uses other type of games related to order stimulation and warehouse arrangement. This type of game is based on the idea of M. Amirhosseini from UPS Worldwide Logistics and aims to help to understand the challenges related to balancing work when clients' orders are selected gradually. In this game players start with the simplest method of selecting orders where one worker selects an order. In the beginning of the game the workers are usually stand side by side. And at the end the orders are fulfilled in a sequence different from that in the beginning. In an actual warehouse this would create jobs down the supply chain to the packaging where orders can be separated.

2/ Games with rules

Didactic games. Didactic games can be used in education and include elements from the teaching content of individual subjects. As an independent game practice didactic games are intellectual and cognitive.

Didactic games are typical games where rules are observed and thus intellectual and cognitive tasks are solved. These games can be used as a training tool because they are closely related to the respective logistics subjects (transport, warehousing, inventory management, project management and quality management in logistics). JIT – Kanban is an example of such a game. The production system in this game is controlled with Kanban cards. This means that the quantity of products between each production stage is limited. Just a limited number of units are stored and a limited number of units are produced. Production through the Kanban system is an example of a pull system. The "Kanban" game focuses on the control of a working centre where four products: A, B, C and D are manufactured. To produce one of these products in this working centre the production line has to be fine-tuned at each stage of production. Switching from production of one product to production of another one requires almost the same materials needed for the production of one unit. Adding or removing employees changes the production capacity.

A similar game, designed by Peter Jackson – THE CUPS GAME (Jackson, P., 1996), illustrates the difference between pulling and pushing in production. It is also

[2] A demonstration of the effectiveness of bucket brigades

effective in demonstrating the advantages of small lot production. This game makes a very convincing argument for just-in-time production.

Source: https://www.innovationworldcup.com/loxxess-looking-for-digital-innovations-with-logistics-game-changer/ (accessed 17 January 2020)

Figure 4. Logistics game with rules

Effective game in logistics training will help students understand concepts faster and remember lectures better. A game which is used for simulation of inventory management system can be associated with the creation of an order for a given good on a monthly basis and the goal is to find the optimal size of the order with minimum expenditure. It describes the expenditure incurred to store the unsold items and the expenditure incurred when a certain item is sold out (Kenneth J. Klassen, Keith A. Willoughby, 2003).

Similar games have been designed to be used in inventory management through simulation of a sports goods retailer who has to arrange goods appropriately and the students decide when and how much to order every month for a period of one year.

The game tasks are intellectual, cognitive and help develop the brain activities needed to understand the content of the subject. The cognitive activity is stimulated and knowledge is acquired and improved.

Like creative games, didactic games have a psychological structure and being familiar with it helps determine the methodological devices to be used by the teacher to manage the game.

The content of didactic games have several essential characteristics:

- *Cognition*. It is determined by the fact that students have at their disposal a set of knowledge which they can use to play the game. This is why the didactic game consolidates and specifies the knowledge acquired in the training process.
- *Integrity*. Everything that the student has acquired through various activities, at different times is integrated in the game and this is of great importance to logistics

training. Knowledge and skills are used in synergy. This is why didactic games have the role of an integrating unit with other subjects and different activities in the business logistics training.

- *Problem areas*. In the process of playing the game students find a new way to organize their knowledge, new analogy, new differentiation.

Students practice various in terms of specific content activities and operations related to incoming, internal and outgoing logistics. For example, in games related to inventory management, they develop skills concerning decisions about when and what quantity of a particular product to order. These games are designed to improve studying, inform students about the key concepts related to inventory management, give students the chance to test their intuition and to demonstrate how disappointing it is to make decisions in an environment with uncertainties.

The didactic game stands out with focus, motivation and stimulates overcoming difficulties. In this case "explicit" game rules are of particular importance since the willful regulation consists mostly in the skill to act in accordance with the recognized requirements and rules. A must in leading a didactic game is the consideration of the wording of the game rule because the mechanism of willful activity requires text instructions. While solving a cognitive task the student carries out on multiple occasions the structure of the willful activity, i.e.:

- ✓ Realising the goal;
- ✓ Outlining the way to be carried out;
- ✓ Selecting adequate actions;
- ✓ Overcoming difficulties.

The conation is facilitated by the game situation and game motivation.

The control and evaluation require the point of view which should be related to the rights of the didactic game. Therefore, following the rules, the students who play the game learn to apply criteria for evaluation and self-assessment.

Didactic games activate intellectual experiences – satisfaction from solving a cognitive task, from the chance to apply knowledge in new situations, from dealing with an issue that has arisen. Equally important are the experiences and feelings involved in the group participation in the game activities and the satisfaction from achieving the common goal.

The didactic game contributes considerably to the better application of the didactic attitude in the learning process which finds expression in the following:

- ❖ uniformity between the internal positions of the teacher in the teaching process and of the student in the learning process;
- ❖ uniformity between the structure of knowledge the student should have and the learning methods;
- ❖ uniformity between the structures of teaching and learning;
- ❖ uniformity between the knowledge that the student has acquired in the organized process of learning and the knowledge he will acquire during the self-study process.

If we compare the structure of the learning situation with the structure of the situation in the didactic game, we will see that they match. The game is a way to

confirm and complicate the learning task in terms of the specific game goal – in this case it is a teaching method.

Therefore, the inclusion of a didactic game in the learning activity, on the one hand is structurally justified and on the other, it is in direct interdependence with the programme tasks in each subject.

Implementation of a game by the "Failure Mode and Effects Analysis" (FMEA) method for quality management training in logistics

Failure Mode and Effects Analysis is a method designed to Identify and fully understand potential failure modes and their causes, and the effects of failure on the system or end users, for a given product or process; assess the risk associated with the identified failure modes, effects and causes, and prioritize issues for corrective action; Identify and carry out corrective actions to address the most serious concerns. There are several studies on security in the supply chain and reliability of supply, which raise more questions. The number of empirical studies is still insufficient in addressing issues related to the process of managing the reliability of logistics processes and supply.

Marek Šolc briefly describes the process FMEA (Failure Mode and Effect Analysis) methodology in logistics. It is then applied procedural FMEA methodology and finally article by defining risk numbers for possible faults in the process of material flow in the organization, we then pay proposal, whose task was to eliminate faults and reduce their effects on the overall process functionality. (Šolc M., 2012)

The game begins with a list of the main reasons for the risks of delivering deep-frozen meat products and failure to meet deadlines through a Affinity diagram. The list of possible logistical issues may include transportation problems, supplier problems, storage issues, production/ operations issues, and information system and communication issues. Then, the possible causes that cause the error in the logistics system and the mechanisms through which these defects can manifest themselves are identified. For example, late delivery may be due to a lack of inventory. This is followed by an analysis of the likelihood of defects occurring using the criteria in Table 1.

Table 1. Criteria for evaluating the frequency of occurrence of character defects

Probability of failure	**Degree of Severity Ranking**	**Score**
Very high (failure is almost inevitable)	≥10% 8%	10 9
High (high failure)	5% 4%	8 7
Moderate (random defects)	% 2% 1%	6 5 4
Low (isolated failures)	0.5%	3

Very low (rare failures)	0.2%	2
Remote (unknown)	≤ 0.1%	1

Source: Adapted by Curkovic, S., T. Scannell, B. Wagnerll, 2013, Using FMEA for Supply Chain Risk Management, Modern Management Science & Engineering, ISSN 2052-2576, Vol. 1, No. 2, 2013., p.11

The level of problem or damage, which is caused by defects in the list, is assessed. 10 points are given to defects whose effects could lead to serious loss and one point for those without consequences. Other defects are estimated from 2 to 9 points. Table 2 sets out criteria that can be used.

Table 2. Example of criteria for assessing the consequences of defects with time-delivery

Impact	Criteria: severity of the consequence	Points
Risk or violation of the established regime occurs immediately	The absence of material disrupts the working regime immediately Delivery of defective materials	10
Warning for hazard or violation of the established regime	In late delivery- warning for violating the regime Slow and unreliable transport Unreliable provider	9
Very big impact	Lack of supply schedule Long time to prepare the order in the warehouse	8
Big impact	Shipping damage due to faulty packaging	7
Medium impact	Non-agreed terms with suppliers	6
Little impact	Failure to comply terms of suppliers	5
Very little impact	Part of deliveries are timely and part untimely	4
Minimum defect	Inaccuracies in all deliveries	3
Imperceptible defect	Inaccuracies in part of the deliveries	2
No impact	No inaccuracies in deliveries	1

Source: Adapted by *Carl S. Carlson, "Understanding and Applying the Fundamentals of FMEAs," 2014 Reliability and Maintainability Symposium, January, 2014.*

The game continues to be graded the probability for potential defects to be detected before the product gets to the customer is assessed. The nature of the defects according to their ability to be found during the examination is assessed, using methods of mathematical modeling, methods for inventory management, methods to manage operations, etc. Ten (10) points are given to defects that cannot be detected and one (1) point to those that can be detected. Table 3 indicates the criteria which may be used for this purpose.

Table 3. Criteria for assessing the detection of defects

Detection	Probability of detection upon verification	Points
Undetectable	Potential cause of variations in delivery cannot be detected in control or such control is not carried out	10
Very hard to detect	Potential cause of variations in delivery is very hard to be detected in control	9
Hard to detect	Potential cause of variations in delivery is hard to be detected in control	8
Very little probability of detection	Very little probability to detect the cause of late delivery in control	7
Little probability of detection	Little probability to detect the cause of late delivery in control	6
Medium probability of detection	Medium probability to detect the cause of late delivery in control	5
Sufficiently high probability of detection	Sufficiently high probability to detect the cause of late delivery in control	4
High probability of detection	High probability to detect the cause of late delivery in control	3
Very high probability of detection	Very high probability to detect the cause of late delivery in control	2
Extremely easy to detect	Extremely easy to detect the cause of late delivery in control	1

Source: Adapted by Carl S. Carlson, "Understanding and Applying the Fundamentals of FMEAs," 2014 Reliability and Maintainability Symposium, January, 2014.

The risk of any defect is calculated by multiplying the marks obtained in steps 4, 5 and 6. So for each potential defect is obtained a Risk Priority Number (RPN), whose values range from 1 to 1000 evaluates the need for corrective actions to eliminate or reduce risk.

Suggestions for improvement and reduction of risks in the supply chain for manufacturing enterprises may be associated with increasing relationships with suppliers and by reducing complaints and returned by customers products. Opportunities to increase the reliability of logistics processes in the supply of the product may be creating successful partnerships in the supply chain that have integration and the ability to meet customer needs. These partnerships in the supply chain are related to the possibility of joint development of new products in the chain. Successful partnerships in the supply chain are related to the sharing of information aimed at improving and enhancing existing manufacturing capabilities.

Once you have taken measures for improvement, the risk of potential errors in delivery must be reassessed. When building a new logistics process potential causes

are determined based on existing experience and knowledge of the logistics process. Upon optimization of existing logistics process the application of the method can improve the information available on the main problems and also help in documenting data. The new value of the RPN is assessed, called the resultant RPN, after corrective actions were taken. Improvements and adjustments should continue pending the acceptable values for RPN for each potential cause for the occurrence of delay in delivery. In each case, the analysis of the problems in the supply of products, the acceptable values are different. In this case, considered acceptable values can be considered those from 1 to 64 and 65 to 124 can be considered as widely acceptable.

Conclusion

Games broaden students' knowledge, enrich their terminology, facilitate the process of generalizing, drawing conclusions and identifying patterns. They help develop a set of mental, practical and physical activities and operations. The difficult situations, typical of games, develop actively the intellectual capacity of students and facilitate their participation in the difficult cases in business logistics. Students' emotional satisfaction is achieved through their participation in different games and contributes to providing favourable "psychological climate", which is identified during the teaching process thanks to the mechanism for transmitting emotional states.

The introduction of games in the logistics curriculum can help the development of general mental capacity and components of creativity as a universal ability. It can be claimed that games in education contribute to the acquisition, enhancement, broadening and generalization of knowledge; improve the capacity of students to act and think. The complex system of tasks and variants, of rules and content leads to the emergence of new interesting game situations, in which students become an active subject of the game structures and makes efforts to control them and exercise self-control.

Education has always been a factor for social changes. Today, more than ever, it has to contribute to the more dynamic nature of the social processes because of the change in the economic and social life. If education is to be improved, its mechanisms have to be enhanced, a strategy should be built in order to improve its efficiency and to facilitate the solution of its problems. The contradictions between the contemporary requirements and the state of the system must be overcome in order to make education a means for life realization. Nowadays education should be considered broadly, which will make it possible to conduct future educational reforms and to shape both their content and their methodology. Education should not ignore any of the aspects of personal potential capacity: memory, motivation, aesthetic quality, communication. Special attention should be paid to games in the logistics teaching process at universities.

The introduction of games in higher education is based on a number of factors. First, games and their great importance for the formation of a multifaceted and broadly developed personality. Second, the connection between games and subjects included in the curriculum of business logistics: inventory management, logistics systems, warehouse and shipping systems, management of logistics projects, spiral nature of acquiring business experience and the development of the personality; difficulties as the ground for improved efficiency. Third, the role of games for conducting the

transition and connection between training and business and the practical nature of the training process and demonstration of creativity by students; problems in teaching situations; uniformity between collective and individual forms of activity.

Didactic games include different approaches for knowledge acquisition: inherent to the content of the subject /logical schemes for acquiring and differentiating the essential principles of subjects and phenomena so that all aspects can be considered/; main and secondary, reproducing the logic of the solution of the tasks. In the structure of didactic games as a form of education rational approaches are connected with the functions that a student has to carry out in order to solve the task. These do not necessarily coincide with the rules of the game but depend on their sequence and refer to the general thinking strategy in the process of solving the task. The didactic game as a method for knowledge acquisition aims to achieve independent broadening of knowledge and the ensuing changes in new situations which call for the realization of the way of acting and thinking, stronger self-deduction and self-control in its implementation. This is typical of the process of overcoming intellectual difficulties and for the positive attitude to the approach to solving as a mechanism which turns the set approaches into a sustainable personal training.

The benefits of designing a game following the FMEA method for the quality management in logistics subject are as follows:

1/ the type of game – this is a game which recreates the logistics system with the dynamic problems of a real system.

2/ implementation of a simulation package to design a real scenario with the possibility to consider all factors (logistic processes, people skills etc.).

3/ the likely applications since the game can be used not only as a training means but also as an instrument to assess the managerial skills of a potential manager to face the real and dynamic logistics problems.

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USE OF CHESS PLAYING IN INTERNATIONAL LOGISTICS TRAINING

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Abstract

The aim of the article is to justify the use of extraordinary game methods like chess in logistics training. The methodology of this approach is based on the historical experience - game methods are common in the ancient practice. Today, the potential of these methods is very high, incl. thanks to new technologies that enable fast connection and reliable simulation of case studies. By accurately reflecting life and, in particular, rivalry, chess is the game that offers the largest range of possibilities. His connection to military affairs makes him extremely suitable for training in international logistics, whose relationship with military affairs is indisputable. A number of examples from history show the importance of logistics in military campaigns. Key points in chess accurately reflect the importance of logistical factors for success. The complex rivalry of today to master key points in order to control important trade routes and supply lines can be successfully simulated with chess models. Especially the Three-player chess reflects best today's reality – the rivalry between major players in a multipolar world. Hence the use of chess playing in international logistics training could be very useful. This conclusion is presented for the first time in Bulgaria.

Keywords*: gaming methods, chess, international logistics, warfare, simulation*

JEL*: B49*

Introduction

The aim of the article is to justify the use of extraordinary game methods like chess in logistic training. The methodology of this approach is based on the historical experience - game methods are common in the ancient practice. Due to its complexity and realism chess is suitable for military education, but there are no evident attempts to apply it in logistics training today. It is necessary to go beyond narrowly specialized thinking and use the link between logistics and military work in order to use chess skills in learning to solve purely logistical problems.

Game and game methods - principles and applicability

The article is aimed at students and teachers of international logistics and aims to facilitate them in making difficult decisions by applying unusual for traditional teaching thinking patterns.

The game is a method of learning, laid out by nature in many higher animals, incl. in the human. It is a type of simulation that requires active participation. It simulates the real activity in one or another artificially created situation. The participants either perform certain roles or are active spectators. Its purpose is to form skills and habits for real action. The game can be funny and engaging, facilitating the acquisition of new

knowledge and enhancing brain capacity in this regard by engaging with emotional memory.

It helps to promote communication effectively, so it is a particularly appropriate method of creating an atmosphere of trust, but also of a competitive spirit - healthy competition, etc. among participants. In role-playing, participants tend to fuse in their minds the hypothetical and the real with respect to some activity or function, and as a result, study it while playing. They simulate a particular situation to play out what they have mastered or play in order to develop new abilities. Underlying role-playing is the understanding of social roles. They are seen as forms of behavior through which an individual learns and constructs his or her social life. Everyone is socialized, i.e. everyone learns about the behavior that the community expects from it.

In competitive games, such as chess, the participant seeks to prevail over another person by arguing within clear rules. In this way the game develops social skills for the participants: for communication, for cooperation, for negotiation and for resolving conflicts.

Playing methods have many advantages in training, including in higher education. Efficiency (measured in amount of time) is 4-5 times higher than traditional methods. [1] The games are suitable for both individual training and team preparation. The performance of individual tasks requires the contractor to specify in advance the limits of his own capabilities and then, on the basis of his initial individual indicators, to solve specific tasks depending on the situation. Simulators in initial driving training e.g. rely on the skills acquired in computer games. They save the risk of damage or crashes in real life.

Teamwork training is of increasing complexity, as it clarifies the boundaries of one's own capabilities by specifying the boundaries of the associates' capabilities, as well as the rules and opportunities for interaction. Simulators in initial flying training - previously designed for teams of 4-5 people, recently - for two, exemplify this feature. Among other things, this type of training emphasizes the role allocation and develops teamwork and communication skills, promotes combining forces for a common purpose, and is accustomed to adhering to certain rules adopted by all.

The games help to reinforce the connection between theory and practice by providing models for solving practical problems in a simulated environment. In the simulation, the participants perform certain activities in conditions close to those of the actual situation. The method is useful when some tasks require practice but it is not possible to perform the activity in real terms. This saves time and resources, while avoiding the danger of absorbing knowledge and skills only at the abstract level, and avoiding entering into a real environment where making the wrong decisions in the learning process may cause unacceptable damage. Simulation can only be part of the training activity. It needs to be brought as close as possible to the actual conditions so as to allow the participant to directly transfer the acquired knowledge and skills into reality.

Chess - features and benefits of training

Chess is a popular game of problem solving, evaluation, critical thinking and planning. It is a game of hypothesis and experimentation. In terms of the number of possible moves, it is second only to the "go" game. However, it is the most complex in terms of the diversity of resources available to both parties.

History

Chess is believed to have originated in Eastern India, c. 280–550, in the Gupta Empire [2], where its early form in the 6th century was known as chaturanga. Chess spread eastward and westward along the Silk Road. The earliest evidence of chess in Central Asia is found in the Sasanian Persia around 600, where the game came to be known by the name chatrang. After the Islamic conquest of Persia (633–44) chatrang became popular in the Muslim with the name shatranj, with the pieces largely retaining their older Persian names.[3]

As already mentioned, chess is one of the many war modeling games. Its connection to military affairs is most pronounced, as can be seen from her first Indian name, describing the four military divisions – infantry, cavalry, elephants, and chariotry, represented by the pieces that would evolve into the modern pawn, knight, bishop, and rook, respectively. Indeed, players have full-fledged "army" models, including different "sorts of troops" with different firepower and maneuverability. Victory in the party cannot be achieved without the proper interaction of the different kind of "troops", and victory itself can be achieved only by meeting the conditions that are valid also in the actual battlefield - interruption of enemy communications, breakthrough, backstabbing and encirclement, destruction of enemy forces, capture of the enemy commander.

After finalizing and harmonizing the rules, the strategy of chess remains the same and is based on setting and achieving long-term goals during the party - for example, mastering the center or challenging and exploiting weaknesses in the enemy's position, etc. The same remains the way tactical short-term actions lead to the achievement of strategic goals.

During the Middle Ages and during the Renaissance, chess was part of the culture of the aristocracy. It has been used to teach military strategy and has been called the "royal game". Over time, the game's popularity has increased, and it is necessarily present in the training of commanders today, despite the great changes within the armed forces over time. Because of the qualities it develops and nurtures, it is now used not only in the armies to train the minds of cadets and officers, but is also taught to children in many schools around the world as part of the compulsory curriculum. In 1999 the International Olympic Committee also recognized chess as a sport and even had exhibition games held at the Sydney 2000 Olympics.[4]

Chess and common educational skills

The game of chess could be an excellent educational tool in the universities too, because of the way chess can incorporate and relate to core academic subjects. The Educational Value of Chess lies in promoting decoding and analysis, thinking strategically, and foreseeing the consequences. Chess can improve comprehension and social interaction. It is one big science experiment - every time participants play a game they are testing hypotheses, experimenting and learning by trial and error. Through chess, players are required to think abstractly, analyze concretely and plan while juggling multiple considerations simultaneously.

Chess is a game of problem solving and evaluation. One of the essential goals of education is to teach students critical original thinking and planning skills. Research suggests that students playing chess learn concepts through physical and visual stimuli and correlate these concepts to cognitive patterns. During a game a player must formulate a plan of attack or defense. To effectively do this the player must evaluate the results of a specific action and sequence. Players are taught to pursue long-range goals and the need to reevaluate plans, considering all of the factors. They learn to be guided by logic rather than impulse and must analyze concretely.[5]

Studies have shown a strong correlation between learning to play chess and academic performance by involving a whole range of cognitive skills including analysis, planning, forward thinking, memory and a knowledge of history. Smith and Cage (2000) proved that students who received chess instruction scored significantly higher on all measures of academic achievement, including math, spatial analysis, and non-verbal reasoning ability.[6]

One of the key educational benefits is raised IQ scores. There have been a number of studies which have proven the benefits of chess in terms of results. Many studies, among them studies in Venezuela and Pennsylvania, proved, that studying chess two to three times per week caused a significant increase in both memory and verbal reasoning skills, especially amongst the more competitive players. Mathematics is where the biggest link between chess and education can be seen. Mathematics is more than equations and numbers. Mathematics is not only algorithms, but also pattern recognition and analysis of patterns. Chess is a game of prediction, calculation and pattern recognition. Predicting consequences and pattern recognition are key elements of both mathematics and chess. Attempts in New Brunswick, Canada in the early 90's to add chess to the maths curriculum, proved that chess, built into a part of the maths curriculum, significantly raised the problem solving scores of the students, when compared to the students who undertook the regular maths curriculum.[7]

Logical and sequential thinking are also encountered in chess and are possibly the two most important aspects when calculating combinations. Sequential thinking comes into practice when planning ahead and working out sequences, whilst logical thinking is used when reacting to opponents' plans, and working out the proper response. These two attributes are both heavily linked to maths where using logic is important. Because of these features chess is also a part of the curriculum in many countries, such as: Armenia, Paraguay, Belgium, Venezuela, Russia, Hungary, Turkey, Zaire, parts of the USA and Canada.[8]

Chess and Social Skills

Chess often serves as a bridge, bringing together people of different nationality, races, and genders in an activity they can all enjoy. Learning to interact socially is of great importance in a diverse environment. Chess allows players to develop friendships with other players, regardless of whether they are in the same class, or even in the same country. Internet connection enables organizing international tournaments or at least seeking new friends and exchanging positive experience. Due to the new communication tools chess is one of the mostly widely available games or sports in

the world. As and journalist says “There is no other activity that costs so little to organize and that cuts across so many barriers.” (Malcolm Pein, International Chess Master) [9] The game helps to overcome barriers in a culturally diverse group, as often represented by the teams of companies in the logistics industry.

Logistics and chess

The relationship between Logistics, incl. International Logistics, and chess is in two dimensions.

General connection Chess - Exact Sciences

Due to the direct connection between chess and maths, as mentioned above, chess can be used as a teaching method in all the science and academic disciplines that come on a rational basis. Logistics work with many quantitative parameters, which in this case are calculated in a complex search for a rational solution. Logistics is generally the detailed organization and implementation of a complex operation and the New Oxford American Dictionary defines it as “the detailed coordination of a complex operation involving many people, facilities, or supplies”.[10][1] As such, logistics is commonly seen as a branch of engineering that creates “people systems” rather than “machine systems”.[11] The logistics of physical items usually involves the integration of information flow, materials handling, production, packaging, inventory, transportation, warehousing, and often security. It organizes and controls the optimal allocation of all kinds of production factors.[12] The desire to enter new geographic markets, predominantly outside the country, encourages 3PLs to form alliances.[13] The goal is to combine the various factors at the right place and time at the lowest possible cost and thus ensure a lasting advantage over competitors / rivals.

Specific link - logistics, war and chess

Historically, logistics originated in ancient Greece as a military concept, encompassing processes for the full support and security of troops in combat - the supply of food, weapons and more materials, including transportation and storage, construction and maintenance of communications and transport infrastructure. Hence the older definition of the Oxford English Dictionary described logistics as “the branch of military science relating to procuring, maintaining and transporting material, personnel and facilities”.[14]

In military science, logistics is concerned with maintaining army supply lines while disrupting those of the enemy is a crucial element of military strategy, since an armed force without resources and transportation is defenseless. Military logistics was developed already in the ancient world and as modern military have a significant need for logistics solutions, new technologies and method have been developed. In military logistics, logistics officers manage how and when to move resources to the places they

[1] Hartley, Cindy, “Logistics - What is it?”, http://www.rgllogistics.com/blog/logistics-what-is-it

are needed using new communication and transportation tools. The historical leaders Hannibal, Alexander the Great, and the Duke of Wellington are considered to have been logistical geniuses: Alexander's expedition benefited considerably from his meticulous attention to the provisioning of his army, Hannibal succeeded to control long supply routes during the Punic Wars and the Duke of Wellington effectively supplied his Anglo-Portuguese army in the Peninsula War, despite outnumbered by the enemy. The defeat of the British in the American War of Independence and the defeat of the Axis in the African theater of World War II are attributed by some scholars to logistical failures.[15]

International logistics, rivalry and war

Following the foregoing on the relationship between logistics and war, international logistics is part of any large-scale rivalry to achieve economic and political supremacy over others, whether it is only economic or full-fledged war. And the connection of chess to these problems is obvious - the rivalry model that sets the game up is so complete that often in describing the big clashes mentioned above, chess terms are used - the most popular example being the work of Zb. Brzezinski "The Grand Chessboard" (1997) describing the rivalry between the Anglo-Saxon world and Russia in Central Asia.

There are many examples from the beginning of written history about how the change in trade routes, most often caused by conscious human activity, rearranges the economic and political map of the world, causing ruin and decline in some places, and in other places an upsurge and lasting domination. At one point, Central Asia was relatively economically advanced between 800 and 1100 AD, in fact the center of the world - present-day Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan are located along major trade routes linking East Asia with Europe, with rich "super-cities" (e.g. Balkh), where science and the arts flourished. This flowering continued until the 14th century and ended with the Tamerlane Empire.

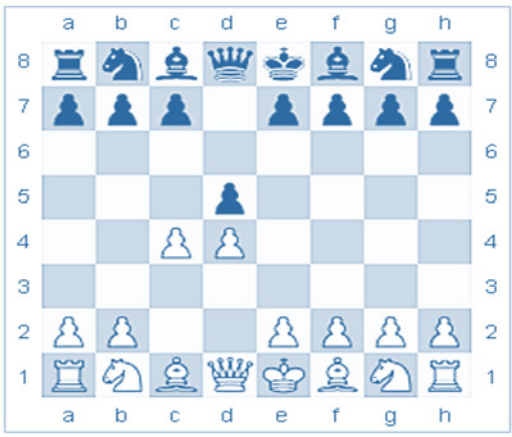
The conquest of Constantinople in 1456 by the Turks and the imposition of high levies on trade between the East and the West made these countries (especially the energy-deprived ones) an "economic black hole", a permanent part of the world periphery, with a brief exception during the existence of the USSR. The Turks' attempt to impose a commercial monopoly compelled traders from the Atlantic coast of Europe - Portuguese, Spanish, and later Dutch, British, French, to seek alternative routes. This became possible with the advent of 14th century of Carrack, the first large three-masted sailing ship designed for long ocean voyages and allowing the transport of heavy and expensive goods. The previously used camel caravans with intermediate stations became after the 15th c. unable to compete with the maritime transport, and this initiated the great "maritime empires" - the Spanish, Dutch, French, British, nowadays the empire of the United States.

Trade routes and communications link different regions and cultures into one macroeconomic space, provided that there are logistical solutions that combine these requirements. In practice, because of the unresolved logistical problems until the 19th century (the "opium wars against China, the powerful "opening up" of Japan) the

notion of "world economy" sounded conditional. Until then still existed relatively isolated from the rest of the world societies of greater or lesser potential for development. The world economy is now a fact and the rivalry between the great powers also reflects the attempts to control major trade routes and intersections.

Control of trade routes involves military bases, escorts, inspections and technical restrictions and other military means, which in general complicate logistical decisions and increase trade costs. However, these costs are inevitable. Security considerations have a broader dimension and often conflict with free trade regulations. However, a review of historical events shows that these considerations are often justified. Dependence on external food supplies e.g. pose an unjustifiably high risk to national security. This is how it was in the Roman Empire after Egypt was incorporated into it and became a major supplier of grain to Italy.

Putting Egypt and these supplies under control became the preferred scheme for usurpers of the imperial throne. Many countries in the Middle East, Sub-Saharan Africa and Japan are now vulnerable to food supply. This vulnerability can trigger or exacerbate political crises in countries such as Venezuela, Yemen and Qatar. So controlling key communications justifies the extra cost. Likewise at chess, control of important fields is sometimes worth the sacrifice of material that is then paid for. On this basis, a number of popular chess debuts exists, the so-called gambits:



Queen's Gambit: 1.d4 d5 2.c4. If Black takes the pawn (...dxc4), White can move e2–e4 and take control of the center, while threatening to capture the black pawn with the bishop (Bxc4).

Source: https://en.wikipedia.org/wiki/Gambit

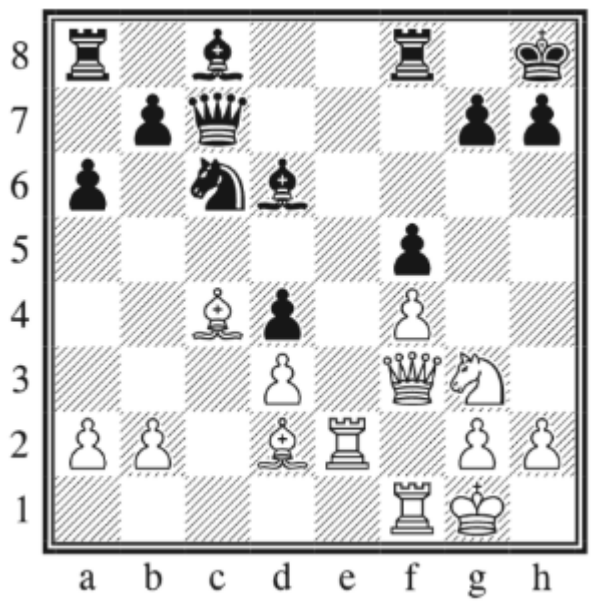
Figure 1. Queen's gambit

The reluctance to relinquish control can be expressed in the abandonment of foreseeable immediate profits. Such considerations delayed the construction of the Channel Tunnel for a long time. In the 17th century, the so-called navigation acts (bans on the use of foreign ships in trade and shipping) led to two wars between England

and the Netherlands, and set in motion a policy of protectionism that made England a leading maritime and commercial power, despite its technological backwardness at that time. The pursuit of access to trade routes across the Baltic and Black Seas, e.g. determine permanently the foreign policy of Russia from the time of Peter the First (1672 - 1725) until now.

The pirates cutting the link between Spain and its colonies in America contributed greatly to the decline of the Spanish empire. In its heyday, the British Empire relied on three key points - Singapore, Suez, and Gibraltar, and in the two world wars it was vital to maintain control over supply across the Atlantic. Currently, the world domination of the United States depends on control of the Panama Canal and the Strait of Hormuz.

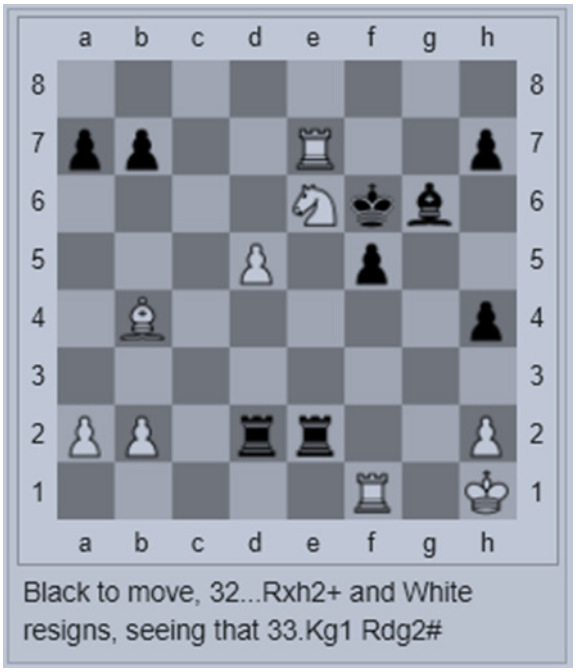
Global rivalry also implements the strategy of interrupting communications between rival forces (allied countries) and/or preventing such communications from being established. In the so-called "rook middlegames" most often the main objective is to split the enemy forces vertically:



Source: https://www.chessgames.com/perl/chessgame?gid=1007481

Figure 2. Nimzowitsch vs Rubinstein, Dresden 1926

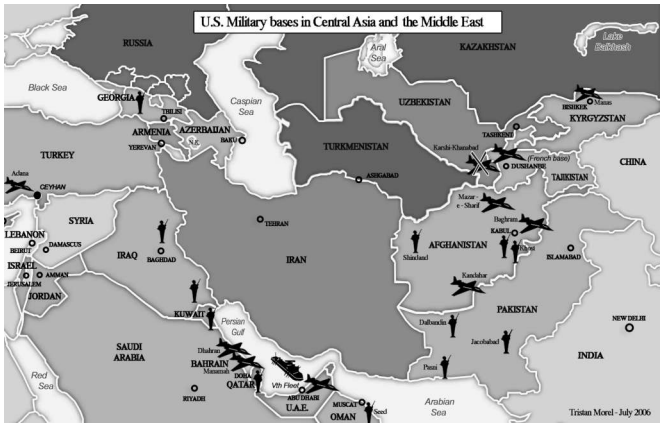
… or "cutting off" the enemy king from the rest of the forces horizontally, which leads to victory despite numerical equality:



Source: https://en.wikipedia.org/wiki/Rook_(chess)

Figure 3. Chigorin vs. Steinitz, Havana 1892

It is an expression of one of the oldest rules in military strategy and tactics. Reflecting on the world domination of the United States since 1990, Brzezinski saw the main threat to it in uniting all the resources of the Eurasia mainland. As the center fields (d4, d5, e4 and e5) in "The Grand Chessboard" he refers to the so-called "Eurasian Balkans", that means several relatively weak and dependent countries of the Middle East and Central Asia. Controlling them would allow the US to control the trade routes and energy supplies between China and Europe, preventing a geographically viable union between potential rivals. The restoration of the ancient Silk Road through the Chinese "One Belt One Road" project is technologically feasible and economically viable today. This also explains the attempts at US military anchorage in Afghanistan and elsewhere. Today the United States maintain two bases in Central Asia, one each in Uzbekistan and Kyrgyzstan, for its postwar operations in Afghanistan. Logically a regional group led by Russia and China uses pressure to the United States to remove its forces from Central Asia.



Source: http://www.heartland.it/

Figure 4. U.S. military bases in Central Asia and the Middle East

These anchor points are able to break one of the land sections of the "OBOR", the so-called "Eurasian Bridge" and the "OBOR" maritime section across the Indian Ocean to the Red Sea. Another part of the strategy in question envisages impeding the rapprochement between Russia and Germany, in fact the old strategy of Britain since the 19th century. Thus, the old major commercial axis of Novgorod (St. Petersburg) - Santiago de Compostela has been severely interrupted in the last 100 years by two "hot" world wars (1914-1918 and 1939-1945) and two "cold wars" (1945-1990 and 2014 onwards). Countering energy corridors linking Russia and Germany, e.g. ("Nord Stream" 1 and 2) is carried out with the active assistance of Poland, the Baltic States and Denmark, and their alliance with the United States in this opposition is also called exactly "chess union" in the theory of international relations. The Three Seas Initiative, launched in 2016 (also known as the Baltic, Adriatic, Black Sea Initiative) aims at connecting the Adriatic Sea, Baltic Sea, and the Black Sea, building two major infrastructure projects in the region:

- A north–south highway "Via Carpathia", connecting Klaipėda in Lithuania with Thessaloniki in Greece;
- Liquefied natural gas infrastructure, with sea terminals in Poland and Croatia and a connecting pipeline [16],
- … cutting off the "East-West" transport and energy connection, replacing it with the "North-South" route.

Similar local rivalries have led to the civil war in Syria: plans to launch a Pan-Arab gas pipeline (Qatar-Saudi Arabia- Jordan-Syria-Turkey) have clashed with Iran's attempts to bring its supplies across Syria to the Lebanese coast of the Mediterranean.

In many cases, more than two countries are involved in the competition, each one with their own interests, even during the bipolar system of international relations. At present, the United States, China and Russia emerge as major power centers in a multipolar world, treated in a complex system of rivalry and cooperation. The

orientation in the new complex environment could be eased through of exercises with Three-player chess. Three-player chess (also known as three-handed, three-man, or three-way chess) is a family of chess variants specially designed for three players. The variations of three-player chess use a non-standard board, for example, a hexagonal or three-sided board that connects the center cells in a special way.

Source: https://en.wikipedia.org/wiki/Three-player_chess

Figure 5. Three-player chess

Three-player chess variants (as well as other three-player games) are difficult to design fairly, since the imbalance created when two players gang up against one is usually too great for the defending player to withstand.[17] This situation, however, reflects more precisely the real life (e.g. "The strategic triangle USA –USSR or Russia – China) and helps students to understand better the tactical alliances, positions changes und surprising moves on "The Grand Chessboard" of the world politics". Since the theory of this variant of chess is not so developed, the students could enjoy additional by contributing the further development, playing the "pioneers".

Conclusion

The use of game training methods is an ancient practice. Today, the potential of these methods is very high, thanks to new technologies that enable fast connection and reliable simulation of case studies. By accurately reflecting life and, in particular, rivalry, chess is the game that offers the largest range of possibilities. His connection to military affairs makes him extremely suitable for training in international logistics, whose relationship with military affairs is indisputable. The complex rivalry of today to master key points in order to control important trade routes and supply lines can be successfully simulated with chess models.

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THE PANDEMIC AS A FACTOR FOR CHANGES IN SUPPLY CHAIN MANAGEMENT

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Abstract

Logistics and supply chain management is subject to rapid change. The clear tendency in the past was continuous growth, adopting new trends and technologies. This couldn't even be stopped by the actual SARS COVID 19 pandemic. Consequently, the training of logistics experts must always be adapted to the latest trends. For this purpose, the teaching of theoretical principles is an indispensable factor. A gamification approach would be a promising tool to achieve this.

The first chapter of this study examines this approach in general. Internal and external factors that influence the character of logistics and supply chain management are analyzed and evaluated. The second chapter deals with the disruption of the supply chains in the health care sector with special emphasis on the EU region. The third chapter focuses on the food supply chain as one of the most important factors for human survival. The food supply chains in the EU have demonstrated remarkable resilience in the face of the crisis so far.

Dealing with the supply chain problems this study shows how a gamification approach in logistics and supply chain management, especially for the food and health care sectors, could help to be better prepared for the next crisis.

Keywords*: logistics, supply chain management, transportation, game, future, students' training, food supply, digitalisation, SARS COVID 19, pandemic, the European Union, critical infrastructure, pharma supply chain, health care logistics*

JEL: *B49*

Introduction

Logistics and supply chain management are areas of work that are subject to rapid change. The clear tendency in the past was continuous growth, adopting new trends and technologies from industrial and agricultural production. This couldn't even be stopped by dramatic political and economic events; only be delayed for some time. The same can be expected for the actual SARS COVID 19 pandemic. Consequently, the training of logistics experts must always be adapted to the latest trends. For this purpose, the teaching of theoretical principles is an indispensable factor. However, it also makes sense to con-sider further learning opportunities, especially those with a practical orientation. A gamification approach would be a promising tool to achieve this.

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Games provide an opportunity to apply the theoretical principles in a practical simulation. This applies to the basic work as well as in situations where the influencing factors have changed, be it through evolutionary changes in supply and demand, or through challenging situations such as a natural disaster or a pandemic.

In the first chapter, such a gaming approach is presented. Internal and external factors that have influenced the character of logistics and supply chain management in the past are analyzed and evaluated. Different forecast possibilities that could describe the future of logistics are compared and their suitability for a gaming approach is rated.

Finally, the structure and functionality of such a game will be described. A basic requirement is the availability of all relevant data in a continuously updated context. These data are processed in the analysis area of the game using high-quality analysis tools, so that the player can finally use the most realistic scenario with the corresponding set of parameters.

The goal of every game is to keep the incoming and the outgoing logistics of your company or institution alive with the available tools and at the lowest financial cost.

This would enable our future logistics experts to be trained for future changes and especially for future crises in a way that comes very close to reality.

With such a highly sophisticated game and regularly updated real data, companies and institutions could also prepare their internal and external logistics and supply chains to mitigate the risks that future disruptions will bring.

The following chapters analyze the possibility of applying game approaches to specific chains of vital goods in a pandemic.

The SARS COVID 19 pandemic in the year 2020 has damaged large parts of the international economy in a way that hardly anyone could have foreseen. The disruptions of national and international supply chains as a consequence of the quarantine measures established made the situation even worse.

The second chapter deals with the disruption of the supply chains in the health care sector, the resulting problems, the activities for mitigation with special emphasis on the EU region. We finally discuss how a gamification approach in healthcare logistics and supply chain management could help to be better prepared for the next crisis.

The first part of the chapter summarizes the shortfalls and disruptions of the medical products supply chains that pushed some national health systems close to the abyss or even pushed them over the edge. The most important finding is that the nations', the economic regions' and the worldwide institutions' first reactions were often selfish and awkward and it soon became clear that they were far from being prepared for such a pandemic. The underlying problems are revealed and possible proposals are listed to avoid these problems in the future.

The focus lies on appropriate training for our prospective and actual logistics experts and decision-makers. A gamification approach as an addition to theoretical learning is dis-cussed. A consistent digitization of the health care system and the health care supply chain management is identified as an absolutely necessary part for implementation.

The SARS COVID 19 pandemic in the year 2020 has revealed the vulnerability of supply chains in a globalized world. The disruptions were not so much caused by the pandemic itself, but by the national and international quarantine measures. The

third chapter focuses on the food supply chain as one of the most important factors for human survival. Although it's written from the European perspective, the authors are very well aware that developing countries were hit much harder by the pandemic and especially by the disruption of their food supply chains.

As far as the more developed countries are concerned, the food supply chains have demonstrated remarkable resilience in the face of the crisis so far

Demonstrating the disruption of the food supply chains, the resulting problems, the activities for mitigation, this paper shows how a gamification approach in logistics and supply chain management, especially for the food sector, could help to be better prepared for the next crisis.

Such a highly digitized gaming approach, fed with all kinds of supply chain data could provide a real-life scenario. It could be used to learn the basics of logistics, but also to simulate a crisis like the SARS COVID 19 pandemic and to learn the skills necessary to master it with the least damage.

1. The future of logistics and supply chain management and how gamification can help to get prepare it

1.1. Factors that have changed logistics in the past and might change it in the future

Looking at the factors that have changed the way logistics - storage and transportation - worked in the past, we can identify three major factors.

Internal factors that drive changes in production, in industry and agriculture and consequently change the demands for their adherent logistics.

External factors are changes that are not directly related to production but might have a big impact on logistics.

External disruptive factors, which are global crises that affect everything around us, including production and logistics. Although they happen on a regular base, their occurrence and impact can hardly be estimated in advance.

According to the "ITF Transport outlook 2019", there are five internal factors in industry and agricultural production that drove changes in logistics and supply chain management in the past and will most likely do so in the future. These five factors usually work in combination with each other in varying proportions and can be used for prognostics to a certain extent, especially if there are usable data, like time series, available.

Cost

New technologies can make established ones uncompetitive due to lower costs. When railways and steamships were used to transport goods, horse- and oxen-drawn carriages were not competitive anymore for longer transport routes. Autonomous driving could have the same effect in the future, a process that has already started. [1] But it might as well be that production is moved to low wage countries. It might

then as well be that “old” technologies still can beat the new ones and, in this case, the demand for transportation would grow.

Quality

New technologies and/or processes raise the quality of products or services to a level that makes the old ones uncompetitive. This especially applies to Hi-Tec products and ser-vices that are essential in most countries’ industry production. In the past only a few countries were able to provide top-class technology and exported their products. With more countries now able to achieve this, the transportation volume might just as well shrink in the future.

Customers

Significant changes in consumer or business customers’ preferences make previous products or services unattractive compared to new ones

Regulations

New laws or regulations no longer permit old ways of working. Labor protection rules and environment protection policies have influenced industrial and agricultural production significantly in the past. Production and manufacturing were moved to other regions or even other countries extending the supply chain and raising the transport volumes.

Regulations for decarbonization of freight transport will surely be an essential factor in the future. Today there is no doubt left about the causal link between carbon oxide emission and global warming. There is a high probability that new policies will have a big in-fluence on the future of transportation and in consequence on the future of logistics and supply chain management. The current situation is that transport (freight and passengers) is highly dependent on fossil fuels that make up more than 92%.[2] Freight transport accounts for more than 7% of the global CO2 emission.[3] With growing freight volume and longer supply chains, the CO2 emission from freight transport will surely grow in the next decades and would seriously undermine climate goals.

Regulations to mitigate these emissions and new technologies were offset by the growth of the emissions caused by transportations and so it can be expected that stricter regulations will take place, especially to reduce road transport that produces 53% of the transportation emissions and is still growing.[4]

Resources

Previously important resources are no longer readily available or previously inexistent or inaccessible resources now become available.[5] New resources are usually found in more remote areas of the globe with a longer distance for transportation.

External factors that will most likely change logistics in the future are:

Digitalization and Big Data

As more and more industries are driving their digitization to a higher level, their logistics and supply chain services will consequently have to follow this trend. With

the so-called fourth industrial revolution (Industry 4.0), a huge amount of data will be available that can be used to improve volume and quality of production and transportation processes and help to achieve better quality, resilience and to reduce costs.[6]

Growing population and growing economy

The relationship between population growth and economic development has been dis-cussed since at least 1798 when Thomas Malthus stated argued that population growth would depress living standards in the long run.[7] Since then this is debated between demographers and economists and there is no clear answer at the moment.

But nevertheless, it can be stated that the global middle class is expected to grow and reach 5.5 billion by 2030.[8] This part of the population with higher financial power will most likely boost up private consumption with an increase in production and worldwide transport. But as Kenneth Award Boulding said: "Anyone who believes that exponential growth can go on forever in a finite world is either a madman or an economist."[9]

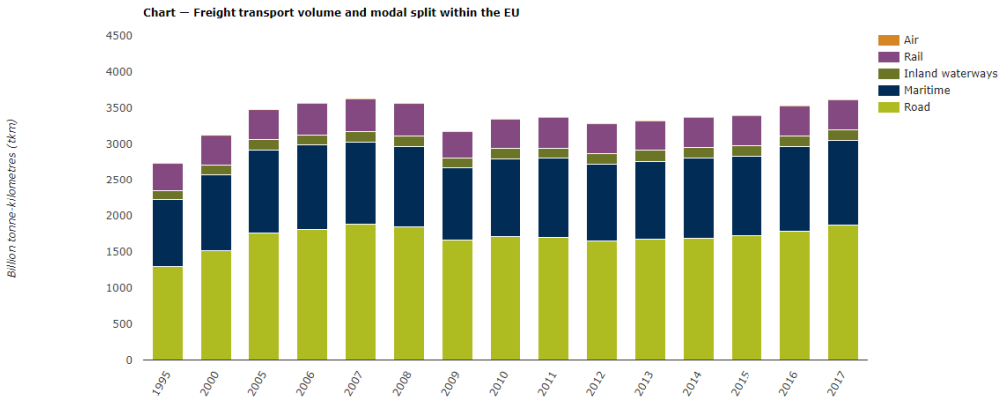
The limit of growth might as well be another external factor to change the future of logistics.[10]

Unlike the internal factors, external factors with a large impact on the future of logistics and supply chain management are difficult to predict. In the past, this has been global or large local military conflicts with a deep impact on the world's economy, a financial crisis like the Great Depression in the 1930s or natural disasters like volcanic eruptions. The eruption of the Icelandic volcano Eyjafjallajökull in 2010, grounded all air traffic over Europe for weeks.[11] Worldwide large pandemics caused by influenza occurred three times in the last century. The new coronavirus had a deep impact on the world's economy, which is now much more globalized and dependent on international supply chains than before.

The risks and consequences of such external disruptive factors are hard to quantify using forecast models. As a result, many companies and governmental institutions do not adequately prepare for them. This said, there is an urgent need to train our present and future experts and decision-makers for such a scenario.

The good news is that after each of these dramatic events, economic growth picked up speed again within a few years and subsequently the demand for transportation of goods increased again.

Even the economic slump of the SARS COVID 19 pandemic will not change this in a long term. The first signs of economic growth can be already seen in countries where the number of infected people is low. Figure 1. shows an example of the impact of the 2008/2009 global financial crisis on the transport volume of the EU.



Source: https://www.eea.europa.eu/data-and-maps/daviz/freight-transport-volume-6#tab-chart_1

Figure 1. Freight transport volume and modal split within the EU

1.2. Predictive models

"Prediction is very difficult, especially about the future." (Mark Twain)

Predictions are useless without the evaluation of the prediction model used. In our case, there are internal and external factors that are - to a certain degree - accountable. The external disruptive factors can hardly be taken into account when planning the future of logistics and supply chain management.

To fill this gap, we should think about emergency strategies to be kept in a place that could mitigate their impact. The disruption of the supply chains during the SARS COVID 19 pandemic is a good example of what we missed in the past and should do in the future.

Before we describe a possible gaming approach to achieve such emergency preparation, we will briefly discuss different forecasting models that should be a part of our gaming scenario.

Naive forecast

The simplest form of forecasting is the so-called naive forecast. It is used to extrapolate the available present and past values into the future without much effort. It is a very simple method and can also be used to assess the quality of other, more complex forecasts by comparing the mean errors of both forecast types.

It is used more often than authors would admit. If we see that the global freight has tripled within the last 30 years, we would expect that it will as well triple within the next 30 years. The naive forecast is suitable for time series, but does not take any of the internal or external factors into account.[12] Nevertheless, it can be a useful first tool for a future scenario.

Qualitative forecast

Qualitative forecasts are subjective assessments that are intuitively made by experts with the appropriate knowledge. The data is also processed for such a forecast and concrete, numerical results are produced.

Forecasts on economic growth, for example, are qualitative. The best-known method is the Delphi method, a reiterating, multi-phase survey of experts.[13] However, this type of prediction is highly error-prone due to the cognitive biases in human thinking.

Another common qualitative forecast technique is the scenario method, where the possible best case-, the worst case- and trend-scenario are considered.[14]

For our gaming approach, qualitative forecasting is a valuable option for scenarios that lack a part of historic data or scenarios that cannot easily be described with data. Like in the naive forecast, prediction errors can only be assessed in retrospective, i.e. when the predicted event has occurred.

Quantitative forecast

This type of forecast is pure mathematics: data and calculation. One-dimensional fore-casting methods, such as exponential smoothing or trend forecasting, are more likely to be used for short- and medium-term forecasts because they are too imprecise for long-term forecasts.

Multidimensional forecasting methods, such as regression analysis and econometric models, also take into account causal relationships between two or more variables. With methods for determining the forecast errors (e.g. mean square error), forecast accuracy can be determined for all quantitative methods.[15]

Due to this, these forecast methods would be a valuable asset in our gaming scenario. As long as the appropriate database is provided, the scenarios with the most probable likelihood could be chosen.

1.3. Reflecting the different future models of logistics and supply chain management in a gamification approach

Gamification can be defined as "the use of game design elements in non-game context"[16] According to Groh,[17] (Deterding et al., 2011, p. 10) the term "gamification" applies to the use of a game or desire to stimulate the involvement of a consumer (trainee) in a given activity. Games are likely most important ways of animals and humans to learn for survival.[18]

Different forecast models about the future of logistics and supply chain management can be implemented as a distinct scenario into a game to train logistics students. Each scenario then would have their particularly pronounced internal and external factors that affect or even damage the supply chains.

Different scenarios of the future of logistics and supply chains are driven by a different set of internal and external factors. In a computer game, we would call them "worlds" and the players would have the choice which one of them to choose.

The players can then demonstrate in a simulated environment what they have learned in theory. They have to find solutions, probably fail the first few times, but the goal is to try until the least expensive and disruptive solution is found.

This could be an efficient way to prepare them for their forthcoming challenges.

The goal is not to address the cause of the disruption, but to find out where the weak points and potential failures in the supply chain might happen and what the financial damage would be. The player is able to test different mitigation activities to prevent or at least minimize the damage.

1.4. Anatomy of the game

The game would consist of three layers. The database layer, the analytics layer and the user interface. Whether using a virtual logistics company to educate students or doing a business simulation in a logistics company, the prerequisite for a motivating and insightful game scenario is the availability of the appropriate data. This includes all possible data and metadata, structured or unstructured. This concept is known in industry and politics as Big Data.[19] So what we need is nothing less than all the data from the whole supply chain in digital form.

Such a data repository is not just key for a game, but also very useful for other business solutions of a company or institution. In a students' and trainees' gaming environment, this would be artificially generated or anonymized data. In a real company or institution, these data would be collected and could be stored in a cloud. In contrast to the students' training environment, these data would have to be updated in a timely manner.

The second layer in our game structure would be the analytics layer, a Business Intelligence approach.[20] This is also known as Business Analytics [21] or Data Mining.[22] These are different terms for similar procedures. It's all about making sense of the data that are produced during every business activity. To recognize patterns, improve quality and return on investment and getting support for business decisions.

In a gamification approach, this layer could work with the most sophisticated methods that are actually available: decision support, what-if analysis, artificial intelligence, machine learning and risk management.

To create this layer is a task for data scientists, not for logistics students or experts - un-less they are trained in both. The analytics layer is the place where all the linkages and calculations take place. This layer is fed by the data repository.

The user-level presents the gaming interface to the (end)users: students, trainees or experts in logistics. It's a graphical interface where the gamers can train how to do their daily job in logistics and supply chain management. In an advanced state, they finally have the opportunity to master possible future scenarios as mentioned before, when they are facing different transportation volumes, disrupted supply chains, locked down factories, closed borders, etc.

The goal is to master the challenge with the least damage for the ones they are responsible for (company, institution, population, etc.).

2. Impact on the SARS COVID 19 pandemic on the availability of pharmaceuticals and medical equipment

2.1. Definition, characteristics and the spread of pandemic

A pandemic describes the spread of disease in humans across countries and continents, in the narrower sense the spread of an infectious disease.[23] In contrast to an epidemic, a pandemic is not limited to a region.[24] It puts severe pressure on the health care and demands a quick and flexible reaction worldwide.

With regard to influenza, the World Health Organization (WHO) stipulated in its guide-lines on pandemic influenza risk management, which was last revised in May 2017, that the declaration of a pandemic - i.e. the transition from an epidemic to a pandemic - is to be carried out by the WHO Director-General. This was declared for SARS COVID 19 on the 11th of March 2020.[25] Many countries, where the number of infections bounced up, started to introduce quarantine measures.

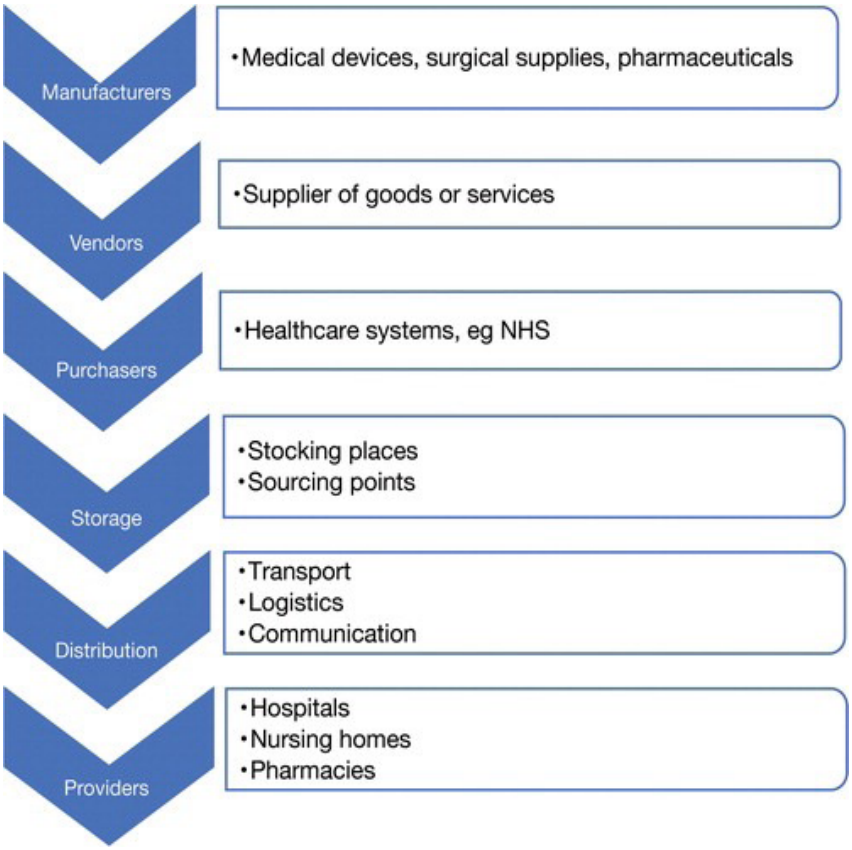
This new Coronavirus has the potential to generate a huge amount of seriously sick people who have to be hospitalized. This happens due to a long incubation period and a big amount of asymptomatic infections.[26] Depending on the number of infections and the number of victims who had to be hospitalized, the lockdown measures differed throughout the world. In consequence the direct impact on the economy differed depending on time and region. Contingency plans for future pandemics have to take this into account to ensure a flexible and customized strategy. This is especially true for the logistics and supply chain business.

Availability, bottleneck, alternatives, logistics, replenishment

The healthcare supply chain starts from manufacturing health products and ends at the places where these products support patients and clinical staff. Figure 1 shows a simplified version of this complex process.

Nowadays the manufacturing of healthcare products and their components partially or even totally outsourced into countries with low labor costs, like China or India. However, if in the event of a crisis, when the factories might be closed down and the supply chains are disrupted, vital medical products might not be available in sufficient numbers, nation-al medical services can quickly reach their limits.

This disruption of the flow of medical goods from the manufacturers to the patients and clinicians had a dramatic effect on the rate of mortality in a lot of countries.[27]



Source: Iyengar, K. P.; Vaishya, R.; Bahl, S.; Vaish, A. (2020): Impact of the coronavirus pandemic on the supply chain in healthcare

Figure 2. Supply chain management process on healthcare systems

The situation for pharmaceuticals

The dependence on China for the production of API (active pharmaceutical ingredients) active ingredients and the chemicals they contain or on India for generics, should be the wake-up call to realign the pharmaceutical and health supply chain and logistics and to establish a better weighting of production in Asia, Europe and the USA.

When the factory closures due to the lockdown measures in China started, the production of these ingredients has slowed down. This has resulted in shortages and relatively higher costs for the materials required to produce generic drugs, thus leaving producers facing difficulties in making and supplying end products. India has decided to stop ex-porting 26 active pharmaceutical ingredients amid fears of shortages within the country. This had a worldwide impact, especially on supplies of paracetamol, antibiotics such as tinidazole and erythromycin, progesterone and vitamin B12.[28]

Airfreight is a crucial part of the pharmaceutical supply chain. Pharmaceutical manufacturers rely on capacity in passenger flights (the so-called belly-flights) to move medicines and ingredients rapidly and securely. With the spread of COVID-19 and the lockdown measures, there was a dramatic reduction in passenger flights that normally carry pharmaceutical goods and alternatives had to be established.[29]

In countries with a highly developed healthcare system, it was possible to benefit from high stock levels in industry and pharmacy distribution centers.[30]

The situation regarding protective clothing

Personal protective equipment is essential for both staff and patients to prevent the spread of an infectious agent like the Coronavirus. Appropriate use of gowns, aprons, surgical face masks (FFP3), eye protection and gloves are essential. Personal protective equipment in health care is mostly designed to be used once and must then be disposed.[31]

In contrary to the relatively stable situation for most pharmaceuticals, there was a lack of sufficient amounts of personal high-quality equipment and disruptions at all stages of the supply chain, including manufacturing, procurement, and logistics of supply and distribution to hospitals, care homes and nursing homes. Consequently, a big amount of healthcare staff got infected or even died.

There are several reasons for the shortage of protective clothing.

Half of the world's personal protective equipment is manufactured in China.[32] Although the production did not drop that much in the first two months of the year, the problems was with transport and competitive activities. As soon as it was clear that the world is facing a pandemic in early march, a run on global supplies of medical protective equipment started, where competing buyers were paying a significant premium over list price and finally left the stocks emptied.[33] When the governmental measures against the spread of the pandemic materialized in lock-downs of factories, restrictions in international transport and even closures of borders, the whole supply chain for medical protective clothing got disrupted worldwide.[34] To make matters worse: a lot of countries had cut down their investment in health care and especially in stockpiling emergency supplies. Some of them even did not take the threat of a pandemic serious enough and did not organize any preventive measures like stockpiling health care products, when there was still time to act.[35]

The situation regarding medical devices

At the start of the pandemic, it soon was clear that there were not enough machines for intensive care available, especially ventilators to keep the serious Corona cases alive. There is no way to manufacture them in a large amount within a short amount of time, as these machines are made of hundreds of smaller parts produced by companies all around the world. Again, the disrupted supply chains were the main problem. This set a limit even to the world's largest makers of ventilators like Hamilton Medical in Switzerland or Dräger in Germany.[22] In some countries, this resulted in a dramatic shortage of ventilators and in consequence that younger patients were prioritized for treatment while older patients had to be sent home to die.[23]

The situation regarding the availability of health care personnel

Logistics cares about the transportation of goods, financial assets, information and people.[24] Health care personnel at the front line of the pandemic was challenged (and frustrated) by several factors at the same time.

Understaffed medicinal facilities caused extreme overtime work and additional hygiene measures take much more time to take care of patients than before. The lack of protective clothing puts them into a high risk to get infected and to pass on the infection to others. The lack of medical devices put them into an incriminating ethical conflict to decide who they would try to save and who they would leave to die.[25] At the beginning of the pandemic, there was even no tool available to monitor the free and occupied beds for intensive care.[26]

2.2. Reactions, possible solutions and alternatives to the consequences of a pandemic

The outsourcing of the production of health care products mostly to China and India for saving costs has proven to be a major problem in times when the supply chains are disrupted, like in times of a pandemic.

However, complete relocation to national regions would create other problems. An ideal way would be a partial relocation and a reasonable stockpiling, especially for critical drugs and protective clothing. Surely this would entail additional costs, which would have a direct or indirect impact on the costs of the national health care systems.

In general, it's not very popular to invest in the prevention of "low probability, high impact" events. However, the corona pandemic might have initiated a change of mind. Preventive measures are first and foremost the responsibility of international and national institutions, which ideally act in concert under the direction of the WHO.

Private companies can implement these prevention measures, but since they are profit-oriented, they might have to be subsidized by governments.

National reserves for medicines and medical equipment can safeguard the supply for a certain time in the event of a crisis. In June 2020, the Federal Republic of Germany has passed a policy to support medical emergency reserves at the federal and state levels with a programme worth billions of euros.[27]

A certain number of local factories, especially for protective clothing and medical devices could increase their production immediately in the face of a pandemic.

When there was a shortage in disinfectants, especially hand sanitizers several companies that usually produce alcoholic beverages could switch their production and jump into the gap.[28]

The attempt to let car companies produce respiratory ventilators did not really work well, because of the complexity of these devices. All kinds of temporary respiratory devices were put together, but fortunately, the worst-case scenario with a dramatic lack of ventilators did not last too long, as the pandemic peaked at different places at different times.[29] Apart from all the political "market noise": It is obvious that high-quality respiratory de-vices cannot be produced in large numbers within a few weeks by laymen.[30] The underlying problem is the fact that due to cost cuts in some

countries' health care systems there was not enough emergency reserve for all kinds of health care products, especially for medical devices and protective clothing.

Availability of health care supply chain

The most important element in healthcare logistics is the personnel, doctors, nurses and technical support staff. A low personnel key, the ratio of the nursing staff per occupied bed, can lead to serious problems in times of a crisis.[31] So it should be at a reasonable level at any time.

Even with a high ratio, there might be a point where there is no longer enough staff to provide safe patient care. Procedures to react on this should be prepared and be activated immediately without a time-consuming discussion about regional or national responsibilities.

Patients could be transferred to other facilities with adequate staffing. As a pandemic usually does not peak everywhere at the same time, patients could even be transferred to other countries.[32]

Students of medicine, volunteer helpers and even the national army can take over a lot of tasks to relief the medical staff. The financial, legal and insurance related aspects have to be clarified in advance.

Digitalization of the health care supply chain

Close cooperation and good communication between all supply chain partners are essential to agree on new developments in replenishment and capacity scaling.

The digitalization of the Health Supply Chain has already started and should be intensive under the impression of the impact the pandemic has caused. The midterm goal must be an uncompromising digitalization of the complete health care supply chain, where all supply chain partners from manufacturers to health care facilities can use a common data repository.[33]

Such a repository of data would open a new world of possibilities like quality assurance, risk management, cost reduction, automatization, artificial intelligence, simulation and gamification of emergency scenarios like a pandemic.

2.3. Mitigating the impact of a pandemic on the health logistics and supply chain with a gamification approach

SARS COVID 19 is a new virus infection that most likely had jumped from an animal reservoir to humans recently. A lot of other "candidates" with the potential to cause a pandemic are already identified.[34] There is a high risk that we will see more pandemics like this one in the future.[35]

We have seen a lot of problems in the health care logistics that have caused a high number of fatalities, but we also have seen a lot of great initiatives and smart ideas that were able to mitigate some of the stinging problems.

Our experiences will be documented in tons of books and terabytes of online documents. Governments all around the world will adapt their policies to be better prepared for future health crisis like this.

One of the central parts that have to be changed is the health care logistics and supply chains. This has to be started at the universities. During academic training, every student of logistics learns about disruptions in the supply chain and their impact on companies. However, this bookish knowledge, although foundational, does not prepare one for all the potential contingencies and scenarios that a disaster like a pandemic can present.

A training tool to simulate such a scenario could be very useful to fill this gap.

Like in a flight simulator for pilots, as soon as the theoretical part of how to fly an airplane has been trained, it is time to get a hands-on tool to simulate a real flight. Starting with routine flights, they will be confronted with unexpected incidents like heavy weather or technical problems. They are provided with written procedures to solve the problem, but in the end, they have to make their own decisions to "survive".

With such a gaming approach it would be possible to simulate a scenario for future pandemics and to test the emergency procedures for their feasibility, suitability and financial viability. The first target group for such a game would be the logistics students with a specialization on health care, who are the experts and decision-makers in the future.

The gamification approach would be a three-layer application.

Database layer

The quality and proximity to real-life of such a game depend very much on the data pro-vided. So, what we need is all kinds of data from the complete health care supply chain from production to patient. But also, the availability of emergency reserves and the number of staff available. Financial, legal, actuarial and all kinds of unstructured information are also essential.

In a students' and trainees' gaming environment, this would be artificially generated or anonymized data in a "frozen" data repository.

For experts working in health care institutions and in manufacturing companies all the data could be stored in a cloud application and accessible to those who are doing the da-ta analytics work.

Such a data repository is not just key for a game, but also very useful for other business solutions of companies, institutions and governmental offices.

The availability of the appropriate data is a matter of how fast the digitization of the health care system and the connected supply chains is driven forward. At the moment we are still in the initial stage. The medical production industry and the health care sector show the lowest degree of digitization.[36]

Analytics layer

The second layer of our gaming application would be the analytics layer. What we mean is a Business Intelligence approach. Other common terms are Business Analytics or Data Mining.(See above 1.4.)

User level

This level presents the gaming interface to the (end)users: students, trainees or experts in health care logistics. It's a graphical interface where the gamers can train how to do their daily job in logistics and supply chain management.

In an advanced state, they finally have the opportunity to master the challenges of a crisis like a pandemic with disrupted supply chains, locked down factories and a shortage in health care products.

The goal is to master the challenge with the least damage for the ones they are responsible for: the patients and the health care staff.

3. Learning how to secure the food supply chain in times of a pandemic with the help of a gamification approach

3.1. Effects of a pandemic on the international food chain infrastructure due to the measures taken

Producing and distributing food is a process with a lot of components, starting from the seeds, fertilizers, plant protection, harvesting, packing, final storage and transport. Additional steps are necessary in the production of meat or in the further processing of milk. Some of these steps are very labor intensive, some are highly automated.

So, the main problems turn out to be the lack of workforce and problems in transport. Most of them were and are still affected by the impact of the pandemic or by the measures taken against the pandemic.

Effects on farm production and food processing

Farm sectors are mostly dependent on (seasonal) labor. In Europe, most of them are travelling from the eastern European countries. Especially fruits and vegetables are more labor-intensive than grains and oilseeds which have a higher degree of automation. Limits on the mobility of people have reduced the availability of seasonal worker for planting and harvesting in the fruit and vegetable sector in many EU countries.[37]

Local volunteers could not fill the gap. Whether they were not willing to do this kind of hard work or because they did not have the necessary skills to work fast enough for covering the costs.[38]

While the work on the farm is usually done outside with a lower risk of infection, food processing is usually done inside of a factory building with workers placed close to each other, working in a cold environment. Social distancing measures reduce the efficiency of their work. The higher likelihood of infections or the fear of them led to labor shortages and even to shutdowns, especially in the meat processing industry.[39]

Effects on transport of agriculture raw material and products

Bottlenecks in transport and logistics due to the effects of the pandemic and the measurements taken have disrupted the movement of products along supply chains, including the food supply chain.

The three main modes of transport used for agriculture and food products: bulk (ships and barges); containers (by boat, rail or truck), other road transport and air freight. Different products use different modes of transport: grains and oilseeds, for example, are typically shipped in bulk; meat and dairy products are often shipped in refrigerated containers and trucks; and perishable products with a high value-to-weight ratio are transported by air, mostly in the "bellies" of passenger planes.

Bulk shipment is still going well and has not seen a remarkable decline. Cereals and oilseeds can be handled highly automated with less labor input.[40] Commercial road transport has fallen by more than 50% in April this year and is slowly recovering.[41] The steep decline in passenger air travel has brought belly transport to an all-time low.

The seed sector is highly globalized. Multiplication, production, processing and packaging for the same seed is often done in different countries and seeds are often transported by air. Fortunately, the seed needed for the spring sowing period arrived in time before travel restrictions were put in place. At the time when this article was written, it was not clear if the seed for the next growing season will be fully available.[42]

The introduction of border regulations across countries in Europe and the rest of the world is creating disruption in the food supply chains. Extra check, new or additional certificates at borders resulted in long delays. This could be disastrous for fresh goods. Some countries even sent trucks and/or drivers to quarantine, thereby significantly reducing ground fleets, especially in Europe. [43] Quarantines also apply to ships, which need to stay longer in ports. As a result, this leads to an increased risk of product damage and delays. [44]

Effects from sudden shifts in the consumer demands

Rapid and unexpected shifts in consumer demands had challenged the operating mode of the food supply chains.

Retail demand for canned, dried and frozen food increased dramatically in March when a general lockdown could no longer be denied. At the same time the demand for "food away from home" went towards zero with all the restaurants, cafes, catering, hotels closing, while the demand for "food consumed at home" products increased sharply.

The problem here is that volumes cannot just be shifted from catering to retail without extra costs in repackaging into retail units.

Human nutrition is very versatile and adaptable. The fact that different kinds of food were not available at certain times did not cause hunger riots in the "first world", but whining at a high level.

3.2. Reactions, solutions and alternatives when responding to the measures and consequences of a pandemic event

Why did the food supply chain and logistics show a good amount of resilience during the crisis?

Whatever crisis we are facing, the food supply chain and food logistics from "seed to meal" must be enabled to continue to work, taking into account all necessary safety measures.

While there have clearly been stresses and issues, overall, food supply chains in the developed world have demonstrated remarkable robustness and resilience in the face of COVID-19.

There are several reasons for this:

The responsible parties have obviously learned from their mistakes of the 2007/2008 food price crisis[45] when food prices increased unexpectedly causing economic and political instability in poorer and developing countries. It turned out that suppressing international food trade instead of continuing an open trade, made things even worse.

Other than in the manufacturing industry with their "just in time" supply models, the food industry usually holds a good amount of safety stocks and so is able to survive a phase of stockpiling or delayed supplies.[46]

In addition, food processors and retailers reacted swiftly to the changing demand. In-creased operating hours, hired extra staff in factories and retail shops. What also helped was the simplification of product lines and investigation to find alternative product deliveries.[47]

Companies who had invested in creating more visibility in their supply chain and thus had a better understanding of the operation of their supply networks, seem to have reacted better.[48]

The blessings of a digitalized world

All actors along the food supply chains could make use of delivery methods like "click and collect" services and online sales on a large scale. Fortunately, they already had started using it before the pandemic. Farmers started using digital technologies and plat-forms to sell their produce directly to consumers.[49] Initiatives also emerged to link farmers and restaurants directly to food banks.[50] So transport routes could be abbreviated and the risk of delays that come with long transport routes could be minimized.

Logistics and supply chain management has a very adaptable nature

The transport sector has swiftly adapted to the shocks of COVID-19. As passenger airline travel collapsed in February and March, removing a daily cargo capacity of around 80 000 tons, the use of specialized private aircraft for freight has expanded, adding more than 20 000 tons of daily capacity.[51]

Road transport faced different challenges when activity in non-essential sectors was greatly reduced, while other sectors such as food retail faced demand spikes. Yet the industry reacted quickly and managed to reorient the capacity to food and agriculture products.[52]

Smart political decisions

A bunch of smart political policies and suspending restrictions helped the logistics industry to continue their work. One good example was the creation of green lanes to minimize the total time spent on borders crossing down to 15 minutes.[53]

While new restrictions limiting the number of drivers in a vehicle were necessary, EU Member States suspended other restrictions (e.g. bans on driving at night or driving on weekends). Policymakers also streamlined certification procedures (e.g. by allowing scanned copies or electronic signatures) and relaxed regulations on trade in food (e.g. some labelling requirements).[54]

However, the most impactful policy response is probably that policymakers have so far avoided a repeat of the mistakes of the 2007-8 food price crisis, when initial food price increases were greatly exacerbated by export bans imposed by major exporters. Although some countries have introduced export restrictions during the current crisis, so far, their number and impact have been limited. Moreover, WTO members responsible for two-thirds of global exports of agriculture and agri-food products issued a joint declaration ex-pressing their commitment to keeping international trade open.[55]

3.3. A summary of lessons learned

Avoiding transport disruptions

Perishable loads (like food) and other essential goods must be handled with priority at the border. Borders must be kept open for such transports like a "green lane" the EU had set up in March 2020 for the duration of the pandemic.[56]

Regulations for truck drivers should be temporarily relaxed within justifiable safety and health parameters but the drivers also have to be provided with the necessary infrastructure if the rest areas are closed down.

Shipments in international harbors are taking longer than usual to unload because of a possible lack of transport workers. So, container detention charges on import shipments must be waived.

Electronic certifications for the imports of fresh or perishable products must be accepted and additional certification (like virus free food) must be avoided.

Avoiding a shortage of seasonal workers on farms and in food processing factories

Seasonal workers from outside the country must be allowed to move across borders, with the appropriate registration and strict supervision of the medical regulations and restrictions.

Seasonal workers from inside the country, especially volunteers must know what they expect in terms of physical hard work or long hours. Financial incentives like tax ad-vantages could also raise motivation.

In all cases pandemic measures like social distancing, availability of protective equipment against the virus must be ensured: at work and in the accommodation, even if they might slow down the productivity.

Avoiding the lack of resources

All services related to food production and distribution must be kept operating. The pro-duction of seeds and seedlings should partially be moved back from China into the EU region. Producers of food, seeds and other agricultural products, especially

the smaller ones, must be provided with financial assistance from the government to ensure that they are able to continue their work.

The marginal conditions in the food sector can be partly controlled by the government and partly by the companies. The support for the companies and their logistics could be subsidized by the government accordingly, as activities such as seed production are undoubtedly more expensive than if they are relocated from abroad.

3.4. Mitigating the impact of a pandemic on the food logistics and food supply chain management with gamification approach

It is questionable whether a pandemic like SARS COVID 19 can be prevented in the future. A lot of other "candidates" with the potential to cause a pandemic are already listed.[57] Others might already have jumped from their animal reservoir to humans, but are still unknown. So, the next pandemic will be a matter of time, we should be prepared.[58]

As far as the food supply chain is concerned, this pandemic has taught us enough les-sons to prepare ourselves for the future. Our experiences and the resulting measures and best practices will be documented in tons of books and terabytes of online documents. Governments all around the world will adapt their policies to be better prepared for the next health crisis like this.

Students of logistics and supply chain management will be trained to be prepared for something like this. During academic training, every student of logistics learns about disruptions in the supply chain and their impact on companies. However, this bookish knowledge, although foundational, does not prepare them for all the potential contingencies and scenarios for a disaster similar to this one.

A training tool to simulate such a scenario could be very beneficial here.

It can be compared with a flight simulator for pilots. When the theoretical part of how to fly an airplane has been settled down in their brains, it is time to get a hands-on tool to simulate a real flight. They start with routine flights but then are confronted with unexpected incidents like heavy weather or technical problems. They can solve a part of their problems with prepared procedures on checklists, but from a certain point of unpredictability, they will have to make their own decisions to survive.

The consequences of pandemics for logistics and supply chain management and the activities to mitigate them could be rehearsed tested for their feasibility, suitability and financial viability.

The first target group for such a game would be the logistics students who are the experts and decision-makers of the near future.

The gamification approach would be a three-layer application, as already mentioned above:

Database layer, analytics layer and user level

The prerequisite for a motivating and insightful gaming scenario is the availability of all kinds of data regarding the food supply chain. This includes all possible data and metadata, structured or unstructured. Besides the data about the goods and the

transport units within the whole food supply chain, we also need data about all the variations of governmental policies and even data about the consumers' behavior.

For real-life companies and institutions, the data would have to be updated as soon as they change.

These are different terms for similar procedures. It's all about making sense of one's data that are produced with every business activity. It helps to recognize patterns, improve quality and return on investment and getting support for business and governmental decisions.

Once users have mastered the basic levels, they will be faced with disrupted food supply chains, locked down farms, closed food factories and closed borders in a pandemic world.

Like in every computer game, their goal is to master the challenge with the least damage for the ones they are responsible for (company, institution, population, etc.).

As stated before, such a game can also be played by professional logistics and supply chain experts in companies and institutions. The better the data repository is, the closer it gets to reality and can help to establish emergency plans and even can help to confer check decisions in times of a real crisis.

Conclusion

As we cannot look into the future, the only way to get prepared for it is to take a look at history and to forecast the most likely versions of such a future. In logistics and supply chain management it's mostly about changing transport and storage volumes and the distances the goods have to travel. Additionally, there is also a tight corset of cost-pressure, laws and regulations that decide about success or failure.

We have seen different forecast methods that can be applied to get an idea into which direction the way will go. If we know the scenarios, we can prepare ourselves for future changes. The best crisis managers are the ones with the appropriate experiences, who had already worked through different kinds of crises. A gamification approach could get the trainees at least halfway there, like flight simulator training for pilots. But it stands and falls with the quality of the game and this is for a great part determined by the quality and the completeness of the data provided. With such a highly sophisticated game and regularly updated real data, companies and institutions could also prepare their internal and external logistics and supply chains to mitigate the risks that future disruptions will bring them.

Gamification approaches in logistics and supply chain management, especially in the health care sectors and the food supply chains, can do their share to provide experts with the appropriate knowledge and experience and can help to countercheck emergency routines for their practical feasibility. It is about learning the business of logistics and supply chain management, but it is also to train some sort of gut-feeling when making decisions. A game responds immediately, showing the impact of the player's moves. But we do not want to limit ourselves to students and trainees. Highly sophisticated versions of such a game, equipped with the appropriate data repository could also help logistics experts in companies and institutions to get their business prepared for the next crisis and to act on an experienced level in the next crisis.

A pandemic, like the one we are just going through, puts health care systems under enormous stress, leading to a huge number of fatalities due to the shortage of material and personnel, rather than the virus itself. One of the major reasons for this was the disruption of supply chains due to quarantine measures. Although the prevention of any other pandemic in the future should be the highest priority of the world community, it is more than questionable if the root causes, deforestation and wildlife trade, can be stopped. So, it's a good idea to prepare ourselves for the next pandemic. Despite all the losses we saw during the last months, the COVID 19 pandemic is a great opportunity to prepare ourselves for similar crises in the future. Besides all the written documentation that is already available and is still to be written, we have to train our prospective and actual health care logistics experts with the best tools available to be pre-pared for the next crisis.

This can all be achieved with a comparatively low investment. Finally, a sophisticated gamification approach could show the volume of investment in prevention compared to the loss of life in the case of doing no prevention at all. Preventive measures cost money and this is why they are usually not very popular. Politicians will be busy to restore their country's economy after the pandemic and will have to face a lower budget within the next few years. So the most promises to better equip the health care system will soon be postponed and disappear. But a sophisticated gamification approach could show the low volume of investment in prevention compared to the loss of money in the case of doing no prevention. To give a rough idea about the ratios: by the end of July 2020, the SARS COVID 19 pandemic has cost at least $2.6. Trillion and might pile up to 10 times this amount.[59]

Anyways, just pumping more money into the system cannot be the wisdom of the end. A thorough digitization of the supply chains will even provide opportunities to provide better quality at the same costs. Every pandemic in the future will take their toll. But it is our decision if we want to give those a fair chance who have the physical condition to survive the disease.

Gamification approaches in logistics and supply chain management, especially in the food and health care sector, can do their share to provide experts with the appropriate knowledge and experience and can help to countercheck emergency routines for their practical feasibility. A pandemic, like the one we are just going through and a computer game, might be a contradiction at first sight. Work and games are often seen as a contrast. But in our digitized world we now have the tools to simulate close to real-life scenarios and to learn how to handle them - and this can be really hard work. We have learned a lot, wrote it down in documents and promised ourselves and all the others to do better in the future. A lot of these great plans will have been postponed and forgotten when we slide into the next pandemic. But we will still need logistics and supply chain experts who are trained in handling such a crisis. As discussed above: governmental policies are essential, but at the same time, the food industry has to take care of itself as well. It is about learning the business of logistics and supply chain management, but it is also to train some sort of gut-feeling to make the best possible decisions in times of a crisis. A computer game is an ideal training tool to achieve this.

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DECARBONISING THE DANUBE REGION: THE CASE OF BULGARIA AND ROMANIA

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Abstract

The objective of this research is to briefly present data on the decarbonisation progress in Bulgaria and Romania, members of the Danube Region. The significance of the European Green Deal implementation would lead to changes in the industrial models across the Danube Region and its labour market.

The research methods include content analysis, comparative analysis, induction, deduction, synthesis as well as graphic representation of empirical data. As a result, author summarizes basic data on the decarbonisation trends for Bulgaria and Romania which leads us to the conclusion that further actions are required to decarbonise these economies, prepare the labour markets for the new climate agenda and generate carbon-less output.

Key Words: *European Green Deal; Decarbonisation Actions; Danube Region*

JEL: *Q58; F38*

Introduction

Significant changes are anticipated across the modern international economic establishments due to already obvious and yet emerging climate concerns. This strategic goal to mitigate those negative impacts by human activity has been reiterated with the Paris Agreement[1] of 2015, an multi-government agreement and a decisive continuation of the United Nations Framework Convention on Climate Change (UNFCCC)[2] efforts to ensure sustainable and prosperous development for the next generations.

[1] Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104

[2] United Nations Framework Convention on Climate Change, May 9, 1992, S. Treaty Doc No. 102-38, 1771 U.N.T.S. 107.

1. European Green Deal – Programming the EU's Climate Neutrality

The European Union (EU) has ambitiously responded to those binding commitments through the European Green Deal[3]. The enhanced program proposal is a fundamental policy pillar in the action plan for the new President of the European Commission (EC) Ursula von der Leyen. The proposal comes as a support for the EU's commitment[4] to the Paris Agreement targets. The vision for industrial transformation and achieving net-zero emissions by 2050 is an expression of Commission's hopes for the EU to be a world leader in the climate neutrality and technical innovation. The European Green Deal is a progressive policy package of already existing (EU emissions trading system, ETS) and newly introduced measures (carbon border adjustment mechanism, Just Transition Mechanism, European Climate Law, Farm to Fork Strategy).

The road to climate neutrality would bring socio-economic changes which policymakers shall be reasonably prepared for.

EU needs to be especially prepared for that due to its high ambitions to lead the transformation to climate neutrality. The European economic recovery has been slow and uneven[5] after the global financial crisis in 2008 (Pezzuto, 2017) and the ongoing COVID-19 pandemic is already leaving its tremendous impact on multiple segments of the European industry, service sector and labour market. This would boost the regional disparities and EU's regional labour market[6] stabilisation requires the support of the EU funds (Arbolino and Di Caro, 2021). These regional differences across EU are expressed in income inequality[7] which peaked for the Eastern European Countries in the years around the financial crisis from 2008 (Vacas-Soriano and Fernández-Macías, 2018).

This is the reason why the implementation of the European Green Deal shall go in line with actions to address factors (which are difficult to quantify) such as social fairness, inclusiveness, and assistance to the affected labour force and those dependant on the previous industrial models. European Commission is suggesting appropriate measures to address these concerns with the Just Transition Mechanism with its Just Transition Fund[8].

An impact assessment[9] allowed more ambitious goal to the Commission which in late 2020 issued a proposal[10] for lifting up the targets for greenhouse gas emission reduction (GHG) by 2030 to 55% from the 1990 levels. The EC further highlighted the European Green Deal to be a top political priority to achieve fair transition with

[3] Von der Leyen, U. (2019). Political Guidelines for the next European Commission 2019-2024, A Union that strives for more: my agenda for Europe. 19 July 2019.

[4] Council Decision (EU) 2016/1841 of 5 October 2016, OJ L 282, 19.10.2016, p. 1–3

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[8] European Commission. Proposal COM/2020/22 final

[9] European Commission. Staff Working Document SWD(2020) 176 final

[10] European Commission. Communication COM/2020/562 final

prosperous society which would benefit from the functioning of resource-efficient and competitive economy. This has been incorporated in the revised proposal for European Climate Law[11], legally binding for the member states, based on Article 192(1) of TFEU. The latter proposal for a regulation on climate neutrality amends the existing Regulation (EU) 2018/1999.

2. Decarbonisation in Danube Region – Bulgaria and Romania

Danube Region requires special consideration prior to implementing the European Green Deal strategy. The significance of this region is both geographical, demographic (115 million people) and economic. Danube Region includes EU and non-EU countries which work together under the Danube Transnational Programme (DTP) funded by the European Territorial Cooperation (ETC) instrument, or commonly referred to as Interreg. Policymakers developed EU Strategy for the Danube Region (EUSDR)[12] in 2010 which was recently revised[13] to the new priorities and challenges to the EU.

The region is connected and diverse in terms of population, natural endowments, and economic performance. Nine of the Danube Region countries are EU members (Austria, Bulgaria, Croatia, Czech Republic, parts of Germany, Hungary, Romania, Slovakia, Slovenia), three are accession countries (Bosnia and Herzegovina, Montenegro, Serbia) and two are neighbouring countries (Moldova, parts of Ukraine). Macroeconomic differences are valid concern when it comes to decarbonising this region – its economic diversity (different development stages) are inherent features even for the nine EU member states which are supposed to converge towards each other. Those disparities could pose challenges to region's successful decarbonisation and swift transition to climate neutrality.

The EU member states are obliged to submit 10-year action plans (National Energy and Climate Plan, NECP) under the Clean energy for all Europeans package and Regulation on the governance of the energy union and climate action (EU)2018/199. Bulgaria and Romania did so by outlining their current progress and perspective for actions in the 2021–2030-time horizon. The NCEPs must include countries' intentions on contributing to climate targets for energy efficiency, RES, GHG emissions, interconnections, and, of course, research and innovation. An overview of the present situation would help us understand the intentions and the perspectives of those two Danube countries.

[11] European Commission. Communication COM/2020/563 final

[12] European Commission. Communication: European Union Strategy for Danube Region COM(2010)715 final

[13] European Commission. Staff Working Document SWD(2020) 59 final

Table 1. Parameters of the National Climate Action Plan – Bulgaria, 2020

	Progress Reported	2030 Target	2020 Target
BG - National Targets			
GHG emission reduction compared to 2005, non-ETS	21%	0	20%
Share of RES in gross final consumption of energy	20.5%	27.09%	21.4%
Energy Efficiency (Mtoe) Primary consumption Final consumption	18.34 9.9	17.5 10.3	16.9 8.67
Electricity network - interconnectivity	7.1%	15%	11.3%
Research and Innovation (% of GDP)	Reaching 1% of GDP by 2025	Not specified	-

Source: the authors, based on the European Commission data

Table 2. Parameters of the National Climate Action Plan – Romania, 2020

	Progress Reported	2030 Target	2020 Target
RO - National Targets			
GHG emission reduction compared to 2005, non-ETS	14%	-2%	19%
Share of RES in gross final consumption of energy	23.9%	30.7%	24%
Energy Efficiency (Mtoe) Primary consumption Final consumption	32.6 23.6	43 30.3	32.3 25.7
Electricity network - interconnectivity	9.3%	15.4%	10%
Research and Innovation (% of GDP)	Not specified	Not specified	-

Source: the authors, based European Commission data

Looking at the data on Bulgarian NECP, we could say that the country would meet the 2030 GHG emissions reduction target. Bulgaria is one of the best performing countries when it comes to share of renewables in gross final energy consumption. The country overachieves its 2017 and 2018 target. Romania follows suit too. This is aligned with the overall RES increase of 18% across EU member states in 2018. Bulgaria needs to reach 27.09% share of RES by 2030.

Commission finds this contribution to the climate goals as adequate as, and even more ambitious than the draft plan for 25%. Bulgaria's contribution to the EU's 2030 target for energy efficiency is 17.5 Mtoe for primary energy consumption (increase from the initial plan) and 10.3 Mtoe for final energy consumption. It is recommended to strengthen the energy efficiency principles further to deliver more ambitious results – actions such as renovation of residential and non-residential buildings for energy saving purposes are welcomed. Increasing market access and interconnectivity is already at implementation stage for the Bulgarian regulators. The NECP plans initiatives (some are ongoing) for day-ahead and intra-day market coupling with Romania and Greece.

In regard to the main decarbonisation targets (GHG emissions reductions), Bulgaria demonstrates abilities to achieve and even exceeds its target. The RES indicative trajectory for by 2030 is aligned with the EU goals. Further actions are recommended for supporting renewable self-consumers and renewable energy communities with specific legislative procedures and measures. Bulgaria defines support for grid integration, smart grids and storage systems as a priority. More detailed plan for scientific research and innovation investments would be desirable – sources of investment, blending with other financial instruments, public private partnerships, cost methodology. National efforts shall be focused on the Just Transition and developing specific programs/ instruments for response - the country has carbon-intensive coal sector which will experience potential job losses as a result of the transition.

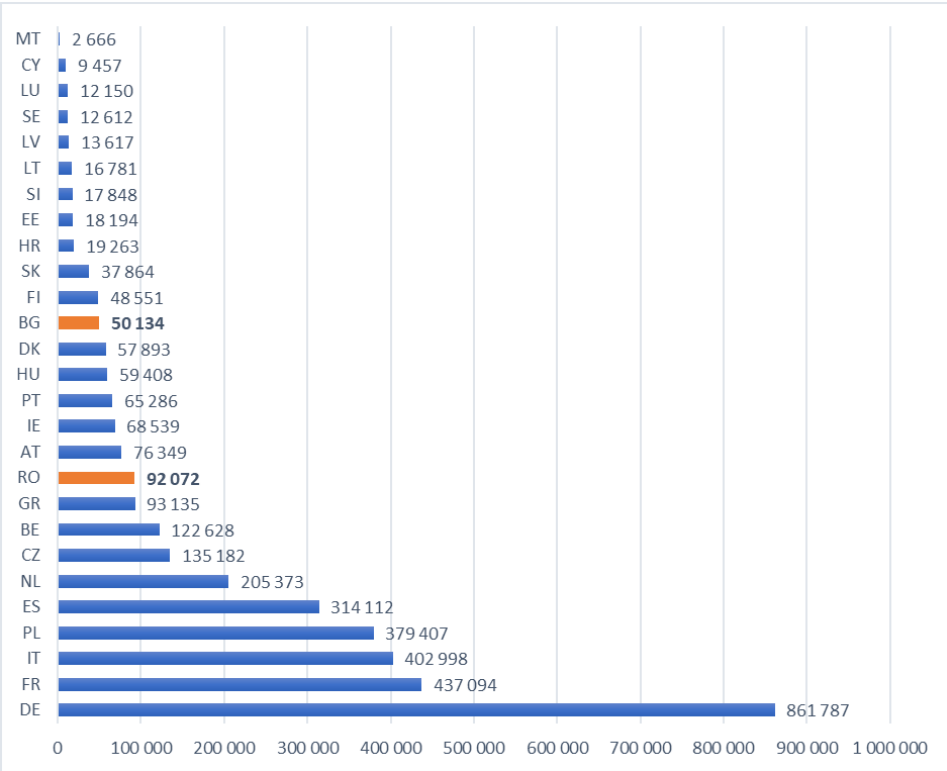
Romania's binding target for non-ETS GHG emissions reduction by 2030 is -2% of the 2005 levels. The plan does not include possibility to use the flexibility from LULUCF to share the efforts for decarbonisation. On the other hand, Bulgaria plans to utilize the LULUCF and the emissions generated will not exceed the emissions removed. A look on the share of RES in gross final consumption of energy shows that Romania sets 30.7% target for 2030. This is below the Commission's estimations of 34%. The country has increased its energy efficiency ambitions to 32.3 Mtoe.

The energy efficiency in the final energy consumption is 25.7 Mtoe which shall be further increased. Romania would exceed with 3-4% renovation rate, the long-term renovation strategy is pending, however. Regarding interconnectivity, Romania is set to achieve slightly higher rate than Bulgaria – 15.4%. Strong contribution to those targets would come, not by surprise, from the electricity production sector. Romania is supposed to reach 50% of the electricity consumption provided by RES by 2030 – hydro, wind, solar and other sources. Especially promising would be the wind production and the solar generation which will increase couple of times in absolute terms as per the NCAP.

The document presents 12 current and 40 planned policies and measures. Further actions are required when it comes to decarbonisation – similarly to Bulgarian plan,

more details are needed for the utilization of biofuels, renewable self-consumption and renewable energy communities policies. Romania needs to present energy and climate-related national funding targets for research, innovation and competitiveness post-2020 with quantitative measures and planned priorities. Another commonality with Bulgaria would be the Just Transition measures, on a different scale perhaps. Regions of Hunedoara (% of the mining jobs in Romania) and Gorj (biggest coal-fired power plant) are expected to be most impacted by job losses due to cleaner energy solutions implemented. Further analysis is required on the social costs as well as plan on requalifying and compensating the labour force.

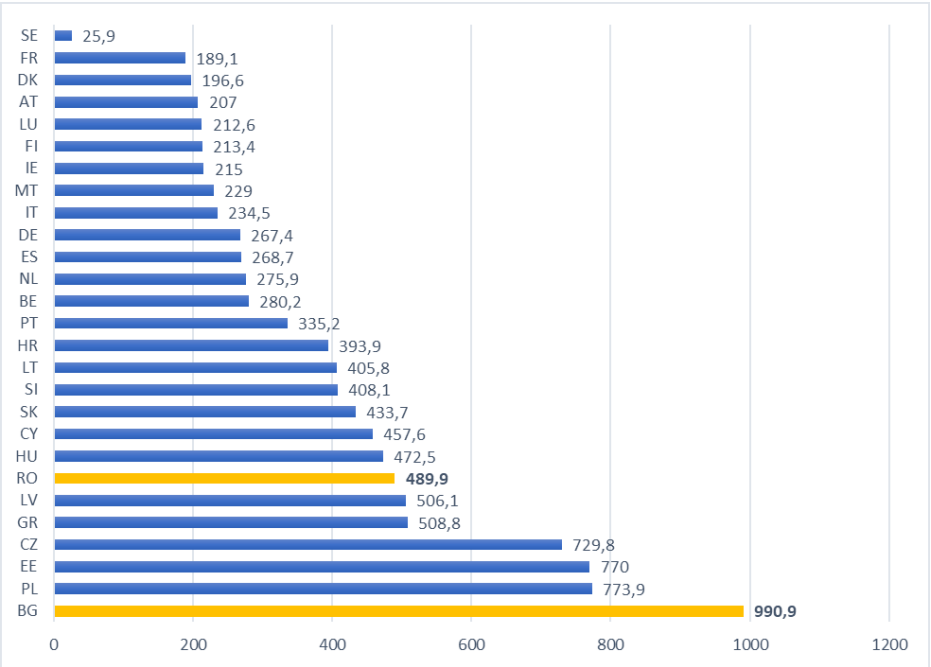
The necessity for continuous decarbonisation efforts in the sensitive sectors such as coal and mining are confirmed through empirical data on the total GHG emissions for 2018 (international aviation included).



Source: the authors, based on EEA data

Figure 1. EU-27 Total net GHG emissions with international aviation for 2018 (CO_2 equivalent)

We could recognize that Bulgaria and Romania are emitting significantly less as compared with Germany, France, Italy, Poland and Spain. This is not the case when we review the GHG emissions per GDP output for the same year of 2018 – especially for Bulgaria.



Source: the authors, based on EEA data

Figure 2. EU-27 Total net GHG emissions per GDP with international aviation in 2018 (kt CO2 equivalent)

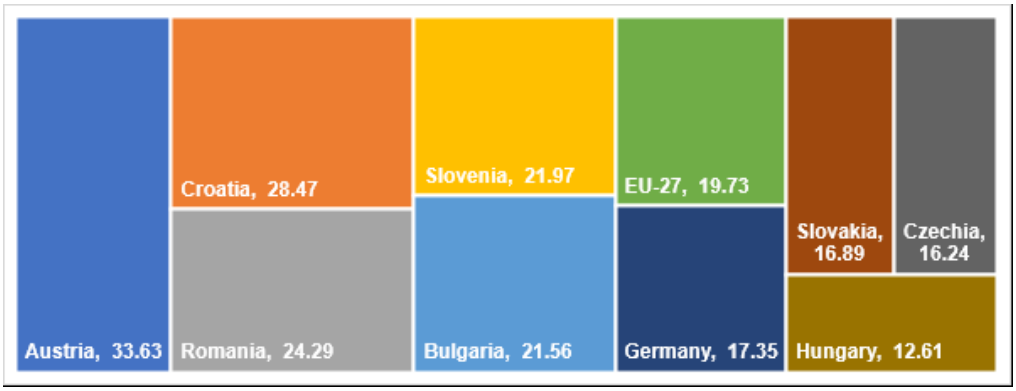
The above data demonstrates the strong necessity for those two economies of the Danube Region to continue their way of decarbonisation, and most importantly, to prepare adequate policy mix for just transition and market preparation for the upcoming changes (should all policies proceed as planned). To verify our conclusion, we could seek same relation with regards to energy intensity indicator for those two countries in comparison with the EU-27 and other EU countries from the Danube Region.

Table 3. Energy intensity of GDP in chain linked volumes (kg Oil eq. per €1000)

	2015	2016	2017	2018	2019
Bulgaria	451.65	425.83	425.86	414.59	396.43
Czechia	244.84	236.55	234.66	228.31	219.86
Hungary	228.42	226.44	226.74	215.50	205.98
Slovakia	210.16	206.79	211.76	201.68	196.86
Romania	221.00	210.47	206.81	198.24	187.73
Croatia	190.16	185.39	185.56	176.60	174.04
Slovenia	176.80	178.35	175.78	168.62	159.86
EU-27	129.16	127.80	126.89	123.40	119.48
Germany	114.95	113.26	110.88	106.95	103.07
Austria	108.18	107.55	106.92	101.83	102.45

Source: the authors, based on Eurostat data

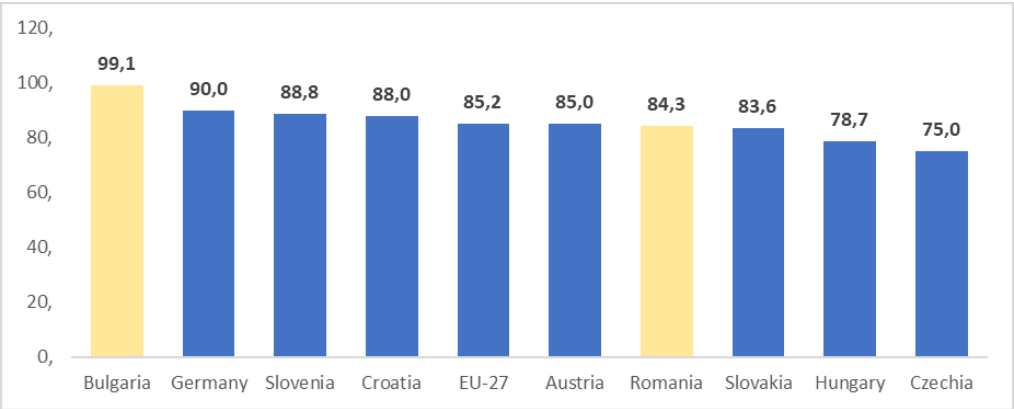
Bulgaria is leading in the region with high level of energy intensity, followed by Czech Republic, Hungary, Slovakia and Romania. These levels are way above the EU-27 average with Germany and Austria outperforming the rest of the Danube Region EU countries.



Source: Authors, based on Eurostat

Figure 3. Share of renewable energy in gross final energy consumption for EU Danube Region countries, 2019

Bulgaria and Romania perform well with the RES as a share of the gross final energy consumption in 2019 (24.29% for Romania and 21.56% for Bulgaria, which is above the EU-27 average of 19.73%). This is even more satisfactory when compared with 2018 RES levels – Bulgaria had 20.59% and Romania reported 23.88% in the gross final energy consumption. While this is an optimistic sign, data below shows for Bulgaria particularly high output of GHG emissions related to energy consumption in 2018 (the latest reported):



Source: the authors, based on Eurostat

Figure 4. Greenhouse gas emissions intensity of energy consumption index for EU Danube Region countries (2018, 2000=100)

Members of the region differ with regard to the GHG emissions in energy consumption – Bulgaria has the highest rate of 99.1 while Romania performs better, and it is below the EU-27 average with 84.3. Germany is right after Bulgaria – it is impractical to compare those two countries due to the significant differences in their market, industry and energy needs.

The latter demonstrates our initial claim that Danube Region is vastly diverse in terms of economy and existing industrial structures. Further analysis shall be conducted by the stakeholders to prepare this macro-region for the European Green Deal transition both economically, technologically, and socially.

Conclusions

Implications of the European Green Deal and its impact on certain sectors would lead to transformation of several economic sectors. This transformation to climate neutrality might be challenging for the Danube region due to its diversity in terms of socio-economic characteristics and industrial models. The data briefly reviewed in this paper for the Danube Region is related to Bulgaria and Romania in particular. Those two countries do reduce their GHG emissions and include more energy from RES in their final energy consumption. Further decarbonisation in the energy sector, boosting the energy efficiency and stimulating net-zero technologies would be beneficial for Bulgaria and Romania. Select indicators on sustainability of the Danube Region suggest that additional scientific research and practical efforts by the policymakers would be required to prepare this significant to the EU region for decarbonisation and climate neutrality.

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ASSESSING THE COVID-19 IMPACT ON BULGARIAN SMES

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Abstract

The article examined the impacts of the COVID-19 pandemic, focusing on real economic activities and related effects for SMEs. The Bulgarian economic growth and business activity were affected and macroeconomic environment immediately has changed. The pandemic was unpreceded asymmetric shock for Bulgarian economy. The COVID -19 caused a major shock for SMEs because of their lower resilience to the external shocks. The Bulgarian government has responded to the crisis by adopting emergency economic and social measures focused on support liquidity of the economic entities and on preventing staff layoffs. The purpose of the paper is to identify the effects of measures taken on the efficiency of the SME in Bulgaria. The measures targeting to the survival of SMEs and social measures for preserving household incomes and for helping employees who are laid off are funded from national budget and EU programs. As a result of adequate and timely measures in terms of employment and income subsidies, the unemployment rate has not increased significantly and is lower than the EU average. The benefits of a package of the economic and social measures cannot been assessed accurately, as well as for the most affected sectors of the outbreak pandemic crisis because of insufficient empirical evidences and ongoing emergency.

Keywords: COVID-19, asymmetric shock, resilience

JEL: *L, M2*

Introduction

The Covid-19 pandemic was unprecedented shock for Bulgaria and global world. The COVID 19 pandemic has destroyed the business conditions for SMEs[1]. The total number of active enterprises is 419 681. Share of SMEs is 99,8% and their share in total employment is approximately 75%. It is important to note that 70 percent of the MEs are engaged in total production. Share of micro enterprises is highest it is 92% in total number of enterprises. Share of small enterprises is 6% and share of medium enterprise is less it is about 1%. Micro and small enterprises are crucial component of Bulgarian economy and they contribute closely 60% to GDP. The highest number of micro enterprises is in retail trade and services.

The business activity of SME is determined by the business environment. They are sensitive to changes in the business environment. Business environment is defined in general as a complex of internal and external factors that influence on business activity such as customers' needs and behavior, supply and demand, management, governmen-

[1] The provision of criteria that defining categories of SME set in Small and Medium Enterprises Act (art.3 and 4).

tal regulations, innovation in technology, market trends, economic changes, etc. The growth of SMEs is influenced by changes in the business environment (Zhang, van Doorn & Leeflang, 2014)[2]. Nowadays the business environment and SME competitive advantages is vulnerable to economic and financial crises because of the globalization and fast development of the global value chains. The internal environment factors composed of managerial knowledge and financial capacity, organizational of producing process, entrepreneurial competency, technological capabilities and organization of working process. The external factors are outside economic variables that they affect the development and growth of SMEs. These factors include macroeconomic development, fluctuations in business cycle, government policy, customer expectations, market competitors and etc. In this context it can be presumed that pandemic crisis impact negatively on the business environment. All factors for business environment were affected by the pandemic crisis. The management of enterprises has affected indirectly by the COVID 19 as a consequence of imposed lockdown. Managerial skills and changes in work processes were crucial for protecting enterprises against bankruptcy. The change in organization of work processes and adaptive measures made enable SME to preserve the business. Not all businesses were flexibility in dealing with the shocks and shift to teleworking, but this transformation for small and micro enterprises was relatively expensive because of the low level of digitalization. Accessing and adopting new technologies play important role for diminishing the negative impact of COVID 19 outbreak on the business activities. The IT facilitates business transaction, and enhance the overall performance of SMEs, leading to reduce the operating expenses. (Levey & Powell, 2000[3]).

The positive side is that pandemic has shown digitalization as new opportunities for sustainably of firms and. (Cirillo and Zayas 2019) [4]. The crisis shows that the managers understood the role of the digital technologies for further development of the SMEs. Therefore, the SMEs needed to be encouraged to intensify digitalization and introduction of ICT technologies. Therefore, the SMEs is needed to be encouraged to intensify digitalization and introduction of ICT technologies. Digitalization and ICT technologies is pointed out as a main priority in the Bulgarian national program" Competitiveness and Innovation" for coming period (2021-2027).

Direct effect of pandemic was on production and sales in sectors, where activity was failed partly or completely during the emergency. The severely vulnerable to the pandemic are companies in retail trade, services, transport and tourism, most of them are very close to failing. Government policy and measures addressed to support liquidity of SMEs were the main factors positively impact on protection of the small businesses from bankruptcy.

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1. Mitigation the impact of COVID-19 crisis: EU policy response to the COVID-19 pandemic

In response to COVID 19 outbreak the EU has taken actions directed to help the business. The EU policy combat pandemic consists of a variety of measures and initiatives that are designed in the form of targeted programs funding through EU budget, European Investment Bank[5]. The initiative of the EIB to create a pan-European guarantee fund of EUR 25 billion with a focus on financing SMEs. The initiatives are implemented through national develop/promotional banks.

At the beginning of COVID 19 outbreak was adopted Temporary Framework for State aid measures. The focus of the proposed measures is support employment, business and public health. The rules state aid was changed and set out possibilities member state to ensure liquidity and access to finance in order to recovery the economy. The temporary framework for the state aid defines provisions related to Block Exemption Regulations[6]. It points out that aid can be in the form of direct grants, tax and payment advantages, guarantees, loans and equity, interest rates subsidy for loans. The total nominal value of state aid remains below the overall cap of EUR 800 000 per undertaking. The loans will not exceed 25% of beneficiary's total turnover the grants The EU has mobilized financial resources from European Structural Funds and European Investment bank.

The legislative acts were changed with purpose to facilitate the member countries for tackling the COVID 19 crisis. The main ESFs' regulations[7] have amended and the amendments allowing flexibility in the use of EU funds such as transfers and reallocation between Structural Fund programmes.

The EU rules allow provision temporary measures that are directed to support working capital of SMEs, as well as to investment in products and services.

The procedures for receiving the grants were simplified. The financial instruments can use to provide support in the form of working capital to SMEs. The European Union Solidarity Fund was established to provide financial assistance in case of occurrence natural disasters[8].

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[5] The EU financial measures (excluding ECB monetary interventions) have a value of over €1 363 billion14; split into grants (€430 billion) and loans (€933 billion). https://www.eca.europa.eu/Lists/ECADocuments/RW20_06/RW_Economic_response_to_Covid19_BG.pdf

[6] Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (General Block Exemption Regulation)

[7] Amendments refer to Regulations (EU) No 1301/2013, (EU) No 1303/2013 Regulation Of The European Parliament and of the Council amending Regulations (EU) No 1301/2013, (EU) No 1303/2013 and (EU) No 508/2014 as regards specific measures to mobilize investments in the healthcare systems of Member States and in other sectors of their economies in response to the COVID-19 outbreak (Coronavirus Response Investment Initiative) https://data.consilium.europa.eu/doc/document/PE-5-2020-INIT/en/pdf and
https://www.consilium.europa.eu/en/press/press-releases/2020/04/09/report-on-the-comprehensive-economic-policy-response-to-the-covid-19-pandemic/

[8] Regulation of The European Parliament and of The Council amending Council Regulation (EC) No 2012/2002 in order to provide financial assistance to Member States and to countries negotiating

The EU budget 2021-2027 was updated. The next EU Multiannual Financial Framework (MFF) will play a crucial role in the economic recovery. It is amounted EUR1.8 trillion together with Next Generation EU. Next Generation EU is a recovery instrument and approximately 90 % of funding will be allocated to a new mechanism the Recovery and Resilience Facility (RRF) related to future investments.

A component of Next Generation EU is REACT-EU amounting to EUR 47.5 billion[9] and it is additional funding for recovery affected economic sectors and for job maintenance. The scope of REACT-EU would include structural measures to foster innovation, digitalization and internationalization aimed to restore the activity of SMEs. Two procedures will be available for Bulgarian economy one for recovery and growth of SMEs, with an indicative budget of BGN 200 million and the other procedure towards digital and green innovations with an indicative budget of BGN 191 million.

The European Commission proposed a new financial instrument named **S**upport to Mitigate Unemployment **R**isks in an **E**mergency (Sure)[10]. It is a temporary instrument[11] that would ensure financial assistance during the time of the crisis, in the form of loans granted on favourable terms from the EU to Member States, of up to EUR 100 billion.

In the context of pandemic European Central Bank undertook supportive monetary policy actions targeting at easier provision of credit to economy through launch a EUR 750 billion Pandemic Emergency Purchase Programme (PEPP).

2. Macroeconomic landscape in a pandemic situation

Bulgarian economy did not remain isolated from the ongoing processes of the global spread of the COVID-19 pandemic. The pandemic crisis affected the Bulgarian economy through disruption of the supply chains and lower consumer demand. The COVID-19 crisis is a complex and unusual shock to the economy that combines elements of supply, demand, and productivity shocks (IMF working paper,2020)[12]. On the supply side, SMEs are faced reduction of supply labor and shortages of raw materials and intermediate goods. Temporary supply shock caused by pandemic has reduced output and employment[13].Furthermore, supply chains are interrupted leading

their accession to the Union that are seriously affected by a major public health emergency

[9] European Commission EU's Next Long-Term Budget & NextGenerationEU: Key Facts And Figures, November 2020 https://ec.europa.eu/info/sites/info/files/about_the_european_commission/eu_budget/mff_factsheet_agreement_en_web_20.11.pdf

[10] SURE is a new instrument for provision of loans to affected Member States, total amount is € 100 billion to preserving employees and their income. in the form of loans from the EU to affected Member States

[11] The provision of the financial assistance is under Article 122 of the Treaty on the Functioning of the European Union.

[12] Pragyan Deb ; Davide Furceri ; Jonathan David Ostry ; Nour Tawk, The Economic Effects of COVID-19 Containment Measures, IMF Working Paper No. 20/158, mf.org/en/Publications/WP/Issues/2020/08/07/The-Economic-Effects-of-COVID-19-Containment-Measures-49571

[13] Veronica Guerrieri, Guido Lorenzoni, Ludwig Straub, IvánWerning Macroeconomic Implications of COVID-19:Can Negative Supply Shocks Cause Demand Shortages?, IMF, conferen NBER Working Paper Series, April ,2020

to shortages of parts and intermediate goods. On the demand side, a loss of demand caused by low consumption and spending. The imposed restriction on the economic activities and lockdown leads to liquidity shortage uncertainty of the business revenues and investments. The liquidity shortage during the crisis can be solve by bank financing or state support. In addition, labor productivity has declined in the short run, because the workers are forced to leave their jobs, they are laid off, either temporarily or permanently because of lockdown and temporarily pandemic restrictions. Average reduction in revenues of the SMEs are in a range 20% to 50%, losses for tourism, retail trade and transport are higher than other economic sectors.

As a consequence of pandemic crisis the International Monetary Fund (IMF) predicted a deep global recession. The global economy will drop down by 3% and the economy of the Eurozone will decline respectively to 7.5%[14] in 2020. Expectation of the European Central Bank (ECB) is the Eurozone economies will contract between 5% and 15%.[15] The World Bank forecasted the global economy slowdown up to 5,2% in 2021. IMF has projected the European economy to shrink by 7 percent in 2020 and respectively by 4.7 percent in 2021[16].

Bulgarian GDP growth has declined by 5.2% in the third quarter of 2020 compared to the same quarter of 2019. In the EU- 27 a decrease was to 4.2%[17]. Gross value added (GVA) in the third quarter 2020 reduced by 4.4%. The most affected sectors from COVID 19 pandemic (retail trade, tourism, services, logistic, industry) have not contributed to CVA.

Unemployment rate was estimated at 6.8% in November 2020, it is slightly higher than before second COVID wave. However, the unemployment trend was affected negatively by lockdown but the rate being currently estimated to decrease to 4.5% in 2021. The most jobs in economy have been retained due to measures undertook by government.

The total public debt is expected to increase by close to 25.7 % of GDP at the end 2020. Over 2020, the debt/GDP ratio raised by 5%. Long-term liabilities amounted 52.6% of GDP. The state debt is higher by 12,6% compared to the end of 2019.[18] The GDP to debt ratio increased but it is still comparatively lower than the EU-27 where it is close 80%. The gross external debt of the general government sector reached 12.3% of projected GDP in third quarter 2020 and it is by 3.5 percent more than in the same month of 2019. Total external debt amounted to EUR 37.9 billion or 62.2% of GDP, with intercompany lending also making a positive contribution to growth. The increase of the public debt at the end of 2020 due to the explosion of public spending and applied fiscal measures.

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[14] IMF, World Economic Outlook, April 2020: The Great Lockdown
April 2020, https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020

[15] https://ebi-europa.eu/wp-content/uploads/2020/05/Gortsos-Ringe-eds-Pandemic-Crisis-and-Financial-Stability-2020-final.pdf

[16] IMF, Europe Whatever It Takes: Europe's Response to COVID-19, World Economic and Financial Surveys
Regional Economic Outlook, October 2020

[17] NSI

[18] Ministry of Finance and Bulgarian National Bank

The manufacturing industry declined by 10.9% in 2020. A decrease in turnover more 20% in short term was observed in most of Bulgarian economic sectors. The significant affected by pandemic are retail trade, tourism, transport and services. Their revenue flow sharply decreased and they were not enable not pay their suppliers and employees. The revenues from sale for industry declined by 43,0%, retail trade by 48,3%. The losses of tourist summer season were nearly 80%. The pandemic has disrupted foreign trade flows; the export fell down by 7.2% compared to the same period of 2019. The total foreign trade balance was negative, the export amounted to EUR 20582,0 million and the import EUR 22110,8 million, the trade deficit was of EUR 1528,7million in period January – September 2020. The reopening the business and relaxation of measures had positive influence for the recovery the business activity in the second quarter of 2020.

The economic consequences will be severe in countries where the COVID-19 attack was conducted on a large scale. The expectations are advanced developed countries in Europe (France Italy, Spain) to enter in deep recession as a consequence of outbreak COVID -19. The European economic slowdown could injure the global supply chains and would enhance the impact of pandemic on investments, trade, production, international trade and financial markets in a long run.

The short analysis of the main macroeconomic indicators demonstrate that the performance of Bulgarian economy has changed resulting of lockdown and pandemic business restrictions. The state support will continue in 2021 and needed financial resources expect to come from EU recovery programs and European structural funds that will be used to revive the investments and to recover the SMEs' activity. The substantial EU funds have enabled the Bulgarian government to maintain low public debt and to ensure the protection of the small businesses from bankruptcy. Substantial EU resources was an opportunity to maintain low public debt and to ensure survival of small and micro enterprises[19].

3 Supportive state assistance to recovery SMEs from pandemic

The SMEs have faced severe losses in revenues and cash-flow problems due to reduced aggregate demand and low purchase consumer propensity. In response to pandemic crisis the Bulgarian government have taken a package of measures funded by EU programs and national budget. The measures aimed to overcome the negative effect of the pandemic and to accelerate the process of surviving the small business. The mitigation policy that the Bulgarian government has been pursuing started after a decline in economic activity that was caused very fast by unprecedented asymmetric shock of outbreak COVID -19. The measures were mainly focus on liquidity support and preservation the number of employees. The measures can be group in following categories: fiscal measures - government spending for keeping employment, subsidies SMEs (decrease the tax in most vulnerable sectors to COVID-19 outbreak and increase the social contribution); grants for SMEs funded by European Structural Funds

[19] OECD Economic Outlook, Volume 2020 Issue 2, December 2020, https://www.keepeek.com//Digital-Asset-Management/oecd/economics/oecd-economic-outlook/volume-2020/issue-2_39a88ab1-en#page132

and financial instruments providing guarantee schemes on loans (introduction national program for improve the liquidity position of private sector through working capital and investment loans)[20].

The government actions for supporting SMEs were implemented through direct grants and loans guarantee schemes that facilitating access to external funding. Grant procedures for SMEs was addressed to cover a lack of liquidity and the shortfall of working capital costs such as raw materials, fuels, labor, expenses for external services (including overheads) and others. The requirement for business is the purchase of raw materials and consumables to be used in production and service activities. The government used EU and national funds for implementing the measures for solving short term cash-flow and liquidity problems of the SMEs.

The budget spending cover mainly social assistance to unemployed persons and for the most vulnerable households (low income families and retirees).

Immediately after lockdowns subsidizing employment was introduced for avoiding the distortion on the labor market. The Bulgarian government introduced wage subsidies support schemes for preserving employment and guarantee the income of employees in the sectors most affected by the coronavirus outbreak known as the "60/40" aid scheme. The scheme has funded by state budget and co-financed by the European Social Fund. Such measure brought benefits for keeping employees and maintaining their salaries. The Bulgarian government help to preserve employment in affected sectors in the form of loans. The government wage subsidies have contributed to prevent a significant increase of unemployment in uncertain conditions of the COVID 19 outbreak. Rises the public wages and payments for unemployment have ensured to some extent the stability of household incomes.

The challenges for SMEs are not only human resource development and market access but also in the areas of financing investment and working capital. The government provides financial assistance, in the form of grants, loans granted on favourable terms (guarantee schemes). The SMEs have needed of the state assistance because most of them have faced logistical challenges, demand disruptions, although the severity has differed across firms and industries.

The government has initiated measurers for SME in the form of grants. The Ministry of Economy (National program for competitiveness and innovation) developed a range of measures addressed to the liquidity needs of SMEs and to help to continue their activities during and after the pandemic. The grants were targeting to refund the working capital shortage. Support to small and micro-companies under the Operational Program "Innovation and Competitiveness" was eligible for micro and small companies which have a decline of at least 20% in its turnover of lockdown period 2020. The grant support is a minimum amount of BGN 3,000 and a maximum of BGN 10,000. The total budget of the measure is around EUR 89 million. There was a certain delay in receiving grants from the beneficiaries (micro and small enterprises) due to the administrative procedures and checks that are requirements for payments under the European Structural Funds.

[20] EIB Group ensured financing measures to €28 billion:

The scheme was accessible to for micro and small enterprises active in different sectors. It is estimated that approximately 23,000 micro and small enterprises will benefit from this support. Separate scheme[21] was developed and addressed to medium-sized enterprises and may be around 1200 companies will receive public subsidies. The total budget of the measure is closely EUR 80 million.

Additional state support was accessible for companies in most affected sectors as transport, tourism and retail trade.

Table 1. Framework of main supportive grants for SMEs

Procedures	Grants Amount (BGN)
Support for micro and small enterprises (grant a minimum 3000 to a maximum 10000 BGN).	173 000 000
Support for medium enterprises (grant minimum 30000 to a maximum 150000 BGN).	233 645 650
Support small cap enterprises (with a turnover of over BGN 500,000 to overcome the economic consequences of the COVID-19 pandemic). Eligible grant base on simplified cost at 50 000 BGN per project. **	78 233 200
Support SMEs for coach and business services	30 000 000
Support for SMEs in the tourism sector to overcome the economic consequences of COVID-19	10 779 150
Support employees measures 60/40	585 000 000

Source: Ministry of Economy

Note:

** this measure covers losses of suspended activities fitness centers, restaurants, entertainment facilities, stores, trade centers and travel agencies. It is aimed at economic entities units that have the potential to recover and overcome the economic consequences of the COVID-19 pandemic. The state aid will be defined on the basis of the percentage of turnover without VAT of the enterprise / the previous year, that corresponding to the period of temporary anti-epidemic measures.*

*** the grants are being divided proportionally by economic sectors of economic activity taking into consideration the number of small enterprises with a turnover of over BGN 500,000 in each of the sectors.*

A guarantee scheme known as "Intermediated SME Loan Guarantee Program" was provided by the state Bank (Bulgarian Development Bank). The Bank provides guarantees in favor of commercial banks, which are in a form of loan portfolios to micro, small, medium and large enterprises affected by the COVID-19. The guarantee port-

[21] The requirements for grant support medium –sized companies are to have decline of at least 20% in its turnover for one of the months in 2020 after February 2020 compared to the arithmetic average monthly turnover in 2019. The total budget of the measure is around EUR 80 million.

folio schemes may ensure good conditions to borrowers for investment and working capital through reduction of collateral requirements to 50% of the amount of loans and low applicable annual interest rate. The bank support people deprived of the opportunity to work due to the COVID -19 pandemic by a program for guarantee interest – free loans in protection. The total amount of the loans is up BGN 4500 at zero interest rate, no requirement for collateral, 5 years' repayment period

Portfolio guarantees loans scheme for SMEs provided by the Fund of Funds through commercial banks. The aim of the scheme is to securing loans in favorable conditions (low interest rates, grace period of up to 24 months and low collateral requirements).

A brief analysis shows that COVID-19 hits micro and small enterprises. At the time of the first wave the most of enterprises work below their production capacity. The pandemic impact severely on SMEs in some sectors as logistic, tourism, retail trade and industry in which the measures were addressed to preserve employment. It is contrast to the financial crisis 2008-2009 where the efforts were focused on assistance sustainability of banks and financial sector.

The fiscal measures may impact negatively on the budget deficit. There is a risk of an increase the budget deficit due to decline economic activity, exceptional public spending granted to business and expected low tax revenues.

The relative size of fiscal measures varied significantly across European states. The applied measures combat COVID -19 are not comparable as there is a disparity in terms of Gross Domestic Product per capita and financial capacity of the domestic economy.

The amount of Bulgarian fiscal package is around 2.2% of GDP, it is less in comparison with EU member countries. Germany recorded the largest amount of measures to 43 % of GDP, followed by Italy (37 %), Lithuania (29 %), France (23 %) and Spain (22 %). Smaller amount of measures is accounted for Romania 4.7% of GDP, Slovakia 5%, Estonia 6%, etc.) [22]

According to the European Audit Court report countries with relatively lower GDP per capita adopted smaller fiscal packages per capita, while countries with GDP per capita above the EU average adopted more varied fiscal reactions that did not appear to depend on the size of GDP. [23]

Conclusions

The current economic crisis is established as a crisis of demand and supply, caused by the effects of the pandemic. The current crisis is substantially different from the financial and credit crunch (2008-2009). This crisis was unexpected and immediately arise asymmetric shock that affected on the business activity and global supply chains due to simultaneous lockdowns of the economy in most countries in the world.

[22] See European Court of Auditors Risks, challenges and opportunities in the EU's economic policy response to the COVID-19 crisis https://www.eca.europa.eu/Lists/ECADocuments/RW20_06/RW_Economic_response_to_Covid19_EN.pdf

[23] European Court of Auditors Risks, challenges and opportunities in the EU's economic policy response to the COVID-19 crisis pp. 20, report December 2020 https://www.eca.europa.eu/Lists/ECADocuments/RW20_06/RW_Economic_response_to_Covid19_EN.pdf

The direct effects of restrictions were a decline in employment, in output and revenues, lack of working capital in most of micro and small enterprises. The SMEs faced up logistical issues and disrupted international trade flows. Despite the implemented measures many companies in the severely affected sectors (tourism, retailed trade, food service) facing bankruptcy and they would difficult to restore viability. However, the state assistance succeeded to save the level the average wages and salaries of employees in private sector and to prevent the consumption slowdown.

The economic effects of the pandemic on the economy are hard to be predicted there is a degree of uncertainty related to economic prospects of the EU. The Bulgarian economy will be gradually recovered in next years but private investment, consumption and household income will restore slowly.

The consequences of the pandemic may raise risks to the Bulgarian economy resulting from the uneven economic growth in the Member States and low investment and disrupted global value chains.

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TRADE FINANCE AND COVID-19

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Abstract

Being at the low-risk, high collateral end of the credit spectrum trade finance plays a significant role in 80% of world trade. The market proved to be vulnerable to financial shocks. The current COVID-19 crisis is additionally sharpening the barriers in trade finance and in a number of strategic and important directions from the economic development. The economists argue that the uncertainties as a result from the pandemic will provoke greater demand for trade finance products over the medium term. It is supposed that the effects will be stronger than the consequences following the global financial crisis due to the extensive and deep economic effects of COVID-19.

Keywords: *Trade Finance, Documentary Credit, Documentary Collection, Cash-in-advance, Open Account*

JEL: *F1, F3, F4, G2*

Introduction

The economic estimations show that the global financial crisis in 2008-2009 became a reason for USD1trilion shortfall in trade finance in G20 agreeing on a package of USD250 billion in the form of guarantees and insurance to back the trade flows at the 2009 London Summit. Being at the low-risk, high collateral end of the credit spectrum trade finance plays a significant role in 80% of world trade. The market proved to be vulnerable to financial shocks. Regardless of all hard measures the provisions of trade credit did not restore until 2012. At the same time micro-, small- and medium-sized enterprises (MSMEs) experienced difficulties securing access to trade credit the last 10 years. Global banks refused financing of around 50% of MSME (ICC, 2018).

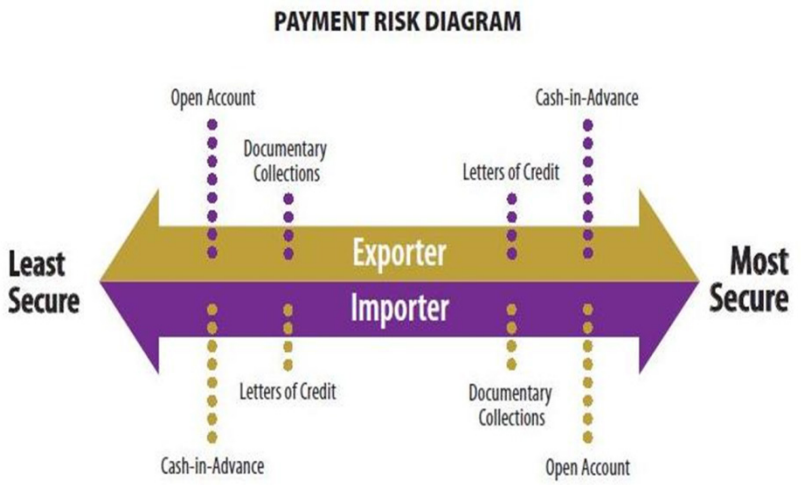
ICC forecast estimations (ICC, 2020) show that USD1.9-5.0 trillion capacity in the trade credit market will be necessary for overcoming the potential reduction in global merchandise trade of 13-32% in 2020 (WTO, 2020) and allowing to bring back the global economy. But the required capacity in the bank-intermediated market alone, comprising products such as letters of credit and guarantees, is USD 0.8-1.9 trillion if merchandise trade volumes are to restore in 2021 to levels near to 2019. Consequently, the COVID-19 crisis is additionally sharpening the barriers in trade finance in a number of strategic and important directions from the economic development.

Definition of Trade Finance

Payment for the exchange of goods and services is made in several ways. In the simplest forms the seller is paid by cash in advance or payment is made at delivery. Some forms of financing, as the deferred payment, enable the buyer to pay the seller

over time. Such financing of trade takes many different forms and may involve financial institutions.

Trade finance products typically include intra-firm financing, inter-firm financing, and some special tools are – advance payment guarantees/bonds, cash-in-advance, documentary collection (DC), letters of credit (LC), open account, performance bonds, and export credits insurance or guarantees.



Source: US International Trade Administration (https://www.trade.gov/methods-payment)

Figure 1. Payment-Risk Diagram

Trade finance consists of various instruments. In Figure 1. the arrangement of the main trade finance instruments is according their payment-risk profile between the seller (exporter) and buyer (importer) in an international trade transaction. Thus, in order for policies on trade finance to be effective, one has to know when which form of trade finance is used in international trade. Complete data on how different types of transactions are financed is not easy to find. For that reason empirical studies have rely on whatever data exists, aggregate sectoral, country-level or firm-level data.

The optimal choice between different payment conditions in recent papers is connecting with cross-country difference in contract enforcement, cost and availability of trade finance. The best option for cash –in-advance is the situation when a good is exported to a country with weak contract enforcement. The use of letters of credit decreases any incentive to default (moral hazard) when the transaction is between two countries with weak contract enforcement. Such incentive may appear when the importer receives the good payment. On the other hand, the moral hazard may be reduced through guarantees by the bank of the importer on its ability to pay. The idea is that enforcement between banks is easier than between two trading partners. Moreover, trading partners want to minimize financing cost. Hence the financing mode depends on which firm has lower financing costs, i.e. better bank credit opportunities (Ahn, 2011).

There are empirically studies of these theories. Smchmidt-Eisenlohr (2012) finds that two countries trade less with each other if the cost for financing is higher by using panel data on bilateral trade flows. The effect gets higher with the distance to the destination country and increases the time between production and payment to some extent because of transportation take times. In such situation the need of credit is higher and more expensive.

Glady and Potin (2011) confirm that firms prefer letters of credit in their trade transactions with countries with a high risk of default with respect to the choice between financing instruments. As a result from the SWIFT data analyses, when exporting to countries with s high commercial default risk than countries with a low commercial default risk letters of credit appear to be used four times more intensively. Moreover, letters of credit would be used more often when the parties in the transaction are located in countries with higher financial market development where fees probably are lower.

The reaction of institutions on choice between different financial modes is analyzed by Antras and Foley (2011) using transaction data from U.S. based exporter of frozen poultry, which includes financing terms by transaction. First, supplier credits and cash-in-advance are the most commonly used financing terms by this company. Only one fifth of the value of the transactions involves bank-intermediated financing. Second, the institutional environment of the destination country is of great importance for the choice of the financing terms. Cash-in-advance is the best choice for prime exports to countries with weak contract enforcement. But cash-in-advance is less likely to be used when trading partners establish a narrow relationship.

In brief the economic researches conclude that the institutional context and financial sector development are the two important factors determined the choice of trade financing instruments.

The level of risk of trade across international borders is higher than that of trading within national borders. Shipping goods internationally needs dealing with trading partners who are located in different countries, speak a different language, and are subject to different laws and regulations. International trade involves longer transit times that expose trading partners to risks ranging from exchange rate movement and demand uncertainty to political instability.

By choosing one of the four financial terms (Figure 1.) – cash in advance, open account, letter of credit and documentary collection, trading partners need to decide how to allocate those risks. Under cash-in-advance terms, the exporter receives a payment before the ownership of goods is transferred to the importer or even before the goods are shipped. The importer faces the risk of never receiving the pre-paid goods. Under open account terms, goods are shipped and delivered before a payment is made by the importer. So it is the exporter, who bears the risk of never receiving a payment. The letter of credit terms allow both parties to transfer the risk on to a bank in exchange for a fee. Under a letter of credit, the bank of the importer commits to make the payment to the exporter upon the verification of the fulfillment of the terms and conditions stated in the letter of credit. So the exporter is sure that payment will be received. Before the goods arrival, the importer does need to make payment.

Documentary collection is the other financing term including bank intermediation. Under documentary collection the exporter trusts the collection of payment to its bank.

Together with payment instructions the bank of the exporter sends the documents to the importer`s bank. Since the banks do not provide a payment guarantee, documentary collection is much cheaper than the letter of credit. By the proper instruction the banks are contributing to some extent to risk mitigation.

The risk of non-payment and non-delivery of prepaid goods is rising in an unexpected adverse economic shock, such as the Covid-19 pandemic. The export transactions backed by letter of credit and documentary collection is expected to be more resilient than all other financing terms. The export backed by letter of credit and documentary collection terms is supposed to be relatively stable (Demir and Javorcik, 2020).

Among these products, a traditional distinction is made between short-term (ST) trade finance products and medium and long-term (MLT) export financing/guarantees. The ST trade finance provides for differed payment over a period of less than one year (usually less 180 days), while MLT period can be extended with repayment terms reaching, or even exceeding, ten years. The ST financing facilities are specifically used for trade in commodities, intermediate or consumer goods. Contrary to them, MLT financing techniques are preferred in the case of capital goods or goods with a longer useful life. They are very often part of projects with their own revenues that can be used to service the debt as a result of importer project finance. ST trade finance is supplied mainly by private banks (banok-intermediated trade financing) and by firms (firm-to-firm or intra-firm credit) (Chauffour and Farole, 2009).

Although the reliable and detailed information on international trade finance is difficult to find, studies estimate that bank-intermediated trade finance accounts for 10% to 30% of world trade, with the remainder being organized by inter-firm trade credits through open account trading (Lotte van Wersch, 2019). The active participants in this market are commercial lenders such as multinational banks, local commercial banks, non-bank lenders, credit insurers and official export credit agencies (ECAs) backed by their governments.

Trade Finance and Financial Crisis

Specific feature of trade finance, connected with greater potential risk, is its international context. Cross border trades face *macro-level risks* which can influence the value of return (e.g., exchange rate fluctuations, changes in policy) and the possibilities of default (e.g., conflicts, political upheaval). In parallel they face specific *counterparty risks* in relation with greater difficulty of enforcement across borders, intensified in many developing countries by poorly functioning institutions, especially legal systems (Menichini, 2009). Weak cross-border enforcement increases the risk of strategic default on the part of suppliers, creating the problem of "credible commitment" across borders (Ellingsen & Vlachos, 2009). Finally, the cross-border nature of trade finance limits the assessment of the counterparty credit risk. These risks may be mixed in the case of supplier-extended credit, by the fact that greater part of suppliers operate in "credit chains" – i.e. firms which extend credit to their suppliers in turn have credit extended to them from their suppliers. Working capital provided by inter-firm credits to support production and trade is critical. At the same time they are vulnerable

to shocks as they can quickly create problems across the chain (Kiyotaki & Moore, 1997; Raddatz, 2008), strengthening the systemic risk.

The drop in global trade during the financial crisis 2008-2009 outpaced the drop in GDP due to a factor that was much larger than anticipated under standard models. Economists have found potential reasons in trade restrictions, a lack of trade finance, vertical specialization, and the composition of trade.

To determine the role of credit in the Japanese financial crises Amiti and Weinstein (2011) examine firm-level data from 1990 through 2010. They proved a causal link between the two by their data, which matches firm`s exports to the health of their banks. They find that the foreign sales of firms, working with banks which suffered greatly, drop more than their domestic sales. They estimated that the trade finance channel accounts for about 20% of the decline in Japanese exports in the financial crises in 2008-2009. Both authors give an explanation of why exporters, more than any other producers, are more reliant on credit in general, and trade credit and guarantees in particular. For the reason that a small part of world trade is paid cash or in advance, exporters rely on their banks and insurance companies to advance working capital to produce the goods for export and /or assume the payment, counterparty, transport, political, exchange rate and all other risks, characterized trade transactions.

Chor and Manova (2012) also investigate how credit conditions work as a channel through which the crisis led to the collapse in trade by using data on US imports. Measured by their interbank interest rates, the export to the US of countries with tighter credit markets is falling during the recent financial crisis. The effect is rising for financially vulnerable industries. Chor and Manova (2012) categorized financially vulnerable industries as those that look for extensive financing, have limited access to trade credit, or have few collateralizable assets. The result of their research is that financially vulnerable industries became especially sensitive to the costs of credit during the peak of the financial crisis.

Iacovone and Zavacka (2009) are other authors, who are investigating these problems – more precisely the impact of bank credit on exports during crisis times and how various export sectors differ in their need for external financing. Their result shows that the most exposed sectors should be hit harder during a banking crisis or in other words – during a crisis the export of sectors more dependent on external finance grow significantly less than other sectors. By using data from 23 banking crisis episodes involving both developed and developing countries during the period 1980-2000, the authors separate the impact of banking crisis on export growth from that of other exogenous shocks (i.e. demand shocks). The result confirms only for sectors depending more heavily on bank finance as opposed to inter-firm finance. The effect of banking crisis on exports is strong and a compliment to external demand shocks. The effect of "demand-side" shocks is independent and it is very important for sectors producing durable goods.

The thesis of all of these papers is contradicting to the thesis of Love et al. (2007) that trade credit cannot serve as a substitute to bank credit in times of crisis. The reason for that contradiction is the different focus - Iacovone and Zavacka (2009) are focusing on exporters whereas Love et al. (2007) do not explicitly look at international transactions. In other words, in the local banking crises analyzed by Love et al.

(2007) exporters have the possibility to get financing through trade credits from their international trading partners unaffected from the crisis.

Ahn (2011) develops a model to show the different nature of international relative to domestic trade finance to investigate theoretically the reason of the effect of a lack of trade finance on trade compared to GDP during the crisis in 2008-2009. In the model banks interact more with domestic firms. From the banks` point of view international transactions are more risky than purely domestic transactions. That is the reason for the usage of letters of credit for international transactions and not for national transactions by firms. By using letter of credit the two banks – the bank of the exporter and the bank of the importer, are screening the exporting firm and the importer located in their countries. Being the transaction international, no bank has to screen a foreign firm. According to the author, part of the disproportionate drop in trade during the financial crisis can be explained by banks first cutting international trade finance and by exclusive use of letters of credit in international trade.

Other investigation works do not prove the thesis of the role of the trade finance in the great collapse of the financial crisis in 2008-2009. Paravisini et al. (2011) is such an example. According to the authors, the increased cost of working capital affects overall production, be it for domestic markets or exports. Using data for the US and Belgium, Behrens et al. (2011) show how trade credit did not play a significant role in the large fall in trade relative to GDP in the global financial crisis in 2008-2009.

Trade finance and the Covid-19 Crisis

In a world of global value chains where goods cross borders plenty of times, international trade is disproportionate influenced by any drop in the world economy. The Great Trade Collapse, as a result of the 2008-2009 financial crises, is such an example.

The current downturn, caused by the Covid-19 pandemic, probably would not be different. The French exports dropped by 38% in March 2020 relative to historical patterns, the latest available data read (Demir and Javorcik, 2020). The decline in Germany was 23%, while 25% and 12% in Turkey and in the US, respectively. Due to the Eurozone slowdown French and German exports have been already declining. Their March drop was larger than the pre-pandemic trend.

There are many factors for the decrease of trade in periods of the economic slowdown. The decline in demand for durables (Levchenko et al., 2010; Eaton et al., 2016) is the one of great importance. The next factors include the increased protectionism (Evenette, 2009) and the interaction between uncertainty and higher ordering costs (relative to domestic) inputs (Berman et al., 2019). The worsened access to credit during financial crises and trade finance are also of great importance (Ahn, 2011; Amiti and Weinstein, 2011; Chor and Manova, 2012; Paravisini et al., 2015).

The increased risk of non-payment or non-delivery of pre-paid goods is another important reason which means that unsecured flows are less resilient than insured flows. On 28 April 2020 the Financial Times reported that “the current crisis brings with it a significant increase in late payments and additional risks that our client may face unpaid invoices as certain buyers may present heightened levels of risk of

non-payment and deteriorate credit worthiness and that the financing available for trade flows in emerging and frontier markets has dropped even more than volume of trade." `The increased uncertainty and inability to secure flows by using trade finance instruments, such as letters of credit, worsen the international trade. The opportunities for trade finance are declining in emerging markets in the past decade although the current downtrend is not followed by a financial crisis (WTO and IFC, 2019).

Historically, losses on trade receivables have been relatively small in comparison with those on other asset class (International Chamber of Commerce, 2018). During recessions, including the global financial crisis, trade credit has often proved to be a resilient source of funding (CGFS, 2014; Coulibaly et al., 2011). But the pandemic presents a perfect storm for supply chains.

The pandemic has hit real activity directly, rather than working primarily. In the case of the global financial crises, it was through stresses in the banking sector. Central banks do not have enough direct levers to cope with non-financial corporations` financial stress as they have for banks. That makes the supporting measures more difficult (Carstens, 2020). The Covid-19 shock is more synchronized across sectors and countries, with buyers and suppliers being affected at the same time. In such circumstances the inter-firm lending in the form of trade credit to soften the effect of the economic impact is likely to be reduced. During an aggregate shock on the scale of Covid-19 the mechanism of the large firms acting as liquidity insurers against idiosyncratic shocks inside their supply chain in normal times (Boissay and Group, 2013) may not work.

The longer and more global supply chains can transform even the largest companies "as weak as the weakest link". For example, the auto industry may have been hit notably hard due to knock-on effects along supply chains (Miller et al., 2020).

Being tested some credit risk mitigation arrangements may provoke uncertainty during the Covid-19 crisis. For example "the reverse factoring", which allows large buyers to receive cash from banks for their payables until payments, are called in by their suppliers. The reverse factoring creates potential for the firms to hide borrowing from banks as trade credits in the absence of disclosure requirements. Such cash is earmarked for suppliers and does not provide the liquidity buffer that cash would normally provide although firms can rise their cash holdings (Jafari and Kalousova, 2018; Eaglesham, 2020).

In the wake of the Covid-19 crisis there are other sources of vulnerability already known in the economic literature. Trade finance and the global value chains may deteriorate after sharp increase of the dollar (USD) exchange rate. The changes of the USD exchange rate are negatively correlated with the global trade finance volumes (Boissay et al., 2020). The financial channel of the exchange rate is the most important factor, influencing this relation. The sensitivity of USD credit supply to the broad dollar exchange rate is the reason for worsening the USD financial condition after rising of the USD exchange rate (Bruno and Shin, 2019; Avdjiev et al., 2019). There is relationship between the increase of the USD exchange rate and the worsen credit conditions.

The stress in the banking system as a result from the sharp increase of the USD provokes effects over trade finance in the early stages of the Covid-19. Mitigating the influence of USD credit changes is an important protection of global value chains

from pandemic`s economics collapse given the prevalence of USD in trade finance. The expansions of central bank dollar swap lines are possible measures to mitigate USD liquidity conditions and to keep trade finance.

The challenges in front of the real economies provoked by Covid-19 might be much harder, analyzers write, in comparison with Global Financial Crisis (Carstens, 2020). The support to large firms might be organized by central bank`s corporate bond purchase programs (Adelino et al., 2020). But for smaller firms in the supply chain more direct support in the form of grants and loan guarantees are better instrument to soften the effects of the shock. For purchase trade receivables and raising the cash government-guaranteed bank loans could be included as an alternative. Using different central bank facilities these loans could even be securitized and financed.

Private parties may be supported by special financial infrastructure provided by the governments. Small suppliers in Mexico have the opportunity to use their recei8vables from big buyers to receive working capital financing by reverse factoring facility without providing funding or factoring services by NAFIN Development Bank. Authorities in Europe raised the domestic credit insurers` loss absorption capacity by direct involvement of private funds. About 14% of trade receivables of credit insurers are exposed to risk and influenced by the pandemic (Boissay et al., 2020).

The higher exposure of banks and other intermediaries to trade finance and the greater part of USD denominated trade financing define the international dimension of the Covid-19 effects. The governments have already taken measures to increase the capacity of export credit agencies by expanding working capital programs and new facilities to support exporters and importers, especially SMEs (OECD, 2020).

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FROM CROSS-CULTIRAL COMPARISONS TO A COMPREHENSIVE INTERCULTURAL COMPETENCE – SOME COMMENTS ON THE ISSUES OF INTERCULTURAL COMMUNICATION IN INTERNATIONAL BUSINESS

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Abstract

The subject of the paper is the phenomenon of intercultural communication in international business. That is, a cross-point of culture, communication and international business is sought for. It is assumed that recognizing and managing cultural differences and similarities is instrumental for achieving effectiveness in international environment for the purpose of doing international business. Moreover, it is argued that the multidimensionality of the 'culture' concept and its situational and dynamic character in the context of international business substantiate a reasonable transition from cross-cultural comparisons to the development of a comprehensive intercultural competence - that is, a transition from cross-cultural communication to transactional culture building for the purpose of doing international business. The paper is based on literature review, observation and analytical reasoning.

Keywords**:** *international business, national culture, cross-cultural management, intercultural communication, intercultural competence*

JEL: *F23, M16*

Introduction

Is 'culture' a relevant element of international business environment yet, or it is a factor which impact is growing less intensive nowadays? The debate – 'cultural convergence against cultural divergence' – in international business theory and practice has been taking place for a couple of decades. However, is this the right question? In today's dynamic and varied international business reality, it is reasonable that the 'either, or' approach be avoided. The important question is 'when', and not so much 'whether', 'culture' is a significant factor of the international business environment (Bird, Fang, 2009).

First, the impact of the culture factor varies in terms of the international business strategies used by companies. Boeva (2014) argues that impact is most pronounced in the case of foreign direct investment strategies, while it is weaker in the case of technology transfer strategies. The more complex the forms of international alliances are, the wider and deeper the impact of the behavioural component of doing business is. Intercultural competence is a critical success factor in international mergers and acquisitions, equity joint ventures, that is in forms of partnerships which entail high degree of interdependence between foreign partners.

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Second, Child (1981) is searching for the answer to the above question in terms of the type of the organizational variables. Static ('hard') components of the management instruments (such as the organizational structure and the technological infrastructure) are getting more uniform globally, whereupon the impact of the 'culture' factor may be diminishing. However, 'soft' organizational variables (those which are tightly related to people's behaviour in an organizational context) remain culture-contingent whereupon 'culture' is viewed as a significant factor of the international business environment.

Third, the role of the culture factor in an international environment hinges on the specific localization of the business transaction. In that case, although the local partner may encounter difficulties in attributing the behaviour of the foreign partner, the former has the advantage of better knowing the peculiarities of the work environment, including the ways in which local culture and institutions affect the operation of the business. According to Barkema, Shenkar, Vermeulen and Bell (1997) the local partner needs to "cultivate" him/herself to the cultural specifics of the foreign partner only while the characteristics of the local environment are familiar to him/her. This situation is designated as "a single-layer acculturation task". However, the foreign partner is supposed to "cultivate" him/herself to two cultural layers – the specifics of the partner, on one hand, and of the foreign environment, on the other hand. This situation is designated as "a double-layered acculturation". All being equal, the foreign partner is more dependent on the local partner. Yet another case is when international business transactions take place in an environment, alien to all of the partners. In this instance it may be so that the cultural distance for one or some of the partners to be shorter because of similarities between their national culture and the culture of the host country. Accordingly, the impact of culture might be less significant. And vice versa, the larger cultural distance commands heightened attention to culture as a factor of the international business environment.

That is, although organizations are getting similar to each other globally, the people within organizations preserve the cultural peculiarities of their behaviour. Hence, it is reasonable that a synergetic approach to handling the 'culture' factor be recognized and applied, wherethrough the focus is on understanding when the naturally emerging and / or deliberately engineered universal models are more effective, and when culturally-contingent models are more relevant.

What goes without saying is that intercultural issues are not easy ones, neither are the answers to such issues. According to a study, carried out by Price Waterhouse Coopers among more than 1000 CEOs in more than 50 countries, a major preoccupation of theirs is how to effectively cope with cultural diversity under the conditions of globalization. A successful global leader should not only understand but also be able to bridge over and capitalize on cultural differences. Therefore, the capabilities for recognizing and managing cultural differences and similarities are instrumental for achieving effectiveness in international environment for the purpose of doing international business.

More than that, it is argued that the multidimensionality of the 'culture' concept and its situational and dynamic character in the context of international business substantiate a reasonable transition from cross-cultural comparisons to the development of a comprehensive intercultural competence - that is, a transition from cross-cultural

communication to transactional culture building for the purpose of doing international business.

Next, the elaboration on the thesis follows.

What is meant by 'multidimensionality of culture'?

Traditionally, researchers in the field of cultural differences (whose contributions are most often used in international business) focus on the 'national culture' as a main unit of analysis. Thus, established culturalist views may mislead participants in the system of international business to admit that culture is a national phenomenon only and make them 'blind' to the variety of other cultural conditions, such as: the professional culture, organizational culture, regional culture, ethnic culture, generational culture, social class culture, individual culture, etc.

It is necessary that the field of international business enrich its understanding about the impact of culture beyond the bi-cultural environment. The bi-cultural perspective (which takes into account national cultural differences between partners only) should give way to the 'multicultural' perspective. In line with the 'multicultural' perspective, cultural influences exist at various levels, and manifest themselves in diverse combinations. 'National culture' factor intertwines with other cultural differences – professional, organizational, social, etc., whereupon, just because of the intertwining and interaction among various cultural levels, the impact of the national culture level may diminish. For instance, in international business as a result of the activities of international professional bodies, which provide professional certification in specific areas (e.g. project management, finance, accounting, etc.), and the application of international professional standards, frequently professional culture may prevail over 'national' culture.

Therefore, the participants in the system of international business should try to decipher the 'embroidery', composed by the various levels of culture.

What is meant by 'situational and dynamic character of culture'?

Culturalist views conceptualize 'culture' as 'static mental codes / mental schemes', whereupon the context of their application (the context, wherein the 'national culture' is one of its components) is not taken into account. However, the static and detached from the context concept of culture is hardly applicable to the analysis of real-life intercultural encounters – especially in the field of international business, wherein the dynamic and complex mosaic of the international environment requires multi- and interdisciplinary approach. One of the areas of international business, wherein the static and detached from the context view of culture is especially harmful, is intercultural communication because as a process of interaction, communication provokes changes in the participants' perceptions (Yoshikawa, 1987).

What is meant by 'a reasonable transition from cultural comparisons (the cross-cultural perspective) to the development of a comprehensive intercultural competence – that is, a transition from cross-cultural communication to transactional culture building for the purpose of doing international business?

Undoubtedly, knowledge about cultural comparisons is useful – especially, at the early stages of establishing relationships when international business practitioners do not have yet observations over the personal identity of their foreign partner. Respectively, the understanding about the peculiarities of the 'national cultural' identity may serve as an initial clue for building mutually beneficial relationships. Nevertheless, that cross-cultural knowledge is insufficient in the dynamic international business practice.

While including the cross-cultural perspective in the analytical toolkit of international business practitioners, one should not forget that the cross-cultural perspectives is based on:

- The 'national culture' only as a main unit of analysis
- The central tendency in the respective country. However, an intragroup variation exists, whereupon each individual conforms to or deviates from the country's average to a different degree.

At the same time, cross-cultural comparisons:

- Can be easily applied
- Moreover, because of the fact that the estimates of the national cultural values are not absolute but relative (that is, they exist on the basis of comparison) – these are valid for long periods of time. Although cultures react to the influence of various phenomena – for example, new technologies, countries keep their relative scores against the others in the ranking because the influence is exerted over all the cultures and they change together. Some reshuffle is possible as a result of sharp and cardinal changes which reflect over the culture of new generations.

The dimensions of national culture, their interpretation and estimates, derived by various researchers show a high degree of consistency and compatibility among them. To start with the contributions of Parsons (1951, 1953), Kluckhohn and Strodtbeck (1961), Edward Hall (1976, 1983, 2000) in the 50s, 60s and 70s of the 20th century. These contributions lay the foundations for the subsequent studies. To continue with Hofstede, whose contributions are the most used and quoted in all the disciplinary applications of cultural differences.

Shalom Schwartz (2006) also offers some enlightening contributions. For instance, about the cultural differences in the West, and the cultural map which makes possible comparisons to be made among 76 national cultures, simultaneously on seven value dimensions.

Researchers such as Ronald Inglehart (2000), Harry Triandis (2002, 2004) as well as the contributions of the latest research project in the field of cultural differences – the GLOBE project – should not be left out. The GLOBE project further clarifies the 'individualism – collectivism' dimension by distinguishing between 'in-group' and 'institutional' collectivism. Besides, a significant contribution and distinction from the other projects, is that the GLOBE project works out estimates both for values and for practices of the national cultures it studies. Thus, the GLOBE project makes it possible that comparisons between values and practices, between the 'desirable' and the 'desired' to be made, regarding the national cultures studied. Another important contribution of the GLOBE project is the clarification of the relation 'national cultural profile – effective leadership style' in each specific national cultural environment (Javidan, House, 2001, 2002).

Kwok Leung and Michael Harris Bond (2004) further enrich the conceptual and analytical toolkit for intercultural analysis by viewing cultural differences as a function of not so much values but of the so called, social axioms. Social axioms are commonly held believes, 'generalized expectations' about people's behaviour in various social context. Leung and Bond argue that what people know about the world around them is a complementary and even a better indicator than the values are, of the people's behaviour. That knowledge may be seen as the mental representations which an individual develops in the course of his/her life experience, about the social context. Social axioms are the fundamental truths as perceived by people and which direct their behaviour.

Furthermore, the increasing relative share of business communications, taking place via contemporary communication technologies enlarges the scope of the influence of the 'national culture' factor. The global character of Internet does not belittle the influence of cultural differences, and respectively of intercultural competence as a success factor in international business. Each technology incorporates a cultural component which impacts its adoption and application (Swigger et al., 2004). Behavioural effects should not be underestimated. In spite of being limited in terms of number, methodology, and scale, empirical studies show that there is a specific interaction between 'the culture' and 'the communication instruments', which in its turn has repercussions on the process of online communication for the purpose of doing international business.

Consequently, the cross-cultural perspective should not be abandoned but intelligently used as an element of a comprehensive intercultural competence. A comprehensive intercultural competence which goes beyond the knowledge about culture – about its components, about cultural differences, about cultural universals, and further incorporates a metacognitive component, a motivational component, and a behavioural component (Earley & Ang, 2003).

The metacognitive component relates to the process of acquiring knowledge. Metaknowledge teaches us how to learn; it is a broader knowledge which facilitates the transition to specific knowledge; metaknowledge is a platform for acquiring other types of knowledge and skills, which determine the content of intercultural competence.

Metaknowledge is a key component of intercultural competence because a considerable part of what is required in a new cultural environment, is putting together diverse elements in a coherent picture even when one does not know how exactly this picture is supposed to look like. Individuals with a high level of metacognitive intercultural competence question their views about cultures and fine-tune their mental models during and after their participation in intercultural encounters.

The metacognitive component:

- Encourages active reflection on intercultural encounters and on the participants in them;
- Defies cultural stereotypes and prejudice;
- Directs the individual to reconsider and fine-tune his/her strategies so that to achieve cultural legitimacy and respectively, the results sought out of the intercultural communication process.

The motivational component of the intercultural competence refers to the internal motivation, to the willingness for participation in a foreign cultural environment, for initiating intercultural encounters, for perseverance in participation under the conditions of uncertainty, obstacles, and even failure. The motivational intercultural competence reflects one's attitudes to a behavioural adaptation in an intercultural context.

Motivation is a key component of intercultural competence. Motivation determines whether and to what extent the individual directs his/her energy to learn about cultural differences and to empathize with people with different self-reference criterion. Besides, motivational capabilities are instrumental in solving real-life problems.

Behavioural component of intercultural competence (the skills) is the most visible dimension of the intercultural competence. Participants in the process of intercultural communication do not have a direct access to the thoughts, feelings, and motives of their counterparts. They rely on what they can hear and see in the words, voice, gestures, and mimics of their interlocutors. Achieving intercultural competence means that the individual not only knows and wants, but also can effectively adapt to the requirements of the respective intercultural context through real practice.

Knowledge and motivation for intercultural understanding should be complemented by skills for demonstrating adequate verbal, paraverbal, and non-verbal behaviour, which takes into account the values in the respective cultural environment. Included here are both the intercultural skills which are already acquired by the individual – such as foreign language skills, skills for adapting to the behavioural norms in a foreign cultural environment, for stress management, for conflict management – but also the individual's potential for acquiring new skills.

Intercultural competence means effective behavioural adaptation to foreign cultures, and not only knowledge, thoughts, intentions, and desires for such. What is necessary is a transition from 'static' knowledge about cultural differences to a comprehensive intercultural competence, which in its turn to facilitate a transaction culture building, and respectively, a successful outcome of intercultural encounters.

Transactional culture

A contemporary view of culture defines it as "an active process of meaning making" (Street, 1993). The model of intercultural communication through a transactional culture building is based on the contemporary situational and context-contingent views about culture and intercultural communication. It is argued that the transactional culture approach incorporates the contemporary behavioural perspective in international business. Namely, behavioural adaptation on behalf of international business practitioners as a result of internationalization and globalization of economic processes. The participants in intercultural business encounters change their workplace behaviour in order to allow for the cultural peculiarities of their foreign partners. That change facilitates the agreement between the modes of communication without changing national cultural identity. For instance, the Germans and the Japanese have different attitudes towards working overtime. However, in the operation of a German-Japanese joint venture, it proved that German partners began to work longer

hours while the Japanese worked fewer hours than they did in Japan. Building such transactional culture is not easy and takes time. It is the dialogic process which underpins the process of transaction culture building (Casmir, 1993,1999).

Transactional culture building is not easy because of the 'cultural luggage' which each foreign partner 'carries' with him/her as a result of the internalization of the values and practices of his/her own national culture. However, from the perspective of the dialogic approach to communication, each of the interlocutors 'crosses' his/her own cultural environment so that partners together create a new shared context. Various terms exist for naming that new shared context: a third culture, a common culture, transactional culture, negotiated culture, working culture. Regardless of the various designations, all of them encompass a similar phenomenon – a situational (sub)culture which emerges and develops in the process of dynamic interaction between partners (Casmir, 1993, 1999).

The transactional culture is a contemporary approach to understanding and studying the impact of culture on doing business in the context of economic globalization. This is an umbrella approach which integrates both culture divergence and convergence views. The views about the cultural ecology which 'restrains' cultures, thus keeping them as specific phenomena with unique features. Also, the views that getting to know new values and practices make cultures more open, whereupon they intertwine into a shared, global phenomenon. National culture ecology and cultural encounters get integrated, co-exist and build a dynamic transactional culture. Transactional culture is a result of a kind of a cultural engineering, only made possible through the active participation of each of the foreign partners.

Conclusion

The knowledge about culture, about cultural differences, about intercultural competence; and understanding about their influence on the business communication practice are a competitive advantage for international business practitioners. Frequently, it is exactly the behavioural perspective which is of critical importance in the decision making process in the system of international business. Proving an authentic respect toward foreign partners, toward the peculiarities of their national cultures, makes the difference between an authentic international business practitioner and all the others. Mutual respect among foreign partners is a success factor for achieving economic benefits for each of them.

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SWOT ANALYSIS OF THE COMMON SECURITY AND DEFENCE POLICY FOR BEING BETTER PREPARED FOR "BLACK SWAN EVENTS"

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Abstract

This publication aims to look at the process of strategic rethinking of the Common Security and Defence Policy 5 years after the adoption of the Global Strategy for the Foreign and Security Policy. It is based on a SWOT analysis of CSDP and places special emphasis on the need of more flexibility and less time consuming decision-making process, in order EU to be better prepared for the so-called "black swan events".
With no intention of being exhaustive, it provides an analysis of certain tendencies in the policy which aims at enabling the Union to take a leading role in the international relations.
In this regard the article:

- *on the one hand: focuses on the key elements of the SWOT analysis, revealing what the strengths, weaknesses, opportunities and threats of the CSDP are.*
- *on the other hand: draws attention to the concept of the "black swan events", the new Strategic compass and the need for EU Global strategy transformation into a smart strategy[1], balancing between strategic vision and flexibility.*

Keywords: *CSDP, Strategic Compass, European autonomy, European defence fund (EDF), Permanent Structured Cooperation (PESCO), EU Global strategy*

JEL: *F5*

The fifth anniversary of the Global Strategy for the Foreign and Security Policy of the European Union marks the beginning of a new strategic rethinking process which aims at refining the above mentioned strategy by using the new Strategic Compass Initiative.

The advent of the Global strategy in 2016 (7 years after the Lisbon treaty entered into force, 3 years after the 2013 Council statement that "defence matters", and 13 years after the adoption of the last European security strategy), was a very important step in the process:

- on the one hand, of identifying the EU clear strategic vision and its level of ambition in the international relations and
- on the other hand, of starting key initiatives for defence capabilities development as well as for innovation enhancement of the European defence technological and industrial base.

As a result, the following important initiatives have been taken under the Common Security and Defence Policy:

[1] As a departure point, it uses the formulation of Joseph S. Nye, Jr about a "smart strategy". For more details see "The future of power", 2011

- Permanent Structured Cooperation (PESCO), established by the Council in December, 2017. It is an intergovernmental initiative in the field of defence and security, referred to by the former European Commission President – Jean-Claude Juncker (2014-2019), as the "sleeping beauty" of the Lisbon Treaty;
- Coordinated Annual Review of Defence (CARD), approved in May 2017, which aimed at: *revealing the existing capability landscape in Europe, *stimulating better coordination and defence cooperation between member states and *identifying the common priority defence capabilities. CARD is realized by the European Defence Agency (EDA) and the EU Military Staff (EUMS). CARD can provide useful inputs for the preparation of the work programmes of the European Defence Industrial Development Programme /the European defence fund;
- The European Defence Industrial Development Programme (EDIDP), June, 2017, covering the period raging between January 1, 2019, and December 31, 2020. Together with the Preparatory Action on Defence Research (PADR 2017-2019) it was a kind of a"test drive" for the forthcoming European Defence Fund and its respective two windows of "capability" and "research". The EDIDP was started after the successful trialogues on the Regulation 2018/1092 for its enactment during the Bulgarian Presidency of the Council of the EU in 2018;
- The European Defence Fund (EDF) which is expected to be launched in 2021, upon the successful conclusion of the negotiations on the new regulation of the European Parliament and of the Council establishing the European Defence Fund [COM (2018) 476 2018/0254 (COD)]. The EDF aims at: *promoting the innovative and competitive industrial basis of the defence industry and *contributing to the strategic autonomy of the European Union. The European Defence Fund is a responsibility of the European Commission as it has a double legal basis related to its industrial and R&D dimensions. For the first time ever EU budget is allocated for defence R&D purposes. The initial proposal of European Commission was to allocate €13 billion to the fund for 2021-2027.

All these initiatives aim to increase the European strategic autonomy and to develop a solid and innovative common European industrial and technological base. So, the implementation of the Global strategy strengthens the EU long-term global position. Nevertheless, despite of its indisputable advantages, there are certain challenges and deficiencies related to:

- the lack of common assessment and common perceptions of the threats and risks;
- the inefficient use of available capabilities in response to the EU strategic and operational needs;
- the lack of a special focus on weapons of mass destruction (WMD), having in mind the increasing imbalances in the field and the tendencies of disregarding the international treaties in the recent decades;
- the need of a: more comprehensive crisis management, less time consuming and more flexible decision making, prevention capability, and proactive management of "black swan events".

For this reason, the new Strategic Compass initiative which aims to improve the Global strategy for the Foreign and Security Policy, is a step in the right direction.

This two-year process started during the German Presidency of the Council of the EU with a short and medium-term threat analysis (for the period 2025-2030) presented by the EU High Representative – Joseph Borrell, for the purpose of complementing the Global Strategy in relation to the emerging threats. This document is expected to provide the European Union's political and strategic direction in the area of security and defence in response to the EU ambition to have a visible role in shaping the future global order.

The four main interrelated areas in the focus of attention of the Strategic Compass are going to comprise: crisis management, resilience, capabilities, and partnerships; while the key challenges under analysis are going to include: global and regional threats, conflicts in the EU neighbourhood, challenges by state actors, and threats by non-state actors.

The main initial trends that have been outlined in the threat analysis are as follows:

- at global level – slowing down of the process of globalization, the growing economic rivalry between the global powers, the climate change and the race for resources, the migratory pressure, and threats to the multilateral system;
- at regional level – regional instability, conflicts, state fragility, interstate tensions, external influences, the destabilizing impact of non-state actors;
- threats against the EU – the state and non-state actors targeting the EU with hybrid tools, including disruptive technologies, disinformation, and some other non-military sources of influence; terrorist threats. [27]

The initiative has the potential to overcome the existing deficiencies, if there is enough political will for sharing information in the field of security and defence and for forming a foresight strategic vision by implementing all-embracing approach and tactics, as well as by assessing the risks and threats through the prism of the common priorities and not of the narrow national ones.

Strategic planning is needed as it is important to translate the strategic vision and objectives into real actions. Otherwise the European strategic compass risks to become not more than another paper dragon.

In this regard, we can see how some elements (such as the Global strategy and Strategic compass) can be a strength of the CSDP policy and how they can be transformed into its weaknesses if there are no follow-up actions.

The key elements of the SWOT analysis, revealing what the strengths, weaknesses, opportunities and threats of the CSDP are

With no intention of being exhaustive, the current SWOT analysis, made for the purposes of the present article reveals what the strengths, weaknesses, opportunities and threats of the CSDP are. Taking into consideration the fact that SWOT analysis is about assessing the internal factors of a subject, looked through the prism of its four aspects, the current paper focuses on the CSDP internal factors. The publication is not just about filling out the matrix, but also about finding the correlation between the aspects, in order to keep the strengths, maximize the opportunities, neutralize the weaknesses and mitigate the risks and threats.

Source: Author

Figure 1. SWOT Analysis of the CSDP for the purposes of the present article

The SWOT analysis is a very useful tool in case of the "black swan" events with low probability, but a high negative impact. This analytical instrument can be used for identifying the potential threats and opportunities one organization faces, in order to better know what the possible measures to address the obstacles are and what the routes of overcoming such security and defence challenges are.

Strengths

The Strengths of the CSDP are related to the: Lisbon Treaty provisions which reorganize the EU Foreign Policy and Defence, giving much more opportunities for the development of CSDP; Global Strategy for the Foreign and Security Policy; Soft power; Political will is present; PESCO; CARD; EDIDP; EDF; Strive for European autonomy and European Defence Union.

The Lisbon Treaty introduces innovations into EU foreign, security, and defence policy. The EU acquired the status of a legal subject – which was a new element of great significance for the external dimension of EU actions.

The Lisbon Treaty ushered important changes to ESDP/CSDP aiming to boost the EU's role and tools in areas like crisis management, human rights and international development, and inject consistency into foreign policy through improving coordination: introducing an EU High Representative for foreign policy and security and an EU Council Chair, and launching the European External Action Service.

Specific changes open CSDP's opportunities to deepen defence cooperation and boost the EU's significance as a factor in international security. The Treaty mentions the European Defence Agency for the first time; broadens the scope of CSDP missions (the so called Petersberg Tasks); introduces solidarity and common defence clauses and the

Permanent Structured Cooperation mechanism (PESCO). Linking diverse elements of EU foreign policy like diplomacy, security, trade, development, humanitarian aid and international negotiations is an innovation that gives the EU a clearer voice on the international stage.

Having said that, the Lisbon Treaty provides tools, but their use depends on political decisions and the will for greater security and defence integration. In this regard, in spite of the fact that the Treaty entered into force in 2009, the Global strategy (2016) and the PESCO (2017) did not appear until some years later.

So the full implementation of the present provisions depends on the member states and their level of readiness to cede national sovereignty in the common interest.

The Global strategy for the Foreign and Security Policy was a long awaited document for reassessment of the security environment and a clear definition of the level of EU ambition in common foreign policy and security and defence policy.

With the adoption of the Global Strategy in 2016, the EU managed to determine, on the one hand, its level of ambition to be an independent strategic actor with a global influence and, on the other, its own strategic objectives in response to the new challenges in the world of "predictable unpredictability". [15]

The strategy shows:

- the EU level of ambition and the existence of an ultimate end-goal for the European Union - EU's striving for a positioning on the international stage as a global player, promoting and respecting the key principle of multilateralism;

- what kind of player the EU wants to be – the EU wants an European strategic autonomy in the field of security and defence policy and a global impact of its activities (global not only in terms of the geographical dimensions, but also in terms of the wide range of instruments and policies at its disposal);

- what type of power (soft or hard) it wants to use - while the Union is best at using "soft power", this is not enough in the context of the new challenges in the fragile world of today. To this end, EU expressed the need to enhance its security and defence credibility;

- what the EU ambition is for new technologies and investments in the field of the European defence industry. The EU is striving to create a solid European defence industrial base and to develop capabilities with a maximum level of interoperability. The EU foresees funding for defence R&D in the next budget cycle post 2020, which is crucial for building the needed European defence capabilities;

- what type of relationship it wants with NATO, given the fact that: *they share the same theatre of operations and that 21 EU Member States belonging also to NATO generate 20% of its budget. According to the Strategy, the European security and defence efforts should enable the EU to act autonomously while also contributing to and undertaking actions in cooperation with NATO. [15]

The already presented in details initiatives of **PESCO, CARD, EDIDP and EDF** are a good example of concrete actions based on the existing legal (Lisbon Treaty) and strategic (Global strategy) basis. The Bulgarian Presidency of the Council of the EU 2018 worked for a well-functioning, inclusive and ambitious Permanent Structured Cooperation – PESCO and placed a strong emphasis on the European Industrial

Defence Development Program (EDIDP), because it was a pilot initiative for the launching of the European Defence Fund.

Soft power makes effective multilateral collaboration possible. In this regard, the EU's strengths should not be presented as weaknesses (incl. the so called "soft power"). The deficit of set capabilities should rather be made up than ignored.

The inclusion of the CSDP into the December 2013 Council agenda - for the first time after the Lisbon Treaty, was an advance showing the **Heads of State's definite political commitment** to security and defence. Their decisions formed the following three CSDP clusters: *Effectiveness, visibility, and influence; *Boosting capability creation; *Strengthening the European defence industry.

The European agenda of the newly elected European Commission (EC) President – Ursula von der Leyen (2019-2024), focuses on the European defence and on the **Commission's desire to be "geopolitical" in its way of thinking and acting**. The agenda underlines that, in terms of collective defence, the EU is going to remain transatlantic and become more European, by taking bold steps, over the next five years, to **build up a genuine European Defence Union**. [24; 29]

When tracking back the statements made by the former European Commission President – Jean-Claude Juncker, by the current one, and by the European Council President – Charles Michel, one could notice a **desire for European sovereignty and strategic autonomy of the EU**. [19] Common European sovereignty not replacing the individual national sovereignties but rather being shaped up on their basis, without opposing others. Europe's strategic independence that has really marked the true beginning of the 21st century for Europe, since it is the new joint project, of common interest to the EU, a primary goal of the modern generation. [23]

The EU High Representative for Foreign Affairs and Security Policy, *Josep Borrell* says that in a competitive world, **the EU needs to "practice the language of power, rather than just speak it".** [17] Therefore, it is important for the future of CSDP that the EU should build a common strategic culture, with a common understanding of the risks, the threats and the type of action.

Weaknesses

Despite the above presented improvements, the level of EU ambitions as a defensive community remains unclear, as the Lisbon Treaty **does not set a clear CSDP EU homeland defensive task**. All references to defence and operational planning relate to operations outside the EU. This significantly curtails command system and military organization options within the EU. Alongside a shortage of key military capabilities for external operations, the EU faces serious difficulties in organizing the command structure for each operation because appointing operational commanders and staff, as well as force commanders and staff in operational areas, does not rely on an existing command system, as in NATO, but on activating operational staff and personnel offered by member states.

There is a time-consuming CSDP mechanism for decision making and lack of flexibility which is still a weakness for the EU.

The decision making process is related to:

- key role of the Council of the EU and European Council (the Political and Security Committee (PSC), COREPER II, Foreign Affairs Council, European Council) and the double-hatted High Representative of the Union for Foreign Affairs and Security Policy, responsible for the European External Action Service (EEAS), being at the same time Vice-President of the European Commission and Chair of the Foreign Affairs Council;
- the involvement of the respective permanent political, military and civilian structures of the two key institutions: the Council of the EU (Politico-Military Group (PMG); European Union Military Committee (EUMC); Committee for Civilian Aspects of Crisis Management (CIVCOM)) and the European External Action Service (European Union Military Staff (EUMS); Civilian Planning and Conduct Capability (CPCC); Military Planning and Conduct Capability (MPCC); Crisis Management and Planning Directorate (CMPD); Intelligence Analysis Centre (INTCEN);
- the five phases of launching military missions and operations (Phase 1: Monitoring and early Warning; Phase 2: Drawing up the Crisis Management Concept; Phase 3: Operation planning; Phase 4: Deployment and implementation; Phase 5: Strategic review: maintain, refocus or terminate), (Rehrl, J., 2015).

Each level of the decision making process takes time and corresponds to different rules and procedures. The decision-making process should be accelerated, in order to rapidly deploy missions and operations on behalf of the European Union. So the future efforts are expected to focus on rapid and preventive deployment.

There is still a high national sensitivity with regard to sovereignty characterized by retaining the key role of nation states in security and defence and their absolute weight in the decision making process.

There is **a lack of a common risk and threat perception and assessment between the member states,** due to their geographical positions, historical backgrounds, traditional partnerships, economic and defence capabilities' reasons. This can also be explained through an example of normal human psychology: "when you hold a hammer in your hand, all problems start to look like nails", namely big powers naturally see the world differently than small ones. They perceive risks and threats differently, define security in a different way and build a different tolerance threshold for uncertainty. Those who have greater military power are more likely than weaker states to perceive force as a useful tool in international relations. In fact, the militarily powerful rely on force more than necessary. On the other hand, countries deprived of a great military power face the opposite danger: when you don't have a hammer, you do not want anything to look like a nail (Kagan, 2003). Thus, the viewpoints and psychological attitudes of strength and weakness explain a lot about the different approaches.

There is a **need for uniform perceptions of the new strategic context in the EU member states**. The sustainable success of the Strategic Compass depends a lot on the unified perceptions of risk and threat in individual member states.

Regardless of the mechanisms for common funding of operations, their high cost, under the current principle of "costs fall where they lie", is the reason for many countries to refrain from participation in international operations. Together with the lack of political will, common concept and approach of participation, and usability, this is also

among the main reasons why the **EU Battlegroups have not been used efficiently for more than 15 years. There is a gap between the EU Battlegroups and the highest level of ambition within the EU Global Strategy**, which is expected to be filled progressively by the EUFOR Crisis Response Operation Core. [20]

Europeanizing failure and nationalizing success is still a significant problem which creates mistrust in the European policies and integration among European citizens. The representatives of the all European institutions (without forgetting that the heads of state and government represent namely the European Council and the sectoral ministers - the Council of the EU) must work together in a synchronized manner, as they are a tool for achieving the common goals, in order to meet the expectations of the European citizens.

Opportunities

According to the Global strategy and the new initiative for its further development, the **EU Strategic Compass** is leading us towards the achievement of European sovereignty and strategic autonomy as a global actor - proficient in the language of power and exercising effective multilateralism. It is a real opportunity for more integration of the Union and of its CSDP in particular. As stated in the Rome Declaration of the 27 Member States and of the European Council, the European Parliament and the European Commission, 2017: "*Taken individually, we would be side-lined by global dynamics. Standing together is our best chance to influence them, and to defend our common interests and values.*

European Peace Facility is another opportunity, as the Facility will replace the Athena mechanism, previously used to finance operational common costs of individual EU military CSDP missions and operations (i.e. HQ, personnel transport, force protection costs etc.). It is the new global off-budget instrument that will finance external action having military or defence implications, under the Common Foreign and Security Policy, with the aim to prevent conflict, preserve peace and strengthen international security and stability. [16]

The common defence clause (Article 42.7 of the Lisbon Treaty) foresees help to any member state subject to armed attack on its soil, yet does not specify whether this includes armed means. While reminiscent of Atlantic Treaty Article 5, the clause requires interpretation in practice.

According to the survey "Democracies under pressure" of the Fondation pour l'innovation politique, International Republican Institute, the current geopolitical upheavals have revived the idea of a **European army**. Admittedly, the security of citizens is the primary duty of states, and military forces are an essential expression of national sovereignty. However, Europeans know that their national power is no longer enough to protect them from new threats. The survey shows that terrorism (83%), war (72%), immigration (69%), but also the way the United States (63%), Russia (61%) and China (40%) act on the international scene arouse strong concerns among citizens and feed a demand for increased security. When asked about their desire to see the European Union acquire "a joint army for all Member States, in addition to national armies", a majority (59%) of Europeans are in favour. Moreover, the approval brings together a majority of respondents in 20 of the 27 Member States (Reynié, 2019).

The decision to create a European army is related, apart from the need for a *strategic vision – i.e. whether this army should be based on NATO or European Defence Community model, *to the political will at both national and EU level and *to public support of the EU citizens; in addition, it will need military capability and operative efficiency. The key issues related to the above are: *the EU preparedness to defend itself unassisted; *its potential ability to do so; *member states preparedness to allocate a much higher percentage of their respective GDP for defence, at the expense of other social expenditures, to invest more in technological innovations and research, and to demonstrate their political will to set up: *on the one hand – a political union capable of meeting the new challenges in security, defence and diplomacy and *on the other – a European army, in view of the related not only financial challenges, but in addition to the differences in political culture and heritage, considering that, in the past, each of the leading EU states has been a source of tension.

In order to effectively use its strengths as a soft power and compensate deficits in capabilities, the Union **should transform itself into a "smart power",** able to match the hard and the soft power resources into effective strategies that could be pursued in different situations (Nye, 2013).

All these instruments and concepts can be real opportunities, if the European leaders have the **capacity to anticipate future developments based on foresight and shared vision**.

Threats

The **security environment is characterized by: a complex set of threats** – asymmetric, hybrid, domestic and external, all highly interlinked, alongside risks containing new components – economic, financial, energy, environmental, social, and justice, as well as **a high level of unpredictability**. The hybrid nature of threats and challenges, the conflicts and wars - both armed and unarmed, form the new security environment. In addition, considering the higher level of mistrust between nuclear forces and the potential threat of terrorist acquisition of WMD, an explicit focus should be given to the pursuit of a nuclear-weapon-free world. The topic is merely mentioned in the EU Global Strategy for Foreign and Security Policy from 2016. The last EU document on the subject is the EU's 2003 Strategy against proliferation of weapons of mass destruction. The proliferation of nuclear weapons will affect in the future the overall nuclear balance between the nuclear superpowers. Thus, for any great nuclear power, the proliferation will require a proportional increase in their powers, reaching or exceeding the existing limits. This would lead to a nuclear imbalance and, respectively, to an imbalance in international relations, where the European Union aspires to be a global actor. Having in mind that after Brexit, France is the only nuclear power within the European union, as well as that there are US nuclear installations on the territory of five EU countries, which are member-states of NATO (Belgium: (10-20), Germany (10-20), Italy (60-70) и Netherlands (10-20), the Union can become a driving force for strengthening and advancing in multilateral nuclear disarmament and non-proliferation agreements (Haralampiev & Panayotova, 2020).

A fixation by leading European countries **on the interests of indigenous defence industries** is a threat for the forthcoming new instruments and initiatives (such as

PESCO, EDF and Strategic Compass). So, as the leading European countries concentrate on the **interests of their own defence industries**, it is very important to specify in the implementation of the EDF where business ends and where geopolitics begins. The **existence of narrow national priorities to the detriment of common ones will certainly impede future integration in the field.**

There are **certain symptoms** related to the launch of the two key EU integration initiatives in the field of security and defence – PESCO and EDF.

PESCO had been seen as an instrument for military "integration at different speeds" in the EU, involving only countries with military capabilities that answer the high criteria of modern missions. Nevertheless, in the process of initiating PESCO in 2017, an inclusive approach was applied which made it possible for everyone to participate, regardless of their level of preparedness. In this way, the integration into the EU at "different speeds" was avoided by demonstrating a desire to attract as many countries as possible to the process of deep integration in the field of defence. Half a year following the launch of PESCO, the French President Emmanuel Macron came up with his own European Intervention Initiative outside the EU format. [21] If the European Intervention Initiative had preceded the launch of PESCO and had caused the parties involved (Germany, Belgium, Denmark, the Netherlands, Estonia, Finland, Portugal, Spain, and the United Kingdom) to realize that it was about time to take a step forward in the Union's integration in the field of security and defence, it would have been much more constructive. However, if we have to point out the positive dimension of the above initiative, it would be that, being outside the EU format, it gives the opportunity to Britain, after Brexit, and Denmark, which has a special status and does not participate traditionally in the CSDP, to remain within the scope of European defence. **Integration at different speeds in the field of security and defence** could be a positive phenomenon, only when the willing countries, with equal access to participation, integrate faster.

Concerning the EDF, the reorganization of the MFF (2021-2027), in relation to the green and the digital transformation and tackling the effects of the COVID-19 pandemic, has led to the reduction of defence funding and has raised the question of how the priority objectives could be achieved with less funding. Most of the EU members need to invest into capabilities, stop consuming, start contributing to the common security, and overcome diverse technological readiness and capability levels.

The European leaders should not be tempted to see through the eyes of the heroine of Georgi Gospodinov's story "Blind Vaysha", who sees the past out of her left eye and the future from her right, being unable to live in the present. This means that it is time for taking responsible strategic decisions in the present, which is the basis for a future and a subsequent past.

The concept of the "black swan events", the new Strategic compass and the need of EU Global strategy transformation in a smart strategy, balancing between strategic vision and flexibility

According to the concept of a "Black Swan" event, the organizations and decision makers have to be prepared for unexpected events with severe consequences when they occur.

The 4 criteria of the Nassim Taleb's theory are related to the appearance of:

– events that surprisingly and highly deviate beyond the expected. Typical examples are the events of 11 September 2001; the terrorist attacks in Nice etc.;
– events that have a severe impact and provoke a serious reaction, such as the war of terror resulting from the 9/11;
– events that let people believe in the predictability of such occurrence by using all the pieces of preliminary information and by reading the signs;
– events where the observers decide what is their type (black swan occurrence, or not). For example the terrorist attacks of 11 September are a "black swan" event for the observers, but not for the terrorists (McGrath & Bates, 2019).

Taleb's black swan is a phenomenon related to the inability to predict the future from the past. This is a rejection of the cause-and-effect principle as people tend to cling most tightly to pillars that they see toppling (Krogerus & Tschäppeler, 2017).

In the context of CSDP strategic rethinking process, the Taleb's concept could have an important added value as it shifts the focus from the documentation to action, from strategy to tactics, from solidity to flexibility.

Taking into account the high changing dynamics in every aspect of the world, the implementation of innovative approaches, entrepreneurial mindset, resilience and flexibility is more than ever need not only in business but in politics as well. In order to take profit from the power of the collective knowledge and intelligence, it is worth using in politics some practices and analysis, designed for the business world.

The European leaders should think about the future generations and not in the framework of their political mandates. They have to develop the so called by Simon Sinek – "infinite mindset". It means to make decisions based on long-term strategies that develop long-term strength. It is an infinite minded player's appreciation for the unpredictable that allows them to make changes. One of the key practices for the leaders who want to adopt an infinite mindset, well described by Simon Sinek is the so called: existential flexibility. (Sinek, 2019)

Adapted for the purposes of the current article, the existential flexibility means the capacity to initiate an extreme disruption to a strategic course, in order to more effectively advance the tangible vision of the ideal future - where we are going and what the world we hope to live in is. If the leaders are not cause-driven, if they don't have infinite vision, strategic shifts, even extreme ones, they tend to be reactive and opportunistic. The existential flexibility is always offensive, not defensive.

So the European leaders have to be initiator of positive change, to be proactive and not reactive of the changing world.

In his book "the Infinite game" Simon Sinek determines the existence of two types of games: finite and infinite.

Finite games have known, defined characteristics: they are played by known players; they have fixed rules; they have an agreed-upon objective, with a clearly-defined winner and loser determined by a specific metric; they have a defined ending point; once their objective has been reached, the players stop playing and the game is over.

Infinite games have unknown, indeterminate characteristics: *they are played by both known and unknown players, who may not be easily identified and who may enter and leave the game along the way; *they have no fixed rules, other than some legal parameters; *they have no agreed-upon objective; *there are no clear winners or

losers; *there are multiple metrics that can be used to determine success or failure, and these can be interpreted differently in different situations; *they don't end; *players stop playing when they choose not to play anymore or they run out of resources, but the game continues on without them. (Sinek, 2019)

The Rumsfeld matrix is a useful model for analyzing risks more effectively, based on knowns and unknowns. The former US Secretary of Defence under the Bush Administration – Donald Rumsfeld identify four field of risks: known knowns – known risks with developed countermeasures for their overcoming; known unknowns – known risks that could not be foreseen; unknown knowns – intuition, inner voice, gut feeling; unknown unknowns – "we don't know, that we don't know" [example Pearl Harbor attack in 1941].

(Krogerus & Tschäppeler, 2017)

This model provokes the decision makers' and researchers' imagination and lets them think even about the unthinkable. For this reasons, this approach could be useful in the process of strategic rethinking, in order to be better prepared for overcoming complex risks challenges, as well as "black swan events".

As in today's world economy and geopolitics are becoming more and more interdependent, the contemporary political leaders should learn, think and speak the language of economy and business.

According to the current EU High Representative Josep Borell: *"Today we are in a situation where economic interdependence is becoming politically very conflictual. And what was traditionally called soft power is becoming an instrument of hard power; The Covid-19 crisis has revealed the fundamentally asymmetrical nature of interdependence, and the vulnerability of Europe. Science, technology, trade, data, investments are becoming sources and instruments of force in international politics."* (Borell, 2020)

The high interconnection between economy, international relations and security reveals two symptoms: *the impact of geopolitics on business and of business on geopolitics, as well as * blurring the lines between soft and hard power.

According to the World Economic Forum's Global Risks Report 2019, geopolitical and geo-economic tensions have risen among the world's major powers and now represent the most urgent global risks. The WEF considers the tension between the globalization of the world economy and the growing nationalism of world politics as a growing risk. (Collins, 2019)

The future digital and green transformation of our economies and societies, due to the Fourth Industrial Revolution, as well as to the climate change - even more strongly defined as climate emergency[2] by the Oxford dictionary, will have an enormous impact on the stability and security of our countries, the EU and the world. The appropriate pace to this transformation should be neither too fast, nor too slow, in order to have positive and sustainable results and not to generate negative ones, due to economic and social factors. Thinking innovatively and far-sightedly is key, but acting by creating sense of European citizens' "ownership" of the EU policies, by ensuring their security

[2] Climate emergency is Oxford Dictionary's 2019 Word of the year.

and preventing potential civil conflicts, is a must. EU policy-making should be more for the people and by the people.

There a lot of high expectations towards the citizens to embrace change and to acquire the so called skills of the future, but at the same time most of the decision-makers and the administration of the institutions at national and European level continue to operate in the same manner as before. They couldn't perceive the forthcoming economic turbulences the way private and non-profit sectors do. Thus, it is a challenge for them to step outside of their comfort zone and to adapt in a flexible way to the new realities.

Albert Einstein once said that: "*we can't solve our problems with the same level of thinking that created them.*" For this reason it is important the decision makers and their teams (who create the rules) as well as the public servants at the national and European administrations (who introduce these rules and monitor their implementation) to have telescopic and kaleidoscopic thinking.

The faster we feel the pulse of the time we live in and the contemporary challenges we are facing, the more adequate our answer to those challenges will be. In this regard, the new strategic models, skills and competences, and the striving for innovation shouldn't be reserved only for the business sector.

According to the World Economic Forum, the top 10 skills of the future that each of us should acquire for 2025 are as follows: 1. Analytical thinking and innovation; 2. Active learning and learning strategies; 3. Complex problem-solving; 4. Critical thinking and analysis; 5. Creativity, originality and initiative; 6. Leadership and social influence; 7. Technology use, monitoring and control; 8. Technology design and programming; 9. Resilience, stress tolerance and flexibility; 10. Reasoning, problem-solving and ideation.[26]

What is interesting about these skills is their versatility, as they could be used for business and personal purposes. So, they can be applied also in the process of strategic rethinking. in order not just to identify the symptoms of the new risks and challenges, but also their causes. Critical thinking and reflection, out-of-the box thinking through creativity and imagination, complex problem-solving and risk assessment are very important skills for predicting the unpredictable and for better proactive management in case of "black swan events", characterized by high level of uncertainty and negative impact.

As it is difficult to predict the unpredictable, according to Taleb, it is important to create systems which can be resilient to the "black swan events" and which can be managed by well-prepared people. (McGrath & Bates, 2019

The planning process should create a certain flexibility of the plans. It gives the opportunities for flexible thinking and actions, for having a comprehensive picture about the available route assessment.

In this regard, it is important for the EU as a global player to have a well-defined ultimate goal and to practice existential flexibility by: *being an engine rather than a survivor in a fast changing world; *being aware about the knowns and unknowns; *creating a resilient system to the "black swan events"; *planning so as to be flexible enough when needed. This means not only to have a clear strategic vision, but also to take tactical measures.

The European Union should determine *its global position, *the speed at which it has been moving, integrating and positioning itself within the international relations, and *the time it is going to need for both decision-making, as well as for the formation of a strategic and tactical vision in the context of dynamic changes in the security environment.

The Strategic Compass Initiative is a result from the need for a strategic redefining of the security environment taking into account the current and new global threats and challenges in an interdependent world.

As a response to the ambition of the new European Commission to be "geopolitical" in its way of thinking and acting, and to undertake bold steps to build up a genuine European Defence Union, the process of drawing up a complementary EU security document started. The Strategic Compass is foreseen to *contain a unified analysis of the threats facing up the Union, and *better link the EU strategic and operational needs with the Union capabilities.

This initiative was launched during the German Presidency of the Council of the EU in the second half of 2020 and it is scheduled to be finalized during the French Presidency of the Council of the EU in 2022. There is a kind of symbolism related to the French-German engine, which is always seen as a European driving force.

2021 will be important for the successful drafting of the new document in the field of EU's common security and defence, as in the first half of the year a strategic dialogue between the Member States will take place, and in the second half – the drafting of the Strategic Compass, so that it could be adopted in early 2022.

Taking into account what has already been presented, it can be noted that there are high expectations towards the new initiative. In order for the European Strategic compass to be more than a just a document, it is important to consider the tendencies shown by the SWOT analysis, as well as to contribute to the future transformation of the EU Global strategy into a smart strategy.

The high complexity of the security threats (hybrid, cyber, with multidimensional aspects such as social, environmental, healthcare, energy, youth, economic and financial) and the increasing frequency of the "black swan events" lead to the need of a new approach and modernized Global Strategy for the Foreign and Security Policy, balancing between strategic vision and flexibility. This calls for imbuing it with a smart design that rises to new realities and challenges.

Conclusion

The current article is analyzing the Common security and defence policy in the qualitatively new environment and legal framework after the 2009 Lisbon Treaty which reorganises EU Foreign Policy and Defence, five years after the adoption of the EU Global strategy, the new mandate of the European institutions (2019-2024), the new Multiannual Financial Framework post 2020, affected by COVID19 and the start of the process of strategic rethinking through the Strategic compass initiative.

As Peter F. Drucker said: "unless commitment is made, there are only promises and hopes; but no plans." In this regard the article focused on the need of foresight planning and follow-up actions in order: the elements of CSDP's SWOT to be well

managed (the strengths to be kept, the weakness to be neutralized, the threats to be mitigated) as well as *EU to be better prepared for "black swan events".

The Strategic Compass initiative can be transformed from opportunity to strength if during this period of two years: *the power of the European collective intelligence and knowledge; * desire for strategic empathy in overcoming the common and complex challenges in the security environment;*the resources available for optimization, as well as for greater compatibility and complementarity of the capabilities, are mobilized in the best possible way.

If the EU wants to act on the global stage, a common approach should be found, taking note of what Europeans share in terms of strategy, interests and perceptions of the world. European leaders have to adopt an infinite mindsets and existential flexibility in order to be able to define their national viewpoints through the value it adds to common defensive potential, alongside sharing common strategic priorities formed through consistency and information exchange. The EU should be defined as a smart power, meaning a combination of hard and soft power to give effective strategies and flexible planning adapted to diverse situations and being proactive rather than merely reactive to changes in the security environment and in the world as a whole.

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CURRENT CHALLENGES FACING THE EUROPEAN UNION DEVELOPMENT AS A SYSTEM

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Abstract

The political and the institutional systems of the European Union (EC, the Union) are complicated system organized on many levels - regional, national and European. Many factors affect the organization and the functioning and the EC institutions. They face continuously in their work challenges and have to solve new arising problems in the current dynamic world. The normal work and the future development of EU as a unique political and economic organization of voluntarily joined European countries depends vastly on the institutional system abilities (capacity) to take on time efficient short-term and perspective decisions. In the present article we have tried to identify and to classify the most important challenges in the current development and the main factors - external (global) and internal, affecting the Union and as well as their complex effects and consequences.

Keywords: *European Union, EU, System, Challenges, Political System, Capacity, Institutions, Institutional System*

JEL: *F, N*

Intrroduction

As a complex system, built on many levels, the political system of the European Union (EU) is in constant motion and development, as well as adapting to changing conditions in the world. The modern world is characterized by great dynamics in the scientific and technical aspect, global changes in the field of economics and markets, political reconstruction of political influences, and, of course, social changes in societies. On a daily basis, European institutions have to solve many tasks in the service of their citizens and to achieve the desired goals of the Union. The ability (capacity) of the EU to find adequate solutions for the emerging imbalances in the system are of crucial importance and the EU institutions capacity assessment should be evaluated not only on the basis of current results but also from the standpoint of the system objectives and the impact of the achieved results.

The main challenges and problems in front of the EU development will be considered as factors in nature of *global* (external to the Union) and *internal-organizational* (internal to the Union). In terms of the duration and importance of the development of the Union over the time, these factors can also be classified as factors with *short-medium* and *long-term* impact. It should be emphasized that this division is conditional, and the action of factors is almost always complex, and the individual factors are interrelated and largely intertwined. Their timely identification is essential for the development guidelines of the EU. The external factors cause changes within the system, while the internal changes and trends in the development of the Union have their

impact on the behavior and reaction of the EU to the external environment in political, economic and social nature.

1. External problems and factors for the Union

The European Union and its member states are part of the global world system in all aspects - cultural, economic, political and social. Changes in the world affect European development, but also both the EU and the democratic community of member states influence these changes. In the group of *global challenges* we will consider the most significant conditions and factors that determine world development, and to which the EU should adequately adapt.

1.1. Globalizing markets, changes in global economic centers and the EU's place in the world economy

The EU takes its name from a global economic force in a world with a huge human potential of 500 million people, with the world's largest trading market and the second most used currency in the world - the Euro. The EU is the largest donor worldwide of humanitarian and development aid - 56%, (compared to the US which share is 24% on this indicator). The EU is a leading force in the development of world science, culture and scientific researches.

The development of the world is no longer only determined by increasingly globalizing markets and the production of goods and services, but globalization is deepening the links and dependencies between countries and peoples in the social, cultural and religious sense. Problems, related to EU representation as a world leader, require a more adequate and coordinated common international policy of the Union - in economic, political and social aspects.

At the same time, there are a number of negative trends in reducing the influence of the EU around the world in almost all economic indicators and strengthening the positions and influence of new world players such as China, India, Brazil and Mexico. In the long term, these forecasts are a tendency to deepen in the next 20-30 years.

1.2. The changing international political environment and the EU's relations with the world powers

The globalization of the world, the negative environmental changes and the political and military confrontation and smoldering military conflicts in several parts of the world lead to inevitable interdependence between countries. The balance between the major world players is constantly changing, and real efforts are needed to avoid worldwide confrontation and wars. The development of the EU is part of world change, giving its international policy a key importance. In this policy, the basis for the Union has always been both the protection of human values and peace, as well as the interests of the Union as a community of many and diverse countries. Coordinating the policies of individual countries with the common rules and principles of the Union makes the EU a world political and economic leader. Individually, the impact of individual member countries would have been much less significant, while common decisions

would have guaranteed much better results. This is especially noticeable in relations with major world players - USA, Russia, China, Japan, etc., in the political and economic aspect. Therefore, while maintaining their relative autonomy and authority in this area, individual member states feel obliged to follow a common foreign policy towards other countries of the world.

1.3. Migration pressures caused by the military conflicts and by the external economic migration

The great migrant crisis (2014-2016) it showed that the EU has not built a workable system to deal with asylum seekers from regions with military conflicts, migrants seeking political asylum from totalitarian regimes and people seeking better living and working conditions in Europe from the poor and the starving regions of the world. It should be noted that the problems associated with the migration crisis have served as a catalyst for nationalist manifestations and movements throughout whole Europe. For example, in 2015 and 2016 more than 1 million people have arrived in the EU, most of them refugees from the war in Syria. About 90% of refugees are transported across the Mediterranean at great risk to their lives, using the services of traffickers. Thus required the EU to set up an organization to rescue them and, according to the EU, in 2015 and 2016 more than 400 000 people were rescued, more than 2 500 traffickers were detained and 375 vessels were stopped. The main victims are the countries of the Mediterranean border of the Union - Greece, Italy and Spain. These figures clearly show the scale of the problem and show that no country can deal with such a problem on its own, and that the urgent support and cooperation is needed to avoid humanitarian crises in the EU and beyond. The main flow of emigrants goes to the rich part of the Union - the Schengen countries and the Eurozone.

Problems remain with the lack of coordinated control over the external borders of the EU, as well as the lack of agreement within of a common migration policy to share the burden of migration pressure between EU members.

1.4. Aspects of the defence and security of the EU in the light of prolonged and emerging local military conflicts and terrorism

The unstable political situation on the EU borders, migration pressures and nearby local military conflicts, impose an adequate response on the part of the Union to create institutional capabilities, inside and outside NATO.

From the Second World War to the present day, the EU's defence capabilities have always been viewed through the prism of NATO, where the leading role was that of the US. United States of America has the largest financial contribution to support the Alliance. The new political line of President Trump provides for the reduction of the US funded spending on the maintenance of the Alliance and for an increase the share of each country up to 2% of GDP. It is obvious that the political realities of the 21st century require a re-evaluation of NATO's role in European security. The possibility of creating a European Defence Force to complement NATO forces is becoming increasingly important for EU security. The idea was launched in late 2017 by the French President Emmanuel Macron and is generally supported at the European level

(i.e. from the European Commission). The direct basis for this idea is the withdrawal of the United States from the Intermediate-Range Nuclear Treaty with Russia (USSR), which puts Europe in the position of a hostage of these two nuclear superpowers and a possible arena of military action. In his speech Emmanuel Macron also points to the likely main enemies that Europe should fear - Russia, China and even the United States of America.

It should be noted that this idea is cautiously welcomed by many of member countries in the Union. The understanding that military issues are one of the basic elements of the sovereignty of nation states is the reason for skepticism. Also, there is different approach for strengthening the military power of the Union in the different countries. The countries bordering Russia assess the threat to their security as a serious problem and seek to solve it by increasing their military power. Other states, for one reason or another, pay more attention to the use of "soft" approach with Russia, such as negotiations, diplomacy, sanctions, etc., to overcome conflicts and military opposition, etc.

The process of discussing the future of the European Security and Defence Union, which will aim at a coordinated pooling of the forces of individual countries in the most efficient manner and with the least duplication of functions and costs (especially with regard to common costly scientific and technological developments and research), is likely to be further exacerbated.

1.5. Revolutionary changes in the development of science and technology

Scientific and technological innovations literally daily change the conditions of life and production around the world. They act as a powerful catalyst for the development of economies and societies. Historically, Europe has always been a leading force in the development of science and technology. The EU takes into account the need for additional efforts in order not to lose its role in the world.

The development of science and technology requires huge financial and human resources and their targeted expenditure. The voted funds in the EU budget for the development of science and high-tech developments in recent years, indicate the firm position of the European Parliament and the Council that this area is a priority for the Union. As an example, the program "Horizon 2020" (period 2014-2020) has a budget of 80 billion euro and for the period 2021-2027 this program will reach 97.6 billion euro. Together with the funds in the Fund "Invest EU" and the program "EUROATOM" the budget should be up to 100 billion euro for this period.

Nevertheless, it is clear that the need for investments in science and research works is becoming even more focused and unifying in both the national and pan-European aspects. The coordinated work of teams from different countries in separate research areas will lead to increased efficiency and exchange of experience in the research community, combined with the specialization of individual countries and the avoidance of duplicate costs.

2. Internal problems and challenges for the Union

For our analysis, it is equally important how European institutions react to the problems and contradictions, existing by EU nature, as well as those new arising

within the Union. Because of the specific way the EU political system is organized at several levels, it exists due to the inter-institutional balance between the individual levels. Thus, it preserves and develops its activities, finding compromise solutions for existing and emerging problems. The future development of the Union and its very existence depends on the search for adequate solutions. Therefore, we will pay an attention to the reactions of the political and the institutional system of EU on some of the most significant internal issues that, in our view, determine and will determine the state of the Union in the coming years.

2.1. The presence of significant differences in the overall socio-economic development of the members of the Union

This is one of the most important and difficult problems to overcome in the consolidation process of the Union, because of the need for long-term solutions and measures in this area. By their nature, these differences are essential and structurally defining problems for the Union, the fruit of long-standing development of individual countries, under different conditions and specifics, and the homogeneity of the Union depends on their solution. These differences are reflected to varying degrees in the expectations, interests and goals of individual states in the formation and implementation of the common policy of the Union.

The differences in EU development visions are obvious. The Larger and the more developed in economic sense countries (Germany, France, The Netherlands) focus their efforts on the common market and agree to make large contributions to the EU budget, given the fact that most of their products are exported and their implementation in the European market is relevant to their economic development. France, as a major agricultural producer, additionally holds EU funds for agricultural subsidies that stabilize its production. The same goes for Poland. The less economically developed countries (from Central and Eastern Europe) pay special attention to the development of the EU cohesion policy and related funds which give them possibility to continue the development of almost all spheres of their economies and social lives (especially for the development of the infrastructure). From this point of view, all the efforts of those countries are aimed at allocating a large share in the rapprochement funds and infrastructure and energy development projects of the EU budget.

Attempts to impose common EU standards in wages and social security should be aimed at bringing the most backward countries closer to the average European level, without violating the market principles of the free movement of capital, goods and people.

2.2. Different views of major countries on the development of the Union and the European integration

There are differences in visions for the development of the Union between the major countries, called EU development engines, for the form of governance of the Union, for the speed of European integration and the scope of European powers. The doctrines of "more Europe" and/or "Europe at two speeds" occur in contrast to the more moderate

desires for EU development and place emphasis on development based on the common market and, accordingly, on interstate agreements in a number of areas".

2.3. Problems arising in relationships between institutions in the political system of the EU

An institutional system similar to each system is also characterized by their internal contradictions generated by different roles of its elements and the process of empowering institutions in the common activities. In the EU institutional system, this is further complemented by its hierarchy at several levels. They have their own specifics and are also the subject of research.

The way in which the EU's political and institutional system is built involves contradictions on various issues between national executive bodies and the European structures. This confrontation and the proof of individual levels are the basis for achieving a healthy balance and the development of the Union as a whole. This is most clearly seen in the definition of the budget, in which each country seeks to find funding for its own priority areas, while the institutions of the EU seek in the balance of the budget allocation an achievement of the Union common priorities.

The contradictions can be entirely political and they often appear especially clearly in electoral periods, in political struggles of parties or in the periods of pressure from the opposition or civil society on the government. The national elections (and the EU is no exception) are usually conducted in atmosphere of populist promises by which voters are attracted to the party and very often the political rhetoric can also take on an anti-European sense.

The maturity of any political or managerial system is measured by its abilities to resolve the problems and the disputes between the particular institutions arising from its natural structure and activities. In the EU, as a complex political and institutional system, there are also problems related to the relationship between the institutions themselves at the European level. "Cabinet games" and confrontations between European institutions are usually left out of the spotlight. The EU always officially reports disagreements, but it is not always possible to find the roots of these inconsistencies in a particular problem.

There are two types of confrontations:

- A political nature confrontations, generated by an understandable rivalry for more power or for the recognition of the right of a certain power between the three main institutions in EU. The history of the Union and its institutions is a long process of sharing "European power", and this is in the direction of reducing the powers of the Council of EU in favor of the European Parliament. Deep behind this struggle there are fundamental issues such as power in the legislative process, the development of the Union in a global perspective and its representation to the world.
- Disputes and confrontations arising from mutual control that these institutions will exercise on the basis of the EU legislation in their day-to-day work in determining and allocating the Union's budget, drafting and discussing projects for regulatory documents and much more. These disputes are dictated by the

different roles and powers that the separate institutions hold and wield in the EU's overall institutional system.

- Disputes from various references to given case studies, situations, opinions and decisions. The EU is based on the balances and trade-offs to overcome differences of member countries and the involvement of the state mediators in processes of governance. These disputes and struggles are part of the political struggle in any democratic political system. If the opposition are set for system rules, this is normal and even helps to control the activities of the institutions, developing their potential and develop the entire system, finally.

2.4. Demographic problems and problems of quality of the labour force and unemployment

Europe has generally had demographic problems for decades, associated with the low (and even negative) population growth as a result of low fertility, an aging population and high life expectancy. Almost all countries have a need for labour, both in quantity and quality sense, to support a developing economy and the social standard and quality of life achieved in society. The European common map, like regions in individual countries, is characterized by varying degrees of socio-economic development, which generates internal labour and social migration for the community - from poorer countries/regions to richer and socially settled ones. Studies show that these migration processes solve the labour shortages in host countries to some extent, but also at the same time other new problems arise. In the more functioning markets of wealthier Western countries, the labour migration is a mean of attracting labour with better living standards and a solution for labour force shortages. This process creates at the same time the opposite negative effect - the regions radiating labor emigrants, begin to feel a shortage of labor resources in combination with the deepening demographic crisis. At the same time, the immigrant host countries are understandably beginning to feel deficits in their social funds (health, education, pensions) and must set aside increasing sums to strengthen social funds. This is frowned upon by local citizens because it involves a higher tax burden on working and holding back pension growth. One unacceptable phenomenon familiar for many years, along with labor migration, is the marked migration of able to work people who want only to consume the social benefits of a higher standard of living without working and contributing to an increase in national income and income in public funds. This "social migration" acts demobilized on the working citizens.

Conclusions

The institutions of the EU, although constantly criticized, are the basis of the political system of the Union. The adequate maintenance of their capacity is of particular importance given the complicated decision-making in EU which takes place in a complicated environment with many levels in the system and in the absence of a state on the EU level with typical clear distinction between the three types of authorities (legislative, executive and judicial). Institutions, with their capabilities, are called upon to bring through a series of (substantial or only cosmetic) Union reforms, to meet today's

challenges. Whether it is in accordance with the guidelines for improving the integration or a process of increasing the burden on national authorities in the political system of the Union, the overall co-ordination and direction of development in the right direction will remain the prerogative of the EU institutions.

The EU political system and institutions with their potential are in a certain balance, and their balance is ensured by the mutual control they impose on their activities. Any attempt at structural change in the institutional system alone would not be effective, but could also lead to unpredictable consequences for the system. A thorough analysis and debate on the necessary reforms in the common EU organization is required. This will make it possible to find the most effective and strategic development recommendations acceptable to all members of the Union.

The legitimacy of the Union in the face of citizens and their national governments is a key factor influencing its governance. The development of the EU as a comprehensive system can only be realized if the euroscepticism is overcome. The other will be perceived as a result of political bureaucratic struggles and attempts to preserve the undesirable status quo of citizens, which has led to the need to talk about reforms so keenly. It is obvious that the citizens of the Union are not satisfied with the capacity of institutions of EU and its implementation. They assess the performance of institutions by the impact that the outcome has on their lives. They do not feel that their problems can be addressed in a timely, effective and efficient manner. Any EU reform will first require a preparatory period and a detailed assessment of the likely side effects in the transition period. In this transition period, along with organizational changes, attention should be focused on addressing and overcoming by all means the existing euroscepticism on the part of both national authorities and of the citizens.

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EFFECTS ON BULGARIAN MARKET FROM PARALLEL TRADE OF MEDICINES IN THE EU

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Abstract

The legislation on wholesale trade in medicinal products is the basis for the drug supply on all EU markets. In Bulgaria, the implementation of parallel trade in medicines has been allowed. This trade practice and its principles lead to both positive and contradictory effects affecting both, Bulgarian and European pharmaceutical markets.

The aim of this study is to present the characteristics of the parallel trade of medicines in Bulgaria and to analyze the subsequent effects of this commerce activity. The study is also paid attention to the mechanisms which have the potential to mitigate more negative effects of parallel trade.

Keywords: *parallel import /export of medicines; reference pricing, effects, Bulgaria; EU*

JEL: *F1*

Introduction

The European Union has established the free movement of goods, which covers the parallel import of goods in the EU. (Grigienė et al., 2019) The parallel distribution of medicinal products in the EU has a long history of over 40 years. Its effects have been observed in Bulgaria only for the last 20 years. In the last few years, there has been an increased focus by pharmaceutical companies on their sales and marketing activities. (Guda and Lynghdoh, 2018) The topic of the parallel trade of medicines is highly interesting and relevant as it traces the benefits of parallel trade in medicines, as well as the vicious practices created as a result of this activity. There are still some uncertainties as to whether this activity is legal and whether the benefits for Bulgarian society are tangible, because drug prices in Bulgaria are some of the lowest compared to other EU countries. It is interesting to observe how companies also stimulate parallel trade in medicines, while at the same time neutralize some vicious practices at the company level.

The *aim* of this study is to present the characteristics of the parallel trade of medicines in Bulgaria and to analyze the subsequent effects of this commerce activity. The study is also paid attention to the mechanisms which have the potential to mitigate more negative effects of parallel trade.

1. Nature of parallel trade of medicines

The Parallel trade is a lawful activity in the EU, and for the territory of the Republic of Bulgaria, it is regulated in Chapter Nine (Title amended, SG No. 71/2008, effective 12.08.2008) by the national Law on Medicinal Products in Human Medicine (LMPHM). The term "parallel" emphasizes the fact that the original products are imported across country borders, creating a parallel channel for distribution allowed by the producers. Even though parallel trade does not refer to illegal or informal sector activities, nor does it have to do with pirated or counterfeit goods, it is commonly referred to as "gray market". Parallel trade represents one of the most controversial issues in the international trade-policy ground and has raised difficult questions, especially in the global pharmaceutical industry. (Bennato and Valletti, 2014)

In general, the parallel trade of medicines is divided into import and export. The import aspect of this trade is widely studied from a legislative point of view. In the Bulgarian LMPHM the definition of medicinal products from parallel import is specified in Article 214. (1); (2) and reads as follows: "a medicinal product authorized for use in another Member State may be imported in parallel on the territory of the Republic of Bulgaria when it is identical or similar to a medicinal product authorized for use in the Republic of Bulgaria under this Act. Within the meaning of para. 1 the same or a similar medicinal product is one which has the same qualitative and quantitative composition with respect to the active substance (s), is supplied in the same dosage form, is supplied in the same primary package, with a similar graphic design of the package". According to Art. 215. (1) (Amended, SG No. 71/2008, effective 12.08.2008) of the LMPHM, for obtaining a permit for parallel import of a medicinal product on the territory of the Republic of Bulgaria, the person under Art. 213 shall apply to the Executive Director of the Bulgarian Drug Agency (BDA), in which he shall indicate the Member State from which he will carry out parallel import of a medicinal product.

According to Manolev (2018) the term "parallel import" means that a medicinal product for which the BDA has already issued a marketing authorization is imported into Bulgaria through different distribution channels than those in the contract with the holder of the patent. Some small differences in the co-administered product are acceptable and provided that the therapeutic effect does not deviate from the original and directly distributed product.

The medicinal products imported into Bulgaria are subject to a repackaging process, and during the repackaging, the secondary packaging (box) and the leaflet of the imported medicinal product are replaced with the ones approved by the BDA. In addition to changing the secondary packaging and the leaflet, a sticker is placed on the primary packaging (blister, sachet, bottle, etc.) in accordance with the national requirements laid down in the Bulgarian legislation. The content of each packaging material is approved by the BDA. The repackaging process is carried out by the enterprises holding a permit for the production of medicinal products, issued by the BDA and complying with Good Manufacturing Practice (GMP).

Marinkova (2018) as an Executive Director of the Bulgarian Association for the Development of Parallel Trade in Medicines (BARPTL) claims that Bulgaria is benefitting more and more from parallel distribution, as in the last 7 years the number

of co-imported drugs has increased from 4 in 2011 to 114 in 2018. Marinkova added that currently distributed products of parallel import with a prescription show a price reduction in favor of consumers from 20% to 50% reduction in prices for medicines prescriptions for diabetes, cardiovascular disease, chronic pain, etc.

To summarize, parallel import or distribution of medicinal products is based on the free movement of goods within the EU. The principle of free movement of goods implies that companies can legally trade in pharmaceutical products without the consent of the original manufacturer across national borders within the European Economic Area (EEA).

At the same time, the parallel export of medicines is based on the differences in the prices of medicines in Bulgaria and in Europe. Cheaper medicines are exported from our country to countries with higher price markets. In Bulgaria, the prices of medicines are some of the lowest in EU which stimulates the export of medicines after they are initially imported into the country. According to Marinova (2018) the volume of legal parallel exports of medicines in Bulgaria equals to about 7-8% of the total drug market, or BGN 250 million per year.

2. Specifics of parallel export and import in Bulgaria

This paragraph reveals both export and import characteristics of the parallel trade.

On the territory of Bulgaria, the parallel export of medicinal products can be carried out by any licensed wholesaler. Trade within the Member States of the EU is called Intra-Community Supply (ICS) and it is not subject to mine control. Licenses for wholesale trade in medicinal products are issued by the BDA. The exporting trader sells the goods to other wholesalers in the specific country. These intermediaries, in turn, distribute medicines to retailers: pharmacies or hospitals. The quantity of exported products has not been controlled so far. The cases where a particular drug is included in the list of temporarily banned drugs for export are some exceptions. This list is prepared by the BDA on the basis of signals of a shortage of the specified drug on the market.

Further analysis is made according to comparative data on previous periods of consumption and on the quantity of imported product. For the purposes of the analysis, all traders are obliged to provide weekly information to the BDA on the quantity of purchased and sold drugs, as well as stock availability. This data must be collected and summarized in a Specialized Electronic System for Tracking and Analysis of Medicinal Products Included (SESTAMP) in the Positive Drug List (PDL) of the Republic of Bulgaria. (Issuance of a permit for wholesale trade in medicinal products on the grounds of the Law on Medicinal Products in Human Medicine - Art. 202).

As a result of Decision № 1 of January 29, 2015, on constitutional case № 5 of 2014, the Law for amendment and supplement of the LMPHM was adopted (SG, issue 18 of 2014), imposing a restrictive regime on the export of medicinal products, including Intra - Community supplies within the EU. A new obligation has been created for wholesalers of medicinal products to notify the BDA of any export of a medicinal product from the territory of the Republic of Bulgaria, which is included in the PDL under Art. 262, para. 1. The PDL includes all drugs that are paid for in full or

in part by the State fund. Thus, a permit regime is created, as the Executive director of BDA may refuse the export of the specific medicinal product (Decision№ 1 of January 29, 2015, on constitutional case № 5 of 2014, published in the State Gazette of the Republic of Bulgaria).

In 2018, in LLPHM is introduced Art. 217b. (New, SG No. 18/2014, amended, SG No. 84/2018, effective from October 12 2018) and a SESTAMP was to be established in the PDL, which is administered and maintained by the BDA. The creation and maintenance of the specialized electronic system under par. 1 has to be carried out in compliance with the following principles:

guaranteeing up-to-dateness and accuracy of the provided and stored data; providing an appropriate environment for data exchange; guaranteeing regulated access to the data in the electronic information system in compliance with the requirements of the law; ensuring interoperability and information security.

At the beginning of 2021, the above-mentioned electronic system, which would monitor the quantities of medicines in Bulgaria, is already operational.

The mechanisms introduced by the State can be considered justified because in this way the shortage of certain drugs on the Bulgarian market will be limited. Given that more expensive drugs are of greater interest for export, due to higher price margins and higher profits with lower sales volumes, they should be the subject of monitoring and more throughout analysis.

Other drugs subjected to re-export are the drugs imported from major world manufacturers. Due to the lower prices of medicines for diabetes, rheumatoid arthritis, cancer, asthma, etc., they are attractive for export to Western Europe. There they are sold at a high mark-up, providing solid profits for licensed re-export companies. Such anomalies should be curtailed after the introduction of SESTAMP.

Due to the accession of Bulgaria to the EU, parallel import has become essential in the wholesale of medicinal products (Vekov, 2011). When importing medicines, the holder of the marketing authorization in the country of manufacture (or in the representative office) submits documentation for the specific product to the BDA, thus applying for registration for use of the product on the territory of Bulgaria. The importing trader complies with the regulatory and registration regime for import. Manolev (2018) claims that parallel import has existed in Bulgaria since 2011 and started with 4 medicinal products. To date, thanks to the experience gained by importers and the BDA, on the territory of Bulgaria 107 medicinal products are subject to parallel import.

Some of the imported medicinal products may have a different trade name in the country from which they are imported than that of the product registered in Bulgaria. In these cases, the parallel imported medicinal product assumes the name of the already registered identical or similar product in Bulgaria. This name is written on the sticker, on the leaflet and on the box. In addition to the trade name, there may be differences in the types of packaging offered by the parallel importer and those offered by the representative of the Marketing Authorization Holder (MAH). As an example, it can be pointed out that the package leaflet of the already registered medicinal product in Bulgaria mentions packs of 10 and 20 tablets, and the leaflet of the parallel importer may mention packs of 10, 20, 30, and 40 tablets.

3. Positive effects of parallel trade

The main mission of drug regulation in the EU is to protect public health, to ensure the formation of a single European market for medicines, to facilitate public access to medicines, and to allow gradual passage from national to international trade practices. (Vekov, 2014) The meaning of parallel trade lies in the differences in drug prices in the member states. It is applied when, after the mandatory delivery and repackaging, the medicines have a lower price than those on the local market. Parallel trade is used to contain the cost of medicines in the large markets of the Member States, which have high drug prices and are sensitive to them.

According to BADPTM (2021), the parallel distribution of medicines counteracts price differences between national markets within the European Economic Area (EEA). Parallel distributors buy products marketed by the original pharmaceutical manufacturers at a lower price in one country and sell them in another country where the price is higher.

This type of trade is legal under the rule of regional exhaustion of trademark owner law applied in the EU and the EEA. Parallel drug companies are an integrated part of the European pharmaceutical market and the drug supply chain, adding value to society by introducing price competition in the market, and being an additional filter for checking product safety. Companies engaged in the parallel distribution of medicinal products are licensed by the regulatory authorities of the respective EU member state and operate in accordance with the requirements of good practices for the production and/or distribution of medicinal products. Licensed wholesalers supply medicines from the original manufacturers with a single source in Europe, and they have been carefully checked in accordance with EU legislation and national regulations that apply to pharmaceutical manufacturers. Medicines produced in the same factories and sold through the same channels are identical to the products distributed by the local brand owner but are cheaper.

4. Contradictory effects of parallel trade

An example of a contradictory practice caused by the possibility of parallel export of medicines is the price pressure from the so-called "Reference countries". According to the National Council on Prices and Reimbursement of Medicinal Products and the LMPHM, the state regulates the marginal prices of prescription medicinal products. The Law regulates the prices of medicinal products included in the PDL and paid with public funds in accordance with the lowest reference prices in EU member states. Ordinance on the conditions, rules and procedure for regulation and registration of prices of medicinal products (amended and supplemented, SG No. 26 of 29 March 2019) defines 10 countries to which Bulgaria refers: Belgium, Greece, Spain, Italy, Latvia, Lithuania, Romania, Slovakia, Slovenia, and France. Countries focused on expanding their healthcare coverage are increasingly using external reference prices for pharmaceuticals. The scarce evidence shows that reference pricing seems to lead to narrower price windows with the risk of lowering prices through high-priced countries and elevating prices in low-priced countries. External reference prices, also known

as international reference prices, international price comparisons, or cross-reference pricing, are defined by the WHO and are a policy in which the government compares the price of medicine with one or more other countries in order to derive a reference price to determine or negotiate the price or rate of return of a product in your own country or context. External reference prices are a price regulation tool used to limit costs and to ensure that the price paid for a pharmaceutical product in a particular paying country does not unreasonably exceed the price paid in comparable countries. (Holtorf et al., 2019) Reference pricing policies are often seen as progress in building and expanding health systems to universal health coverage. In this way, a low pricing policy is maintained.

Make an illustration with one simple example: if an expensive drug, for example for rheumatic disease, in Bulgaria is priced at 500 euros, and in Germany, it costs 1000 euros, registered commercial companies are interested in exporting the drug from Bulgaria to Germany and making a profit. However, these turnovers will be realized faster if the commercial companies export the respective medicine to the other market, where the price of the medicine will be lower. In this way, the victims are the patients themselves. On the other hand, the company's headquarters made losses - instead of selling the drug in Belgium for 1,000 euros, it will be exported from Bulgaria for 500 euros. It is evident that parallel trade, by offering competition outside authorized distribution chains, is likely to reduce profits for the original manufacturers. (Maskus and Stähler, 2014) This raises problems for the governing structures of the local representation. As a result of these problems, the company's headquarters is looking for methods to minimize these bad practices.

If we follow the above example with rheumatological medicine, in order to limit the export to other countries, the companies start dispensing the respective medicine only when information about a specific patient is provided. A protocol for prescribed treatment is usually required (copy of epicrisis; ambulatory sheet, etc.). After providing this information, the delivery of the medicine is allowed. All these procedures are again to the detriment of the patient, as the process becomes more difficult and slows things down. Companies also apply other methods to regulate the distribution of drugs. The quantities available in the warehouses are constantly monitored. It is not allowed to accumulate excess cash for a long time to come. Thus, there can be no surplus to be placed on markets other than the quantity of medicines destined for the local market. Distribution is also regulated as companies load and operate with different warehouses. In this way, companies become flexible and can restrict those distributors who are tempted to carry out unregulated exports.

Valev (2018) confirms that there is another reason for the lack of specific drugs in our country. Bulgaria is a very small market and due to the Bulgarian regulations, according to which manufacturing companies must register the lowest price in the EU, Bulgaria is becoming an uninteresting destination for drug trade. Then companies do not register their drugs. The reason for this is that at the first registration of a medicinal product, it does not take the approved price of the already registered product, on the contrary- it goes through a process of referencing and re-registration. The ordinance as a by-law should have the same principles with respect to parallel import products as set out in the LMPHM. Namely - the parallel imported product to "step" on the al-

ready made registration by the first importer. This means that medicinal products from parallel imports must receive the price of the medicinal product already existing in the registers of the National Center for Prices and Reimbursement of Medicinal Products. In case of a change in the price, the first dealer is obliged to adjust the price within a reasonable time in accordance to the change that has already entered into force. The lack of certain medicines could also be explained by supply disruptions due to logistical and regulatory difficulties. Over the last two decades, pharmaceutical companies have relocated much of their production abroad and increased the use of subcontractors. Approval by many different national regulators makes the system more cumbersome and time-consuming.

Conclusion

Pharmaceutical parallel trade in the European Union is a large and growing phenomenon, and hope has been expressed that it has the potential to reduce prices paid by health insurance and consumers and substantially to raise overall welfare. (Kanavos and Costa-Fond, 2005) However, the parallel drug trade in international trade that doesn't simply have a one-sided effect. On the one hand, there are positive effects for the Bulgarian pharmaceutical market, such as wider access to medicines at lower prices. On the other hand, parallel distribution is a reason to practice vicious activities at a company and inter-European level. Results and conclusions of research in this field are very different, sometimes even contradictory. (Bart, 2008) However, it is expected that this trade practice will continue to be stimulated within EU countries. The incentives will be expressed in the liberalization of the EU legal framework, as the main reason for this will be the goal for lower prices of medicines in each country, including Bulgaria.

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