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THE GEOGRAPHY OF TRADE AMONG THE EUROPEAN UNION AND THE EUROPEAN NEIGHBORHOOD POLICY COUNTRIES[4]

The paper analyzes empirically the geography of trade flows among the European Union countries and the European Neighborhood Policy countries. Focusing on the period 2000-2010 and utilizing trade data derived from COMTRADE Database, the paper draws conclusions with respect to the European Neighborhood Policy undertaking. The empirical analysis of the paper highlights that the European Neighborhood Policy countries are engaged in an asymmetric, inter-industry, type of trade activity with the European Union countries, facing serious difficulties in restructuring and diversifying their productive bases. Hence, the trade component of the European Neighborhood Policy does not provide a solid stimulus in the process of "neighbourhood Europeanization". The findings of the paper provide valuable insight to both economic integration theory and policy-making, and, albeit specific to the European Neighborhood Policy countries, may be relevant also to other countries currently deepening their integration with the EU.
JEL: F12; F14; F15

1. Introduction

The recent European Union (EU) enlargements brought the borders of the EU to a set of countries in the East with historically less intensive economic relations. These countries have been part of the (former) Soviet Union and are characterized by lower development levels and significant institutional and structural differences. At the same time, in the Southern and the Eastern rim of the Mediterranean Sea, the EU is faced with countries that are linked to individual EU countries through their colonial past. Both bordering areas, in the EU East and the EU South, have been gaining significance as they include emerging economies, energy suppliers, or, simply, a large neighbouring market, which is crucial for the EU economy

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(Kallioras and Pinna, 2015; Anagnostou, Kallioras and Petrakos, 2016; Petrakos, Tsiapa and Kallioras, 2016; Kallioras, Monastiriotis and Petrakos, 2018). Thus, the Thessaloniki European Council (June 2003) adopted, and the Brussels European Council (December 2003) confirmed, the European Neighborhood Policy (ENP), a unified policy framework towards the EU neighbouring countries (hereinafter: the ENP countries), laying in the external EU periphery (EC, 2003, 2004, 2006, 2007a, 2007b, 2010 and 2011; Kahraman, 2005; Wesselink and Boschma, 2017). The aim of the ENP is, allegedly, to strengthen prosperity, stability and security, transforming an "arc of instability" to a "ring of friends" or, to put it differently, to a "ring of well-governed countries", around the EU geo-political borders. Currently, the ENP framework encompasses Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine (the ENP East; hereinafter the ENPE) and to Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Occupied Palestinian Territory, Syria and Tunisia (the ENP South; hereinafter the ENPS).

The paper analyses empirically the geography of trade flows (i.e. the size, the direction and the composition of imports and exports flows) (Grotewold, 1961; Andersen, 2010) among the EU countries and the ENP countries, aspiring to offer valuable insight to both economic integration theory and policy-making. Particularly, the paper aims at drawing conclusions with respect to the ENP undertaking against the backdrop of trade activity among the EU countries and the ENP countries. To this end, the paper focuses on the period 2000-2010 (i.e. without including the abnormal period that contains the outbreak of the European sovereign debt crisis, the 'Arab Spring', the Russian-Ukrainian war, the Syrian civil war, and the refugee crisis) and utilizes trade data derived from COMTRADE Database (UN). The findings of the paper, albeit specific to the ENP countries, may be relevant, also, to other countries currently deepening their integration with the EU.

The paper proceeds as follows: The next section provides an overview of the ENP framework. The third section surveys the theoretical literature with respect to the geography of trade activity, under conditions of economic integration. The fourth section conducts the empirical analysis of the geography of trade activity among the EU countries and the ENP countries and discusses the findings with respect to the ENP undertaking. The last section concludes and offers some specific policy recommendations.

2. The ENP framework

The ENP is an EU external relations and trade policy tool offering, to the ENP countries, conditional preferential politico-economic relations – but not full membership (Tocci, 2005; Johansson-Nogués, 2007). Implicitly, the ENP is an EU attempt to seek a way out of the dilemma that it faces as it still "digests the 2004 enlargement" (Casier, 2006). The EU must choose between to enlarge and risk over-extension (even beyond the European Continent), and to deny other neighbours the opportunity to join and risk their exclusion (Emerson, 2004). In contrast to the (rigid) Copenhagen criteria that characterized the EU (eastwards) enlargement policy[5], the ENP framework involves bilateral, tailor-made, agreements

[5] I.e. political criterion: stability of institutions guaranteeing democracy, the rule of law, human rights and respect for and protection of minorities; economic criterion: existence of a functioning market

between the EU and each of the ENP countries. In particular, within the ENP framework, the EU negotiates a bilateral "association agenda" with each of the ENP countries, setting out a roadmap for jointly-agreed priorities in terms of political, economic, and institutional reforms. Subject to progress (compliance) with respect to the jointly-agreed priorities, the EU and each of the ENP countries may sign an Association Agreement. Evidently, even though it is a distinct and separate process from the EU enlargement (Browning and Joenniemi, 2008; Schimmelfennig and Scholtz, 2008), the ENP is modelled after the EU enlargement policy. This is so as the partnerships established under the ENP framework entail an almost continuous deepening of relations with the EU, with deep and extensive forms of economic association (Monastiriotis and Borrell, 2012; Monastiriotis, Kallioras and Petrakos, 2017).

According to the Treaty of Lisbon (EU, 2007), EU policies towards third countries (such as the ENP countries) should be guided by a common set of principles and objectives such as the consolidation of democracy, the promotion of human rights, the preservation of peace, the eradication of poverty and the enhancement of market economy (Koopmann and Wilhelm, 2010). The general principles and objectives enshrined in the EU Treaties underlie, thus, the cornerstone for the ENP undertaking. The EU offers to the ENP countries a triad of incentives in exchange for the approximation of EU standards and values (Cadier, 2013). The first incentive refers to the provision of financial support; the second incentive refers to the removal of tariff and non-tariff barriers-to-trade; the third incentive refers to visa liberalization. With respect to the trade ENP incentive (i.e. removal of tariff and non-tariff barriers-to-trade), the EU, following the suspension of the World Trade Organization (WTO) Doha Development Round (Ferguson, 2011), started to pursue Free Trade Agreements (FTAs)[6], bilaterally with targeted economies, in order to protect its markets and to enhance its competitiveness. Overall, FTAs are designed to create opportunities by opening new markets, by increasing investment opportunities, by promoting trade activity and by making the policy environment more predictable. For the EU, in particular, FTAs represent a "subway" to implement Deep and Comprehensive Free Trade Agreements (DCFTAs) with the ENP countries in order to deepen the substance of trade agreements, thus, bringing the ENP countries closer to the Single Market (Dreyer, 2012). The DCFTAs, the trade policy thrust of the ENP, envisage not only the mutual lifting of trade barriers but also harmonization of economic laws and regulations (related to investment protection, public procurement and competition policy) with the *acquis communautaire* (Woolcock, 2010). The DCFTAs represent, apparently, a "carrot and stick" tactic, involving high-level regulatory convergence. To put it simply, the DCFTAs between the EU and the ENP countries involve tailor-made agreements and conditions; basically, they are FTAs with serious one-way conditionalities related to progress required on political, economic, and institutional issues on behalf of the ENP countries.

economy and the capacity to cope with competitive pressure and market forces within the Union; legislative criterion: acceptance of the *acquis communautaire* (Preston, 1997).

[6] FTAs are regional integration agreements (RIAs) formed by removing tariffs on trade among members and leaving members with autonomy in setting their tariffs on trade with non-members (Baldwin and Venables, 1995).

Evidently, even though the proper "membership anchor" is missing (Havlik et al., 2012), the ENP countries operate under, tantamount to economic integration, conditions of "neighbourhood Europeanization" (Gawrich, Melnykovska and Schweickert, 2010). This indicates an apparent mismatch between the ENP countries' requirements/demands, on the one hand, and the ENP countries' potential gains/rewards, on the other. To put it simply, on the one hand, the EU has designed the ENP for its neighbouring countries, aiming to expand relations and strengthen prosperity, stability, and security in its external borders. On the other hand, the neighbouring countries perceive the ENP as a first step in a long road that will end-up with full EU membership. Such an expectation is, partly, justified on the historical record of the EU formation, which, in a series of enlargements, has managed to expand, first southwards and then eastwards, and integrate countries with different development levels and institutional endowments. Hence, the trade component of the ENP provides the backdrop against the progress of the overall ENP undertaking may be evaluated. Therefore, the analysis of trade activity among the EU countries and the ENP countries is highly relevant not only to the understanding of the economic linkages and development prospects of both areas but also to the understanding of the evolution of their political relations. Should they develop in a mutually beneficial and balanced way, trade relations between the EU countries and the ENP countries may have a strong growth impact, facilitating convergence with respect to development indicators, and, perhaps, paving the ground for deeper (economic) integration.

3. Review of the theoretical literature with respect to the geography of trade activity under conditions of economic integration

Together with the benefits (i.e. economic restructuring, sociopolitical transformation and development) that are, indeed, too strong to be overlooked, the process of (European) economic integration brings, also, effects which are of a less unequivocal character (Monastiriotis et al., 2010). Economic integration emaciates border obstacles for the movement of commodities and production factors and further intensifies itself (self-sustained process) via the reduction of transaction costs (Kallioras, Topaloglou and Venieris, 2009). Closed borders distort market size (Niebuhr and Stiller, 2002), whereas the abolition of economic barriers generates (releases) all kinds of spatial dynamics that relate to better access to foreign markets and to import competition (Brülhart, Crozet M. and Koenig-Soubeyran, 2004; Brülhart, 2011; Rodríguez-Pose, 2012). Therefore, the debate concerning the distribution of the overall welfare gains from the economic integration process finds fertile ground since the size, the direction and the composition of trade (and factor) flows determine, to a large extent, the prospects (and the limitations) for development.

Overcoming national borders is meant to create larger economic spaces for exploiting economies of scale, thereby reducing production costs (Myint, 1958; Krueger, 1978). This means that trade activity among the counterparts involved in an FTA is expected to intensify over time (Burke, 1973). The formation of FTAs is, strongly, based on this argument (Kallioras and Pinna, 2017). Theoretical literature, building on the notions of trade creation

and trade diversion (Viner, 1950; Lipsey, 1960)[7], points out that the distribution of the welfare gains generated within the framework of an FTA is related to the comparative advantage of the members relative to each other and to the rest of the world. On the basis of the concept of absolute advantage, first mentioned by Smith (1776), the concept of comparative advantage, formulated by Torrens (1815) and Ricardo (1817), refers to the ability of a country to produce a particular commodity at a lower opportunity cost over another country. In order to gain from international trade, countries are expected to export commodities for which their relative prices in an autarchy situation (i.e. no trade) are lower than other countries. Building on the concept of comparative advantage, the Heckscher-Ohlin-Samuelson (H-O-S) model (Heckscher, [1919]1991; Ohlin, 1933; Samuelson, 1948) predicts the patterns of production and trade on the basis of the factor endowments of trading countries. In particular, the H-O-S model supports that countries will export commodities that use their abundant and cheap factor(s) of production in order to gain from international trade. Overall, traditional theories of international trade indicate that gains from international trade should be greatest among countries with the greatest differences either in terms of opportunity costs or in terms of factor endowments. Hence, international trade should cause countries to export commodities distinctly different from the ones they import. Therefore, on the basis of traditional trade theory, it has been suggested that developing countries (such as the vast majority of the ENP countries) are likely to gain more forming an FTA with high-income countries (such as the vast majority of the EU countries) instead of forming an FTA with other developing countries (Venables, 2003).

Besides the static effects generated for the members of an FTA (especially for the developing ones), dynamic effects may, also, accrue (Balassa, 1961). International trade might generate positive externalities and spillover effects by transmitting and disseminating technological progress, knowledge, and ideas (Rivera-Batiz and Romer, 1991; Coe and Helpman, 1995; Coe, Helpman and Hoffmaister, 1997). Yet, this may not be the case when trading partners are asymmetric in the sense that exhibits considerable differences in terms of endowments and level of technology (Grossman and Helpman, 1991; Deveraux and Lapham, 1994). The positive impact of international trade is expected to be conditioned by the level of development as weak economies, which have a similar structure with their more advanced trade counterparts, may face intense competition and therefore, experience inferior growth performance (Petrakos, Kallioras and Anagnostou, 2011). In an imperfectly competitive economic environment, comparative advantage is said to be created rather than naturally given, favouring intra-industry (i.e. more trade occurs within sectors rather than between sectors) exchanges (Poon and Pandit, 1996). This means that the level and the type of specialization are essential parameters accounting for economic growth. In an open economy, specialization is related to the export base of an economy (Tiebout, 1956). International trade allows for greater specialization – since domestic demand for some commodities can be served by imports – allowing inherent and acquired comparative advantages to be exploited more intensively (Weinhold and Rauch, 1999). Yet, international trade might push some economies to specialize in low value-added sectors (i.e. sectors associated with constant

[7] Trade creation is the situation that occurs when consumption shifts from a higher-cost producer to a lower-cost producer, whereas trade diversion is the situation that occurs when consumption shifts from a lower-cost producer to a higher-cost producer.

and/or decreasing returns to scale activities), with an, overall, detrimental impact on long-term economic growth (Young, 1991; Rivera-Batiz and Xie, 1993; Paci and Usai, 2000).

Engaged in an integration process with distant and more advanced partners, peripheral and less advanced economies tend to develop (locked-in) an inter-industry (i.e. more trade occurs between sectors rather than within sectors) type of trade relations (Kallioras and Petrakos, 2010; Petrakos, Fotopoulos and Kallioras, 2012). This type of trade relations, which imposes a specific economic structure with specialization typically in labour- or resource-intensive economic activities, is the outcome of the inability of peripheral and less advanced economies to compete (successfully) with their more advanced counterparts in the markets for capital-intensive and knowledge-intensive economic activities (Brülhart and Elliott, 1998). Even though it provides an alternative (and perhaps the only feasible) route for the exploitation of the locally available skills, it is doubtful whether such a structural differentiation can produce long-term income convergence. Peripheral and less advanced economies, having weaker productive bases, with a high share of sensitive, labour- and/or resource-intensive, sectors and unfavourable geographic coordinates are struggling in the process of integration to effectively redeploy their resources in order to gain from the opening-up of markets (Camagni 1992; Puga 2002). Moreover, due to unequal exchange mechanisms (Baran, 1957; Emmanuel, [1969]/1972; Amin, 1974), as integration improves market access and raises incomes, the patterns of consumption and production change and imports increase disproportionately to exports. This has the tendency to produce structural trade deficits, which threaten the stability of the local currencies and contribute to fiscal imbalances.

Hence, moving from traditional to modern theories of international trade, the idea that developing countries have to increase the variety of their export basket, in order to boost growth, stabilize exports earnings and upgrade value-added, started to prevail (Conkling and McConnell, 1973; Amable, 2000; Al-Marhubi, 2010). This follows the recognition that not all commodities are equal, and they may have very different effects on growth performance (Hidalgo et al., 2007; Boschma and Capone, 2016). Under a different perspective, such a recognition indicates that international trade is not always and for all beneficial (either in absolute or in relative terms), no matter who the trade partners are and no matter what mix of products are traded.

4. Empirical evidence with respect to the geography of trade activity among the European Union countries and the European Neighborhood Policy countries

The EU attempts to expand its trade relations and apply its "neighbourhood Europeanization" policies to countries that, on aggregate, have large populations and low levels of development. Noteworthy is the fact that while (year 2010) the population of the ENP countries is equivalent to 55% of the EU population, the corresponding ratio for the real (constant, year 2005, prices) Gross Domestic Product (GDP) level is only 6% (Petrakos, Tsiapa and Kallioras, 2016). Speaking in per capita GDP terms, while (year 2010) the average EU real (constant, year 2005, prices) per capita GDP figure is equal to $29,535 per inhabitant, the corresponding average ENP countries' figure is just $2,977 per inhabitant (Petrakos, Tsiapa and Kallioras, 2016). In fact, among the ENP countries, only Israel is a significant outlier as it enjoys a level of development, exhibiting (year 2010) per capita GDP figure equal

to $21,516 per inhabitant, which is significantly higher than the corresponding level of many EU countries (Petrakos, Tsiapa and Kallioras, 2016). This is, clearly, a very serious development gap that places a real pressure on the demographic balances of the ENP countries, especially when considering that the rural population in the ENP countries' area represents 40% of total population (i.e. approximately 111.5 million inhabitants), making the external EU frontiers sensitive to migration forces (Petrakos, Tsiapa and Kallioras, 2016). Taking this into consideration, the paper conducts an empirical analysis in order to provide comparative empirical evidence as regards the geography of trade activity among the EU countries and the ENP countries. To this end, the paper undertakes a descriptive statistical and graphical analysis of the findings derived from the estimation of a series of trade indicators. The latter are perceived to be the stepping stones in the empirical trade literature, providing information in a, rather, straightforward and reliable manner (Markusen, 1992). This is because trade data is so widely available, relatively reliable and highly disaggregated (Brülhart, 1998). Thus, trade indicators, as the result of using trade data, are, often, the most available input for evidence-based policy-making (Scott 2005; Mikic and Gilbert, 2009).

The paper focuses on the period 2000-2010 (i.e. without including the abnormal period that contains the outbreak of the European sovereign debt crisis, the 'Arab Spring', the Russian-Ukrainian war, the Syrian civil war, and the refugee crisis), and utilizes national-sectoral-level (i.e. 2-digit SITC classification) trade data[8], derived from COMTRADE Database (UN). The sectors included in the analysis belong to the primary and the secondary sector of production and form six (6) groups of activities, according to the intensity of the production factors used in the corresponding production process.[9] In order to gain a better insight on the evolution and the characteristics of trade activity among the EU countries and the ENP countries, the paper classifies the EU countries into three (3) sub-groups, according to the level of their GDP with respect to the corresponding average EU level (Anagnostou, Kallioras and Petrakos, 2016). The first sub-group comprises of Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxemburg, the Netherlands, Sweden, and the United Kingdom (UK) (hereinafter: the EU12); these countries have relatively high (i.e. above the EU average) per capita GDP level. The second sub-group comprises of Cyprus, Czech Republic, Greece, Malta, Portugal, Slovenia, and Spain (hereinafter: the EU7); these countries have relatively medium (i.e. above the 75% of the EU average and below the EU average) per capita GDP level. The third sub-group comprises of Bulgaria, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia (hereinafter: the EU8); these countries have relatively low (i.e. below the 75% of the EU average) per capita GDP level.

Trade activity among the EU countries and the ENP countries has grown significantly over the period 2000-2010, even though a decrease is recorded during the period 2008-2009, just after the eruption of the financial crisis (Figure 1). This is a clear sign of increased interaction.

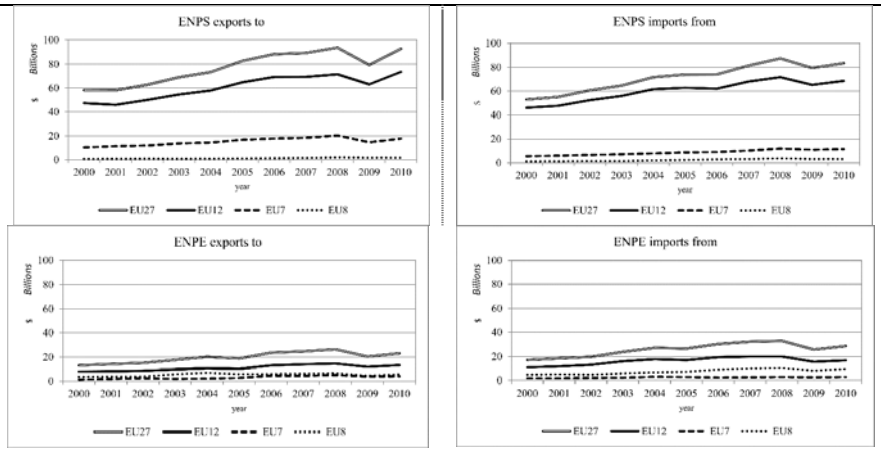
[8] There are no data for the Occupied Palestinian Territory. Croatia is not included in the analysis.

[9] Particularly, on the basis of the Harmonized System (HS) classification (UNCTAD 1996), these groups are: HS1 (non-fuel primary commodities), HS2 (fuel primary commodities), HS3 (labor-intensive and resource-based commodities), HS4 (low skill-, low technology-, low capital- and low scale-intensive commodities), HS5 (medium skill-, medium technology-, medium capital- and medium scale-intensive commodities), and HS6 (high skill-, high technology-, high capital- and high scale-intensive commodities).

Specifically, the ENPS levels of trade with the EU countries are significantly higher than the corresponding ENPE levels. The major trade partner for both the ENPS and the ENPE is the EU12. Trade activity with the other EU countries' sub-groups remains at relatively low – and at rather stable – levels. Noteworthy is the fact that trade activity among the Southern and the Eastern pairs of the external and internal EU periphery (i.e. ENPS–EU7 and ENPE–EU8, respectively) is still (year 2010) limited, despite the geographical proximity of the countries involved.

Figure 1

Trade activity between the ENP countries and the EU countries *(absolute figures)*, period 2000-2010

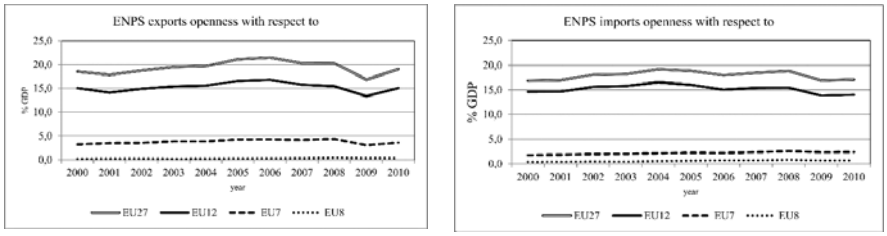


Sources: COMTRADE Database (UN) / Authors' Elaboration

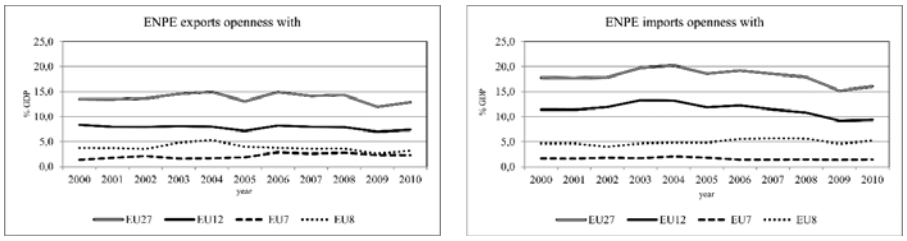
Nonetheless, the EU is the most significant trade partner for the ENP countries. Particularly, trade openness[10] with respect to EU27 accounts, for both the ENPS and the ENPE, for well-above the level of 15%, mostly due to the interaction with the EU12 (Figure 2).

Figure 2

Trade openness of the ENP countries as regards the EU countries, period 2000-2010



[10] Trade openness measures the importance of international trade for an economy and gives an indication of the degree to which an economy is open to trade. The index is expressed as the value of trade (i.e. exports and/or imports), with a specific partner country, or the world in general, in relation to the value of GDP (Frankel and Romer, 1999).



Sources: COMTRADE Database (UN) / Authors' Elaboration.

Yet, despite the increase in both absolute and relative (i.e. % GDP) terms, the EU does not increase its share in the ENP countries' trade activity (Figure 3). Especially with respect to exports, such a trend indicates the difficulty of the ENP countries to succeed in the EU markets. Such a difficulty may, mainly, attribute to the level of tariff barriers-to-trade (Dreyer, 2012; Sklenková, 2012), which is probably the most important condition for the success of an FTA. Indeed, the EU imposes (year 2010) relatively high average tariff barriers-to-trade with the ENP countries, especially on agricultural goods (i.e. goods that the ENP countries mainly specialize), thus making it difficult for the ENP countries to achieve (enjoy) conditions of trade creation with respect to their EU counterparts (Kallioras and Pinna, 2015; 2017). At the same time, the share of the rest of the world (RoW) countries is getting increased. This trend may, mainly, attribute to the dynamism that the BRICS (i.e. Brazil, Russia, China, India, and South Africa) exhibit. Surely, such a trend is alarming for the EU as the BRICS may increase their political influence (besides the economic one) in the ENP countries' area. Noteworthy is, also, the fact that the intra-ENP-countries share is extremely small. This fact indicates that the ENP countries' economic space is still fragmented, with weak demand-and-supply chain links.

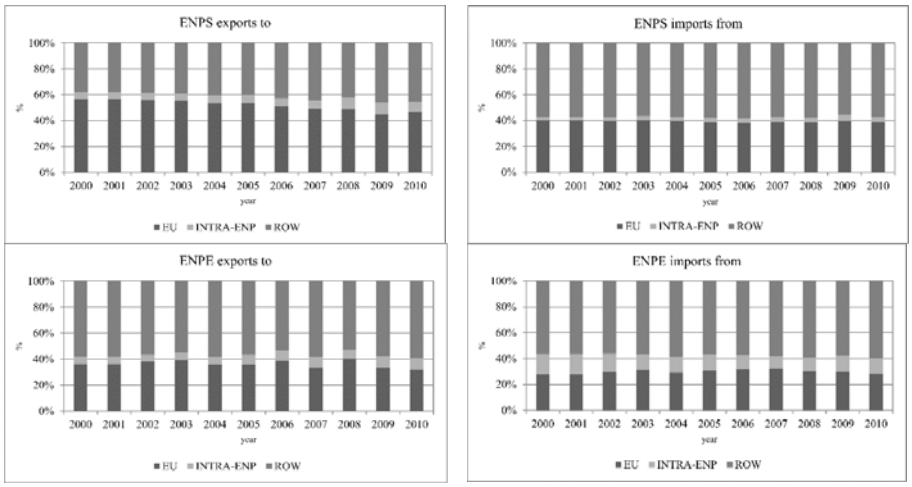
The diminishing EU shares to the ENP countries' trade activity (to exports activity, in particular) may attribute to the asymmetric nature of trade activity among the EU countries and the ENP countries. On average, the ENP countries appear with a strong revealed comparative advantage (RCA)[11] (i.e. with figure well-above 1.o) in the sectoral group of HS2 (Figure 4). Given that the EU is a major energy importer (Ratner et al., 2013), this particular sectoral group becomes a key-sector for the study of trade activity among the EU countries and the ENP countries (and the ENP undertaking, in general). Examining each ENP countries' sub-group separately, it is noteworthy that the ENPS exhibit RCA against the EU12 (i.e. the high-income EU countries) and the EU7 (i.e. the medium-income EU countries) only in the sectoral group of HS2. In contrast, against the EU8 (i.e. the low-income EU countries) the ENPS do not exhibit RCA in the sectoral group of HS2 (this is the only case, with respect to this particular sectoral group, that an ENP countries' sub-group does not exhibit RCA against an EU countries' sub-group). Instead, the ENPS appear with a mild

[11] The index of RCA is expressed as the proportion of country under consideration exports' in a specific sector divided by the proportion of a partner country (or world) exports' in the same specific sector (Balassa, 1965). When the index takes values greater than 1, a comparative advantage is "revealed". Otherwise, the country under consideration has a comparative disadvantage.

RCA (i.e. with a figure above 1.0) against the EU8 in the sectoral groups of HS1, HS5, and HS6 (this is the only case, with respect to the latter couple of sectoral groups, that an ENP countries' sub-group exhibits RCA against an EU countries' sub-group). Looking at the ENPE, the latter exhibit RCA against all EU countries' sub-groups in the sectoral groups of HS1, HS2, and HS4. Against the EU12, the ENPE exhibit RCA in the sectoral group of HS3 (this is the only case, with respect to this particular sectoral group, that an ENP countries' sub-group exhibits RCA against an EU countries' sub-group). The ENPE do not exhibit RCA against an EU countries' sub-group in the sectoral groups of HS5, and HS6.

Figure 3

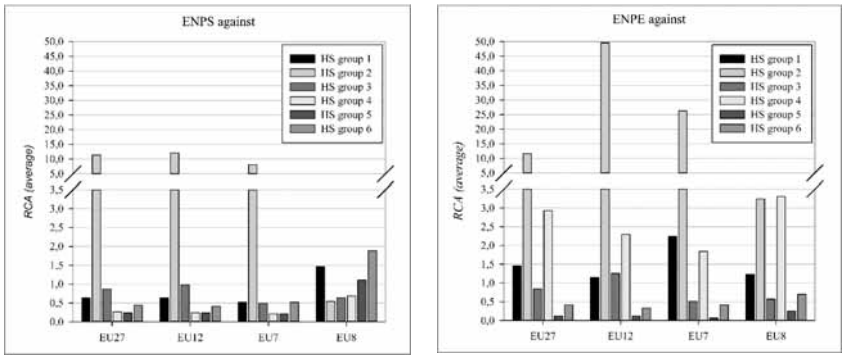
Trade activity between the ENP countries and the EU countries *(relative figures)*, period 2000-2010



Sources: COMTRADE Database (UN) / Authors' Elaboration.

Figure 4

RCA of the ENP countries as regards the EU countries, period 2000-2010

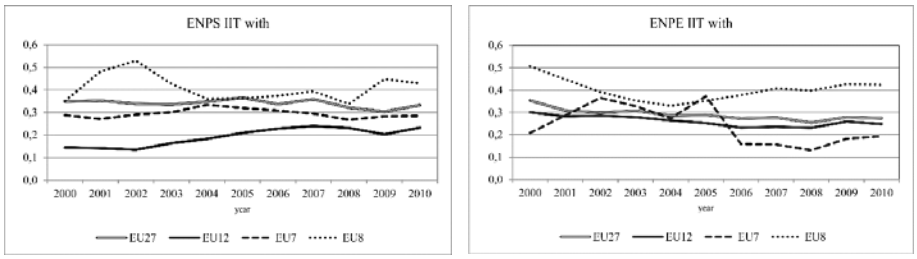


Sources: COMTRADE Database (UN) / Authors' Elaboration.

The asymmetry that characterizes the trade activity among the EU countries and the ENP countries means that the latter is, mostly, of inter-industry type (Figure 5). In particular, both ENP countries' sub-groups have low intra-industry trade (IIT)[12] shares with the EU countries. This is especially so with respect to the EU12 sub-group (i.e. IIT figures are below 0.300; even though as regards the ENPS there is an increasing trend), indicating that "structural proximity" matters for the structure of trade activity. The inter-industry type of trade interaction is exactly the one that, typically, characterizes the "North-South" trade relations (i.e. trade among 'unequal' or 'distant' partners). This type of trade relations raises questions about its ability to reduce the income (or development) gap among the trade partners involved. With respect to the trade activity among the EU countries and the ENP countries, the high inter-industry trade shares (or the low intra-industry trade shares, respectively) provide a strong indication for the inability of the ENP countries to compete with their EU counterparts in the markets for capital-intensive products. Especially for the ENP countries that do not exhibit RCA in the sectoral group of HS2, such a lack of competitiveness may "translate" into trade deficits.

Figure 5

IIT of the ENP countries with the EU countries, period 2000-2010



Sources: COMTRADE Database (UN) / Authors' Elaboration.

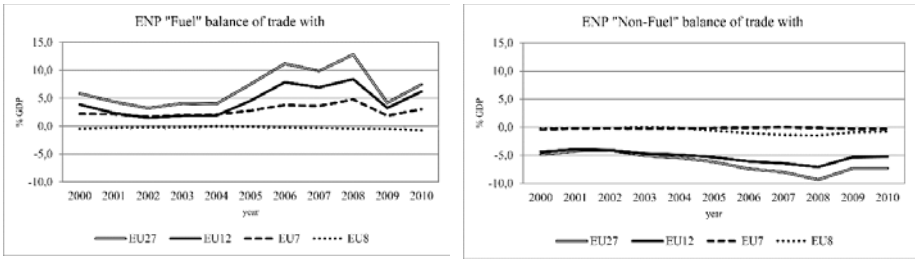
Indeed, the prominent role of the sectoral group of H2 for the ENP countries' trade activity is reflected in the corresponding trade balances with respect to the EU (Figure 6). To clearly demonstrate the argument, the paper provides an alternative classification of the ENP countries; in particular, the ENP countries are classified into the ENP "Fuel" (i.e. fuel-exporting ENP countries) and the ENP "Non-Fuel" (i.e. non-fuel-exporting ENP countries) sub-groups. The ENP "Fuel" sub-group contains the ENP countries that exhibit their highest RCA in the sector of HS2; these countries are Algeria, Azerbaijan, Belarus, Egypt, Georgia, Libya and Syria. The ENP "Non-Fuel" sub-group contains the rest of the ENP countries. As it turns up, the ENP "Fuel" runs a trade surplus, while the ENP "Non-Fuel" runs a trade

[12] The index of IIT matches the value of the exports of a specific sector to the value of the imports of the same specific sector, for a country under consideration (Grubel and Lloyd, 1971). The index takes values in the interval [0, 1]. Values close to 0 indicate that trade activity between a country under consideration and a partner country is an inter-industry one (i.e. concerns products that grossly belong to different sectors). Values close to 1 indicate that trade activity between a country under consideration and a partner country is an intra-industry one (i.e. it concerns products that grossly belong to the same sectors).

deficit with respect to trade activity with the EU countries. Interestingly, the trade deficit of the ENP "Non-Fuel" is milder when trading with the EU7 and the EU8. This fact supports the argument that trade imbalances are less important when the development gap between trade partners is smaller.

Figure 6

ENP countries balance of trade with the EU countries, period 2000-2010



Sources: COMTRADE Database (UN) / Authors' Elaboration

5. Conclusions and implications for theory and policy-making

The empirical analysis of the paper provides evidence that the ENP countries are engaged in an asymmetric, inter-industry, type of trade activity with their more advanced EU counterparts, within the ENP framework, facing serious difficulties in restructuring and diversifying their productive bases. The trade component of the ENP (and the DCFTAs, in particular), involving tailor-made agreements and conditions with serious one-way conditionalities related to progress required on political, economic and institutional issues on behalf of the ENP countries, provides the backdrop against the progress of the overall ENP undertaking may be evaluated. Despite the fact that the trade activity among the EU countries and the ENP countries is getting increased in absolute terms, the asymmetric, inter-industry, type of the latter indicates that the trade component of the ENP does not provide a solid stimulus in the process of "neighbourhood Europeanization". The findings of the paper suggest that the trade activity among the EU countries and the ENP countries can be beneficial for the growth performance of both partners when "structural proximity" is involved. This means that "North-South" trade relations need to be balanced and complemented by "South-South" trade relations (i.e. trade among "equal" or "close" partners) as a necessary ingredient for a successful integration experience for the ENP countries. The slow reforms and the upheaval and the tensions in both ENP countries' sub-groups (still in full swing) have their roots in the difficulty of the ENP countries to adapt their productive system to the pressures of internationalization and to deliver measurable welfare results (i.e. sustainable incomes and jobs) to large, and increasingly mobile, populations.

Clearly, the ENP undertaking has not produced the anticipated results. Indeed, in an economic space with still-existing barriers to interaction, the ENP countries still face serious difficulties to penetrate the EU markets and turn their attention to the rising BRICS group that may offer easier-to-entry and conditionality-free markets. The reduction of the EU share of trade with the ENP countries should be conceived as a signal for the adjustment of the

ENP undertaking to the (changing) reality. Policy recommendations towards the ENP reform may include the (unilateral) improvement of the ENP countries' access to EU markets, the encouragement of trade relations along the external EU frontier (i.e. between the ENP countries and the medium- and low-income EU countries), and the provision of technical support seeking to improve variety in the ENP countries' productive bases. Ideally, these policy recommendations should be independent from *acquis communautaire* compliance. The EU may have to be prepared for a paradigm shift in its integration policy. The idea that the EU can integrate to its core productive system successive homocentric rounds of geographically more and more dispersed and economically less and less developed areas, without altering the basic model of integration, and without incurring any costs for anyone,

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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Irena Zareva[1]

(RE) INTEGRATION OF RETURNING MIGRANTS INTO THE ECONOMIC LIFE IN BULGARIA

The paper addresses issues related to the impact of external migration on the labour market in Bulgaria, with a focus on returning migrants and their participation in the labour market in the country. The study is based on data from a representative national survey conducted in 2017. Characteristic of the labour status of migrants as a whole and by separate groups is made. A comparative assessment of the employment status before the first departure and after the last return is done. Main problems for the participation of migrants in the labour market in Bulgaria and the need to support their reintegration into the economic life in the country are identified.
JEL: J62; J24

There are a number of studies in the literature on the problems, related to returning migrants, various aspects of which became an object of study in the 1980s, including such, concerning their reintegration upon return. Since the beginning of this century, more attention has been paid to the impact of external migration, including that of the returning migrants, on the development of the sending countries.

The results of theoretical and empirical studies show that external migration processes have both positive and negative effects on the labour market in the sending countries. Returning migrants can affect the size of the labour force. The return of skilled migrants can increase the human capital and the transfer of knowledge and skills, while that of low-skilled and de-qualified (who have lowered or have lost qualification abroad) has the opposite effect and creates a need for their additional training in order to participate in the local market. Many migrants have problems finding a job on their return. Some of them start their own businesses or become self-employed. In a number of cases, however, the amount of their savings is not sufficient to take larger initiatives in this direction.

Important for the impact of returning migrants on the local labour market is the type of migration – whether it is long-term or short-term. Long-term migrants are more likely to accumulate savings and acquire new skills abroad. In many cases, however, upon their return, they look for a job in another economic sector than the one in which they were employed

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before leaving, often becoming self-employed. Short-term migration can also lead to negative effects on the balance of the labour market, both in terms of supply and demand.

Various investigations, conducted during the last years by Bulgarian researchers, based on the results of representative surveys, are dedicated to the issues of returning Bulgarian migrants. Some of them are focused on the reasons behind the migratory behaviour and outline economic and non-economic motives for departure and return, as well the future plans of migrants (see for example Nonchev, 2019; Boshnakov, 2019; Bakalova, Misheva, 2018). Others examine the socio-demographic characteristics of migrants (Mintchev, Boshnakov, 2018). The effects of migrants return on the labour market in Bulgaria, and the policies for encouraging the return are also a subject of investigation (including by the author of this article). The studies demonstrate that returnees often have difficulties to integrate into the labour market in the country. With the existing regulatory framework, priorities and policies outlined in the strategic documents regarding the return and (re)integration of Bulgarian migrants into the economic and social life in the country, they are not sufficiently supported by concrete activities for effective implementation.

The goal of this paper is to elucidate the integration of returning migrants into the economic life in Bulgaria and to outline some of the main problems for their participation in the labour market based on analysis of official statistical data and of results of a representative national survey, conducted in 2017.[2]

Economically active population, labour force and migration

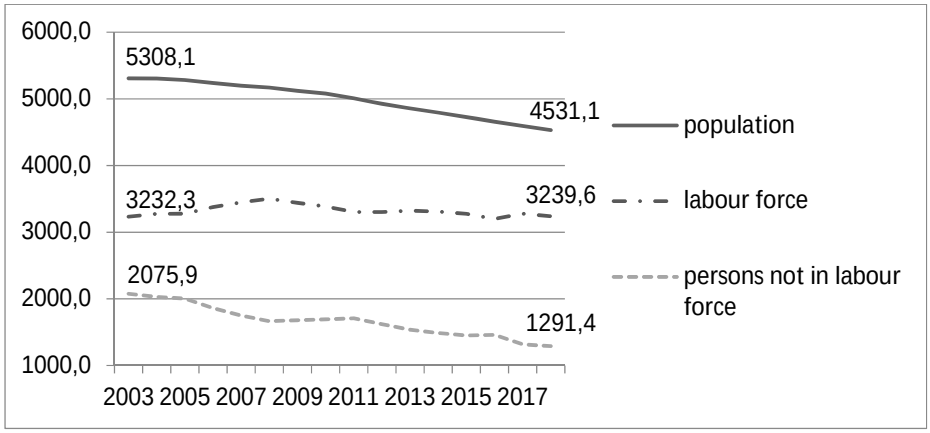
According to NSI data, for the period 2003-2018 the number of working-age population in Bulgaria has decreased by 545.6 thousand persons – from 4.75 to 4.2 million, with the increase of the upper age limit for women by 4 years and 2 months and for men – by 2 years and 1 month.

There has been a decrease by 777 thousand persons in the last 15 years in the population aged 15-64 – from 5.3 to 4.5 million, and in that aged 15-34 – by 601 thousand (from 2.1 to 1.5 million). Despite the observed fluctuations, the number of the labour force remains almost unchanged over the period, staying at about 3.2 million people. This is due to the drop in the number of persons outside the labour force by more than 784 thousand (Figure 1). After the economic crisis, since 2013, the rates of economic activity and of employment in the country have been increasing constantly. However, the labour force below the age of 35 has decreased by nearly 265 thousand persons – from 1.1 to 0.87 million. The increase in the rates of economic activity and of employment of young people under 35 is more unstable.

[2] The survey was conducted within the framework of the project "Returning Migrants: Segmentation and Stratification of Economic Mobility", funded by the Scientific Research Fund, Fundamental Scientific Research Funding Competition – 2016, implemented by a team of researchers, a member of which is the author, from the Economic Research Institute at BAS and the University of National and World Economy.

Figure 1

Population aged 15-64, labour force and persons outside the labour force (number in thousands)



Source: NSI.

The decrease in population is determined to a greater extent by the negative natural growth, but also by the negative net migration. Bulgaria is a country characterised by continuous negative net migration over the last more than ten years. It is expected that this trend will continue. According to Eurostat forecasts, a reversal of the trend and achievement of positive net migration is expected by 2030.

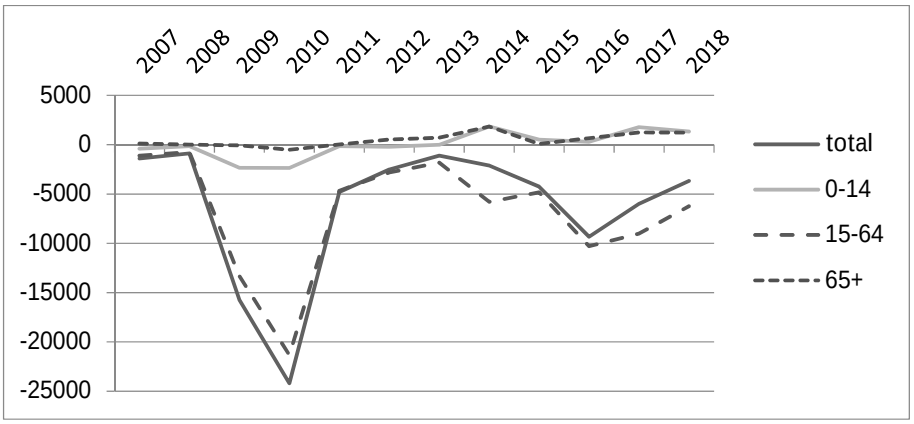
According to current NSI statistics[3], for the period 2007-2018, the country has lost about 82 thousand persons from the economically active population aged 15-64 as a result of the negative net migration. A positive net migration is observed in the population aged 65 and over (leaving the labour market) almost throughout the period. A positive tendency, after the reversal of the trend in 2014, is the positive net migration of children up to the age of 14, as a potential labour force (Figure 2).

Due to negative net migration, Bulgaria has lost over 93.7 thousand Bulgarian citizens for the period 2012-2018, despite the growing number of Bulgarians returning to the country (over 68 thousand persons in total for the period) and their rising share in the total number of immigrants in the country – from 35 to 55% (Figure 3). Unfortunately, national statistics do not provide information on the socio-economic characteristics of this group of migrants.

[3] Data only on persons who have declared change of their present address in the country for a new one outside it or change of an address abroad for a new one in the country.

Figure 2

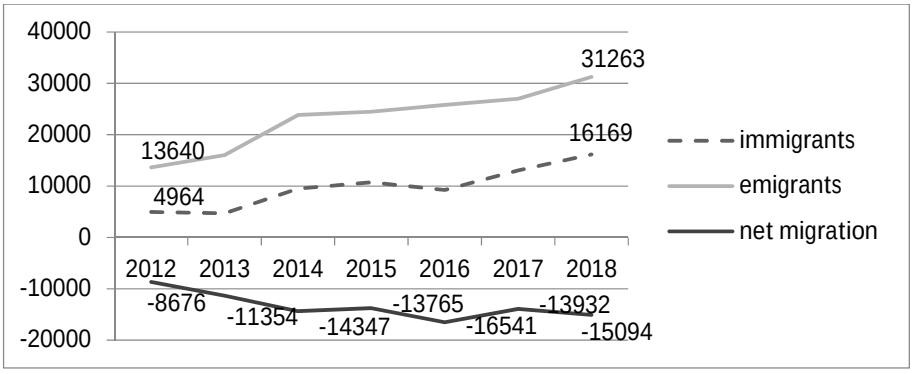
Net migration of the population by age groups (number)



Source: NSI, current statistics.

Figure 3

Immigrants and emigrants – Bulgarian citizens, net migration (number)



Source: NSI, current statistics.

The number of settlers with Bulgarian citizenship has increased in recent years from 4 to nearly 13 thousand persons annually. This change, however, does not have any significant impact on the country's labour force, as it can be seen from the table below, due to their small number (Table 1).

Table 1
Population aged 15-64, labour force and settlers with Bulgarian citizenship aged 10-69*
(number in thousands)

Indicators	2012	2013	2014	2015	2016	2017	2018
Population	4923.6	4859.2	4795.6	4726.6	4658.8	4595.2	4531.1
Labour force	3303.9	3322.7	3308.7	3276.0	3199.6	3277.5	3239.6
Settlers	4.2	4.1	8.4	9.5	7.9	10.4	12.7

* the interval 10-69 for settlers is because data on the settlers are reported by age groups of ten years
Source: NSI.

The net migration of Bulgarian children aged 0-9 was negative until 2016. It has already been positive over the last two years of the period, due to the more significant increase in the number of children that have settled. As a whole, 8766 children have settled in the country and 8924 have moved out. Further increase in the number of settling children and the maintenance of positive net migration would have a favourable impact both in demographic terms and on the country's labour force.

As a result of external migration processes and long-term negative net migration, Bulgaria is losing a significant number of its economically active population. The positive net migration of the population over 65 has an impact not so much on the labour market but on the social system of the country. The net migration of the Bulgarian citizens who have settled in Bulgaria has remained negative in recent years. Despite the increasing number of settlers with Bulgarian citizenship, it is not yet large enough to have a tangible impact on the country's labour force.

Returning Migrants in the Labour Market in Bulgaria – Empirical Evidences

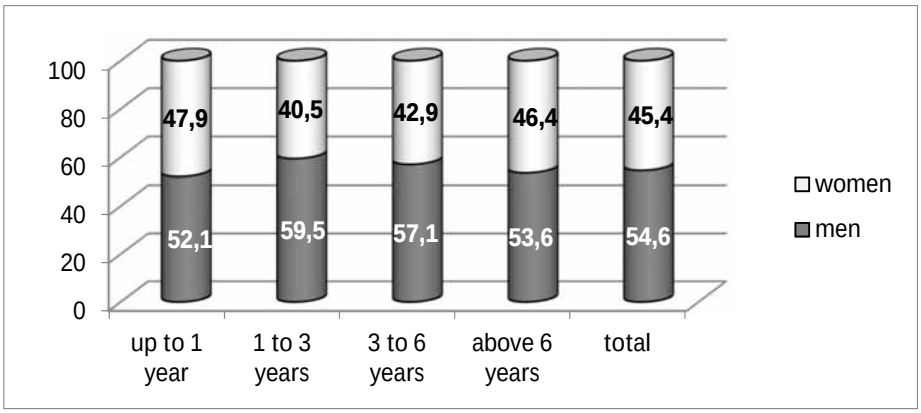
The results from the quantitative survey conducted in 2017 within the framework of the project "Returning Migrants: Segmentation and Stratification of Economic Mobility" show that the majority of persons who have resided abroad for more than three months are economically active (about 90%), with about one-third of them under 35 years of age. Over the age of 65 are 9.6%.

The larger share of returning migrants have resided abroad for less than 1 year – about 60%, among which prevail those aged up to 35, with completed vocational and higher education, men. The characteristics of long-term migrants, with some specifics, are similar. About half of those who have resided abroad between 3 and 6 years are of the age group 46-65 (52.4%), and with over 6 years stay – are of the age group 56 and over (48.8%).

The majority of migrants are men, the share of which is obviously larger among the long-term migrants (Figure 4).

Figure 4

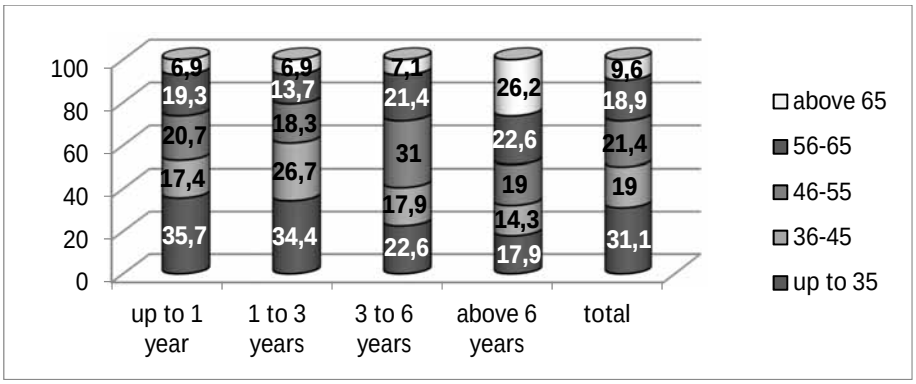
Structure of migrants by length of stay and gender (%)



Largest is the share of migrants under the age of 35. However, with the increase in the length of stay abroad, the share of the older age groups rises. One explanation for this phenomenon is that some of the young people resided abroad for the purpose of education and training. Just over 3% of all respondents claim that the reason for their first departure abroad was to get the desired education. The majority of people over 45 have resided abroad for more than 3 years (Figure 5). The return of young people to the country, if permanent, would have a positive effect on the economically active population and the labour force.

Figure 5

Structure of migrants by length of stay and age groups (%)



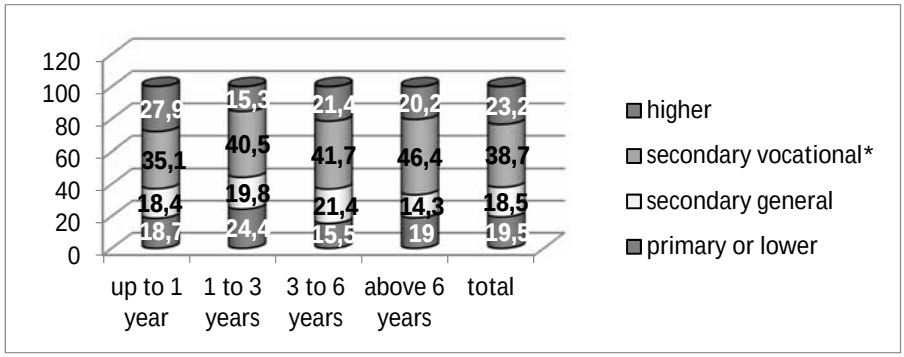
Nearly two-thirds of migrants have completed vocational and higher education (Figure 6). There are no significant differences in their educational structure before the first departure from the country and after their last return. The share of higher education graduates has

increased by 3.3 percentage points at the expense of the decrease in the share of persons with secondary education, which is determined by the residence of some of the respondents abroad for the purpose of education.

The migration of persons with such education has an unfavourable effect on the quality of the labour force in the country and on the balance of the labour market in this respect. Their short-term migration implies that there is no adequate employment to their qualification and payment in the country, which in turn is a condition for subsequent migration. Leaving the country for a long time is, on the one hand, an evidence that there are greater opportunities for realisation abroad of such educated people, but on the other hand, it is a prerequisite for lowering/losing qualifications of some migrants or for its inadequacy to the current market demand in Bulgaria. With a predominant share of returning migrants with secondary vocational and higher education, a number of studies among employers show that they face serious difficulties in finding the skilled professionals they need.

Figure 6

Structure of migrants by length of stay and education (%)



* including education after high school (semi-higher)

On their return to Bulgaria, the majority of migrants are employed, mostly full-time or part-time, and about 9% start their own business or become self-employed. However, a quarter of them remains unemployed.

Among the returnees, the share of employed men – hired or self-employed, is higher than that of women. Among women, the share of pensioners is much higher and the percentage of unemployed is more significant compared to those of men (Table 2).

Characteristic of the employment status of migrants by age groups is the decrease in the share of employees over 55 and the increase in the number of pensioners. Largest is the share of persons with their own businesses and self-employed aged 36-45. The percentage of the unemployed increases with the increase of age up to the group 56-65 years, where it starts to decrease. For persons over 65, the share of pensioners exceeds 72% and there are no self-employed or persons with their own business among them.

Table 2

Labour status of migrants upon their return to Bulgaria by gender, age groups, education and length of stay abroad (%)

Labour status / Group of migrants	Hired full-time	Hired part-time	Student	Pensioner	Own business	Self-employed	Unemployed	No respond
Total	47.0	3.5	2.5	11.9	5.8	3.5	25.2	0.6
Man	52.7	2.1	3.0	5.2	7.6	4.8	24.2	0.3
Woman	40.1	5.1	1.8	20.1	3.6	1.8	26.3	1.1
Up to 35 years	52.1	4.3	7.4	-	5.9	3.2	27.1	-
36-45 years	53.0	4.3	0.9	-	8.7	5.2	27.8	-
46-55 years	52.7	3.1	-	3.1	7.0	4.7	28.7	0.8
56-65 years	42.1	2.6	-	22.8	4.4	2.6	23.7	1.8
Above 65 years	15.5	1.7	-	72.4	-	-	8.6	1.7
Primary or lower education	37.3	4.2	0.8	16.9	-	3.4	36.4	0.8
Secondary general education	38.4	3.6	4.5	10.7	6.3	3.6	32.1	0.9
Secondary vocational education*	51.7	3.0	2.6	10.3	8.1	3.8	20.1	0.4
Higher education	54.3	3.6	2.1	11.4	6.4	2.9	18.6	0.7
Up to 1 year stay abroad	53.4	3.6	4.6	9.2	3.3	3.0	22.0	1.0
1 to 3 years	43.5	5.3	-	7.6	6.9	4.6	31.3	0.8
3 to 6 years	44.0	1.2	1.2	13.1	11.9	3.6	25.0	-
More than 6 years	32.1	2.4	-	27.4	7.1	3.6	27.4	-

* including education after high school (semi-higher)

Migrants with secondary vocational and higher education have the best opportunities to participate in the labour market in Bulgaria; among them, the share of the employed (hired, persons with their own business and self-employed) is largest and of the unemployed – smallest. Highest is the percentage of the unemployed among persons with primary or lower education.

With the increase in the length of stay abroad, the share of hired returnees decreases, but that of persons with their own businesses and self-employed, as well as of pensioners and unemployed increases. For migrants with over 6 years stay abroad, the share of hired persons is the lowest – below 35%, of self-employed and of those with their own businesses – just over 10% in total, and pensioners and unemployed have equal shares (27.4% each). More than a quarter of the long-term migrants return when they retire and another quarter of them cannot find a job in Bulgaria after they return.

The comparison between the labour status of migrants before their departure and after their return provides a more complete picture of changes in their employment/labour realisation and the effects of migration on it. The prevailing part of those who were hired (full or part-time) before their departure, remain so after they return. Not a high percentage of them develop their own businesses or become self-employed (just over 7% in total). About one-fifth remain unemployed. Of the students, about a quarter continue to study and as many become unemployed. Of the unemployed, one-third manage to find a job, 10% start their own business or become self-employed, and over 45% remain unemployed (Table 3).

Table 3

Labour status of migrants before their first departure and upon their return to Bulgaria (%)

Labour status before the first departure	Labour status upon last return to Bulgaria								Total
	Hired full-time	Hired part-time	Student	Pensioner	Own business	Self-employed	Unemployed	Not responded	
Hired full-time	65.9	1.3	0.3	7.0	5.4	1.9	17.5	0.6	100.0
Hired part-time	35.0	40.0	-	5.0	-	-	20.0	-	100.0
Student	30.2	4.7	25.6	-	9.3	7.0	23.3	-	100.0
Pensioner	3.2	-	-	96.8	-	-	-	-	100.0
Own business	16.7	-	-	-	41.7	-	33.3	8.3	100.0
Self-employed	30.0	10.0	-	10.0	10.0	40.0	-	-	100.0
Unemployed	29.2	3.0	1.8	10.7	4.8	4.8	45.2	0.6	100.0
Not responded	33.3	16.7	-	-	-	-	50.0	-	100.0

The data show that a significant percentage of those who were employed, as well as of those who were students before departure, remain unemployed after their return. The share of the unemployed who after their stay abroad cannot find a job in Bulgaria is also considerable. Some of the returning migrants start their own businesses or become self-employed.

The comparative analysis highlights another characteristic of migrants who, upon their return, start their own businesses or become self-employed. Most of them were hired or unemployed, as well as students prior to their departure. Only 14.3% of start-ups and 19% of those who are self-employed had the same employment before leaving (Table 4). Such changes in employment are another evidence of the problems for the reintegration of returnees. Having difficulty finding a job, some of them try to start their own business or to become self-employed.

In regard to the field of employment (economic activities), upon their return, migrants mainly work in trade, construction, hotels and restaurants, manufacturing and transport (Table 5). Significant discrepancies are observed in the employment of migrants by economic activities in Bulgaria – before departure and after their return, and abroad. The share of employed persons abroad in construction, agriculture, hotels and restaurants, as well as in the activities of households is significantly higher compared to their employment in Bulgaria before the first departure and after their return. The share of the employed in manufacturing, agriculture,

transport, as well as in education and healthcare upon their return to the country is lower than that before their first departure.

Table 4

Labour status before the first departure of migrants who have their own business or become self-employed on their last return (%)

Labour status before the first departure	Labour status upon last return to Bulgaria	
	Own business	Self-employed
Hired full-time	48.6	28.6
Hired part-time	-	-
Student	11.4	14.3
Pensioner	-	-
Own business	14.3	-
Self-employed	2.9	19.0
Unemployed	22.9	38.1
Not responded	-	-
Total	100.0	100.0

Table 5

Structure of employment of migrants by economic activities upon their return to Bulgaria (%)

Economic activities	%
Agriculture, forestry and fishing	1.0
Mining and quarrying	0.3
Manufacturing	5.5
Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation activities	0.2
Construction	8.8
Trade, repairs	9.6
Hotels and restaurants	6.0
Transportation, warehousing and postal services	5.1
Information and communication	2.2
Financial and insurance activities	1.0
Professional, scientific and technical activities	2.8
Administrative and support service activities	1.8
Public administration	0.5
Education	1.8
Human health and social work activities	1.3
Arts, entertainment and recreation	2.0
Other activities	1.2
Housekeeping activities (care for elderly, ill persons and children against charge)	0.8
Not defined	7.9
Did not work	39.4

As concerns migrant occupations, largest is the share of those who work as service and sales workers, followed by the one of craft and related trade workers and of elementary occupations – low-skilled personnel, without a specific occupation (Table 6).

Table 6

Structure of returning migrants by occupation (%)

Occupation	Upon the last return to Bulgaria
Did not work	40.0
Managers	6.3
Professionals	6.1
Technicians and associate professionals	5.3
Clerical and support workers	4.3
Service and sales workers	14.1
Skilled agricultural, forestry, and fishery workers	1.2
Craft and related trade workers	10.8
Plant and machine operators and assemblers	4.1
Elementary occupations (low-skilled personnel, without a specific occupation)	7.8

Some peculiarities can be outlined from the comparison of migrants' occupations before departure and after their return. One-fifth of those who were managers before departure are non-working upon their return and as many work as service and sales workers. Highest is the percentage of non-working persons, and lowest is the level of correspondence between the occupations of persons who were skilled agricultural, forestry, and fishery workers. Highest is the level of correspondence for professionals as well as for craft and related trade workers (Table 7).

Other specifics that emerge from such a comparison are that 31.6% of the respondents, who stated that they are managers after their return, did not work before leaving the country, 15.8% were service and sales workers, and as many (15.8%) – managers. Of those who are employed as skilled agricultural, forestry, and fishery workers, 42.9% did not work before leaving Bulgaria, and only 14.3% held the same position. Of the persons without a specific occupation, 51.1% were employed on the same position before departure, and 30% did not work.

More than a quarter of the respondents claim that they have worked abroad in jobs that do not correspond to their qualification, i.e. their qualification was higher than required for the job (Table 8). The discrepancy between acquired qualification and occupied position is a prerequisite for a decrease/loss of qualification, which presupposes difficulties for the participation of migrants in the labour market in Bulgaria and necessity for additional training, leads to negative consequences for the quality of the labour force and the balance of the labour market in Bulgaria.

Table 7

Structure of returning migrants by occupation before the first departure and upon last return to Bulgaria (%)

Occupation before the first departure from Bulgaria	Occupation upon last return to Bulgaria										Total
	Did not work	Managers	Professionals	Technicians and associate professionals	Clerical and support workers	Service and sales workers	Skilled agricultural, forestry, and fishery	Craft and related trade workers	Plant and machine operators and assemblers	Elementary occupations	
Did not work	61.0	5.2	4.3	2.2	2.2	9.5	1.3	6.9	1.3	6.1	100.0
Managers	20.0	40.0	-	6.7	6.7	20.0	-	6.7	-	-	100.0
Professionals	16.7	8.3	63.9		5.6	5.6	-	-	-	-	100.0
Technicians and associate professionals	22.9	8.6	5.7	42.9	8.6	2.9	2.9	-	-	5.7	100.0
Clerical and support workers	23.8	4.8	4.8	4.8	42.9	9.5	-	-	4.8	4.8	100.0
Service and sales workers	30.0	6.7	1.1	2.2	5.6	44.4	-	2.2	4.4	3.3	100.0
Skilled agricultural, forestry, and fishery workers	44.4	11.1	-	11.1	-	11.1	11.1	-	-	11.1	100.0
Craft and related trade workers	32.3	-	-	4.8	-	4.8	1.6	56.5	-	-	100.0
Plant and machine operators and assemblers	20.5	9.1	-	6.8	2.3	4.5	-	15.9	36.4	4.5	100.0
Elementary occupations	30.0	3.3	-	1.7	-	15.0	1.7	6.7	1.7	40.0	100.0

Table 8

Conformity of migrants' qualification to the work they perform on their last return to Bulgaria – structure by gender, education, age groups and length of stay abroad (%)

Groups of migrants	Yes	Qualification is lower	Qualification is higher	Not working	No respond
Total	51.0	3.0	8.9	34.3	2.8
Man	57.6	3.6	7.9	27.3	3.6
Woman	43.1	2.2	10.2	42.7	1.8
Primary or lower education	39.8	8.5	1.7	48.3	1.7
Secondary general education	45.5	1.8	6.3	41.1	5.4
Secondary vocational education	56.4	2.1	9.8	29.1	2.6
Higher education	55.7	0.7	15.7	25.7	2.1
Up to 35 years	50.5	3.2	11.7	31.4	3.2
36-45 years	60.0	5.2	9.6	23.5	1.7
46-55 years	54.3	3.9	10.1	26.4	5.4
56-65 years	53.5	0.9	6.1	37.7	1.8
Over 65 years	22.4	-	1.7	75.9	-
Up to 1 year stay abroad	55.4	2.3	8.2	31.8	2.3
1 to 3 years	51.1	4.6	6.9	35.1	2.3
3 to 6 years	47.6	3.6	11.9	32.1	4.8
More than 6 years	38.1	2.4	11.9	44.0	3.6

Although to a much lesser extent, there is also a discrepancy between the qualification acquired and the position held by migrants after their return to Bulgaria. Such discrepancy is observed more frequently among women, persons of lower age groups and long-term migrants – with a stay abroad for more than 3 years. Men and migrants with shorter stays abroad – less than 3 years, have a more adequate participation in the labour market. For persons with secondary vocational and higher education, the share of those whose qualification corresponds to the work performed is highest, but the share of workers in places requiring lower qualification is also significant (Table 8).

Nearly 28% of migrants claim that they have not acquired any skills during their stay abroad or have even lost them, which does not lead to positive effects on the quality of the labour force in Bulgaria upon their return. At the same time, half of them have learned a foreign language, almost 20% say they have improved their qualification, and 30.2% believe they have learned to work better in a team.

Higher is the share among migrants, who consider themselves to have raised their qualification, of men, people with higher education, aged between 36 and 55 years, with a length of stay abroad exceeding 3 years. Those who claim that they have not acquired any skills are mostly women, over 45 years of age, with primary and secondary general education, with a stay abroad of less than 1 year. The share of young people and respondents with secondary vocational and higher education, however, is also significant (Table 9). Business contacts are mainly created by highly educated migrants, under 45, with a stay abroad of more than 3 years.

Table 9

Skills acquired by migrants broad –
structure by gender, education, age groups and length of stay abroad (%)

Groups of migrants	Learned foreign language	Raised qualification	Improved education	Created new business contacts	learn to work better in a team	Other	Did not acquire any skills	Not only did not acquire skills but even lost them
Man	48.8	24.8	1.8	11.2	34.2	3.3	25.2	0.9
Woman	51.3	12.5	3.3	10.3	25.3	6.2	28.2	1.5
Primary or lower education	47.0	16.2	0.9	2.6	35.0	0.9	29.9	0.9
Secondary general education	42.9	9.8	0.9	9.8	33.0	4.5	30.4	1.8
Secondary vocational education	57.3	18.8	0.0	8.5	26.9	4.3	26.9	0.0
Higher education	45.7	30.0	9.3	22.1	29.3	8.6	20.0	2.9
Up to 35 years	44.7	20.7	5.9	13.3	41.5	6.4	21.3	2.7
36-45 years	51.3	22.6	2.6	13.9	33.0	4.3	25.2	0.9
46-55 years	54.3	21.7	0.0	9.3	24.8	3.1	31.8	0.0
56-65 years	53.1	14.2	0.0	8.8	23.9	3.5	26.5	0.0
Over 65 years	48.3	12.1	1.7	3.4	12.1	5.2	34.5	1.7
Up to 1 year stay abroad	33.4	12.8	0.7	8.9	23.3	4.9	38.7	2.0
1 to 3 years	59.5	19.1	3.1	9.9	42.7	3.8	18.3	0.0
3 to 6 years	71.4	28.6	3.6	13.1	35.7	2.4	13.1	0.0
More than 6 years	73.5	33.7	7.2	16.9	30.1	7.2	8.4	1.2

The new knowledge and skills acquired by migrants, on the one hand, would have a positive impact on the labour force and the labour market if implemented in Bulgaria. On the other hand, they create better opportunities for future realisation of migrants abroad and are a prerequisite for a subsequent new departure – 40% of the respondents would like to leave again permanently or temporarily abroad.

Problems for the participation of migrants in the labour market are also caused by the fact that upon their return, they do not have a pre-arranged job. Nearly three-quarters of them had no proposals for suitable work before returning to the country. The majority of migrants who received a job offer are men, with vocational and higher education, and with a shorter stays abroad – less than one year (Table 10).

Table 10

Share of migrants who received a job offer in Bulgaria before their last return – structure by gender, education, age groups and length of stay abroad (%)

Groups of migrants	Yes	No	No respond
Man	60.8	52.7	50.0
Woman	39.2	47.3	50.0
Primary or lower education	10.5	22.0	30.0
Secondary general education	12.6	20.2	25.0
Secondary vocational education	40.6	39.1	20.0
Higher education	36.4	18.6	25.0
Up to 35 years	25.9	32.0	50.0
36-45 years	21.0	18.6	10.0
46-55 years	24.5	21.1	5.0
56-65 years	24.5	17.3	15.0
Over 65 years	4.2	10.9	20.0
Up to 1 year stay abroad	62.2	47.0	40.0
1 to 3 years	21.0	22.0	20.0
3 to 6 years	11.2	15.2	5.0
More than 6 years	5.6	15.7	35.0

Due to lack of a pre-arranged job, the discrepancy between acquired qualification and labour market demand in the country, decrease in qualification abroad and other reasons, over a quarter (25.4%) of migrants need help finding a job on their return in Bulgaria. More than one-third of the respondents claim they have no savings from their stay abroad, which is likely to cause 9% of them to need financial support, and 10% need psychological support.

Mainly persons with low education, aged 46-65, and long-term migrants are in need of assistance in finding employment. More women and persons who resided abroad for a short-term need financial support, and women and long-term migrants need psychological help (Table 11).

Table 11

Need for support upon the last return of migrants to Bulgaria – structure by gender, education, age groups and length of stay abroad (%)

Groups of migrants	Financial	For housing	For education of children	For finding a job	Psychological support	Other	I didn't need any support
Man	6.7	3.0	1.5	24.5	8.2	2.4	61.8
Woman	11.7	5.5	1.1	26.4	12.1	0.7	54.2
Primary or lower education	8.5	5.1	1.7	34.2	9.4	0.9	54.7
Secondary general education	7.1	1.8	1.8	20.5	10.7	0.0	65.2
Secondary vocational education	9.8	3.8	0.9	27.8	8.1	2.6	54.3
Higher education	9.3	5.7	1.4	17.9	12.9	2.1	62.9
Up to 35 years	11.7	6.4	0.0	21.8	10.6	1.6	57.4
36-45 years	7.0	4.3	0.9	27.8	8.7	2.6	58.3
46-55 years	7.0	3.1	3.9	31.8	8.5	0.8	55.8
56-65 years	12.4	3.5	1.8	31.9	11.5	1.8	50.4
Over 65 years	1.7	0.0	0.0	5.2	10.3	1.7	82.8
Up to 1 year stay abroad	13.8	3.9	1.0	21.6	8.2	1.6	61.3
1 to 3 years	3.1	3.1	0.0	35.1	12.2	0.8	51.1
3 to 6 years	6.0	7.1	4.8	32.1	6.0	2.4	53.6
More than 6 years	3.6	3.6	1.2	16.9	16.9	2.4	63.9

In general, women, low-educated persons, persons in pre-retirement age and long-term migrants with a stay of more than 6 years abroad are more in need of support upon their return to Bulgaria. These groups face greater difficulties in their reintegration into economic and social life in the country.

Conclusions

The majority of Bulgarian migrants are economically active persons, a large share of which are under 35 years of age. Their departure abroad creates prerequisites for a reduction in the labour force and in labour supply – for long as it concerns long-term migration and for a certain period of time in respect of short-term migration. The return of economically active persons would have a positive impact on the labour force, in case it is permanent. However, a large share of returnees, mainly economically active persons, intend to go abroad again.

According to the results of the empirical study, the majority of migrants have a short stay abroad – less than one year. The highest share of migrants is under 45, with a stay abroad of less than three years. The problems with the adequate realisation of young people in the

labour market in Bulgaria, including university graduates, are one of the main reasons for their departure abroad, as well as a barrier to their return. A shorter stay abroad, however, also unfavourably affects the balance of the labour market as well as the long-term one.

Upon their return to Bulgaria, one-quarter of the migrants identify themselves as unemployed, including persons with secondary vocational and higher education. Long-term migrants are more affected in this respect. Difficulties in their realisation in the labour market are created by changes in their employment by economic activities in Bulgaria and abroad; loss of qualification abroad due to employment in jobs that do not correspond to their qualification; lack of a pre-arranged workplace upon their return; and others. These problems force some of the returnees to work without a labour contract or in jobs that do not correspond to their qualification.

Not a small share of migrants claim that they have not acquired any skills abroad and even that they have lost, which makes it difficult for them to find a suitable job in Bulgaria. Some of them manage to improve their qualification abroad, to gain new knowledge and professional experience, which, if properly implemented in Bulgaria, would have a positive impact on the quality of the labour force and the balance of the labour market in the country. A large share of returning migrants, however, state they would like to go abroad again. These are predominantly persons under the age of 40, with secondary vocational and higher education.

Due to the problems with their reintegration into the labour market and the economic life in Bulgaria, not a small share of the returning migrants need job-finding assistance, as well as financial and psychological support.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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EFFECTS OF THE EU ELECTRICITY MARKETS OPENING ON COMPETITION AND PRICES

The paper studies the ongoing regulatory, institutional and organisational developments in EU energy sector during the last two decades that change the way electricity markets operate. In particular, it addresses the EU efforts in creating competitive and sustainable electricity markets. Its aim is to explore the effects of the reform on market competition and electricity price evolution. The paper firstly presents the specific aspects of the electricity market, which helps to understand its overall functioning. The current electricity market structure, participants behaviour and market performance are discussed. The analysis presents the contradictions between the EU energy and climate targets and their adverse impact on end-consumers, who are stated as the main beneficiaries of the reform. The study comes to the conclusion that the persistence of shortcomings in the electricity market defined by policy deficiencies at an EU level and diverging energy policies at a Member State level requires further efforts to make national markets work as a single European energy market with common rules and prices.
JEL: D40; Q20; Q41; Q42

Introduction

Providing an important input and service to the other economic sectors, the energy industry is a cornerstone for the overall development of the economy. Over the years the steady rise in electricity demand has demonstrated the high dependence of modern industrialised societies on secure electricity supply. Furthermore, the expected growth of electricity share in the world's final energy consumption to 24% in 2040, compared to 19% in 2018 (IEA 2019, p. 258) further emphasise the significance of the reliable access to electricity at affordable prices for the economic growth and international competitiveness.

Due to the leading socio-economic role of electricity, the introduction of competition in energy markets is of great importance than in many other sectors of the economy. The underlying principle for this profound change in electricity markets is the economic insight that competitive markets should lead to efficiency gains, optimal allocation of society's resources, technical progress, firm's flexibility to adjust to a changing environment, thus

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reducing market prices (Motta 2004, p. 3). In this context, the EU policy on bringing about pro-competitive change in electricity generation and supply and improving sector regulation on network services is supposed to enhance competition in the wholesale and retail markets and reduce end-user prices. However, the physical characteristics of electricity as a commodity that is "transmitted at the speed of light through the electricity grid" (Hunt, 2008, p. 69) and the specifics of its supply chain set high requirements for the liberalisation reform and the establishment of efficiently functioning electricity markets.

Given the developments in recent years, as well as the technological and policy changes being in progress, this poses the necessity to investigate the results of the pro-market reform in the energy sector till now. While there are many issues, related to the functioning of electricity markets, this report focuses on those related to competition and prices in electricity markets.

The main focus of the paper are the ongoing changes in the EU electricity sector that include successful and unsuccessful attempts to create a new legislative framework, new regulatory mechanisms and new electricity markets with more competition and increasing share of renewable energy sources (RES). The objective of the article is to study the progress in energy market reform and to assess the results of the practical implementation of liberalisation on market competition and electricity price development. The main thesis is that two decades after the beginning of the reform, the liberalisation of the markets is still an ongoing process. The persistence of shortcomings in the electricity markets defined by policy deficiencies at an EU level and diverging energy policies at a Member State level requires further efforts to make national markets work as a single European market with common rules and prices. The paper discusses mainly the changes in the last fifteen years 2003 – 2018 in order to analyse current events and draw conclusions and recommendations.

The rest of the paper is organised as follows: section one provides a description of the electricity market specifics, which make this market different and largely complicate its competitive development. A comparison between traditional and liberalised electricity market is made and the marginal pricing mechanism is discussed. Section two makes a review of EU dynamic regulatory framework concerning the liberalisation of the national markets and the creation of an internal electricity market. On the basis of the recent statistical data section, three examines the latest developments with regard to electricity market structure, including number and market share of main generators and suppliers, merger and acquisition activity in the sector, the entry of new participants, as well as the switching activity of consumers. It serves as a base for discussion of the market competitive deficiencies. Section four presents an analysis of wholesale and retail price evolution between 2008 and 2018. The main drivers behind are analysed, focussing on the penetration of renewables. The section takes a look at the composition of retail prices and determines how it has changed over time, how various policies have impacted prices and which elements contribute the most to their increasing or decreasing. This allows for the comparison of price developments over time and across countries. Section seven summarises the consequences of the reform and presents conclusions regarding the role of the market mechanism and the public regulation in creating a competitive electricity market.

The analysis is based on primary and secondary literature, legislative texts, government documents, strategy papers, company's reports and official statistics (Eurostat, IEA, OECD).

1. Traditional and liberalised electricity markets

1.1. Specific characteristics of the electricity market

The specific physical characteristics of the electricity as a good and the way it is generated, traded and consumed should be taken into account in order to understand why the electricity markets do not behave like other energy markets, such as natural gas or oil. In view of the functional structure of the electricity industry, the electricity supplied to end consumers consists of the energy commodity – the amount of power per unit time (KWh); the transportation service, which includes transmission, distribution and operation of the system; as well as the metering and invoicing services related to its final supply. As a commodity of a special kind – a coordinated flow of electrically charged particles flowing through a specially constructed electricity network – electricity differs from all other commodities exchanged in the market. It is a secondary energy product that has homogenous qualitative and technical characteristics, regardless of the primary energy resource used for its production (coal, nuclear fuel, water or wind power, solar energy, biofuels). As there isn't cost-effective energy storage on a large scale[2], yet, any oversupply of electricity is lost at the moment it is produced. However, in the case of a market deficit, the system is threatened by destabilisation. That's why power consumption (demand) and production (supply) need balancing at all the time.

Properties of electricity to be converted into different physical states determine its wide application. Functionally it could replace all products on the energy market, but the electricity itself has no direct substitute. This defines the low price elasticity of its market demand which allows price rising above the marginal costs in case of a market deficit.

Like other network industries (railway, water, and telecommunications) the electricity market is completely dependent on the network infrastructure. The distinctive features of transmission and distribution grid (economies of scale, necessity to operate as an interconnected system, the need of sufficient capacity to absorb the peak loads) make its duplication economically inefficient and hinder the entry of competitors. The characteristics of the networks allow network companies to close the supply chain through vertical integration with electricity generation and supply and increase efficiency in the industry. However, this stimulates cross-subsidisation between the different activities in the supply chain and allows preferential treatment of own enterprises with regard to third-party access to the network. The discriminatory potential is an economic disadvantage for other market participants. For this reason, even in a competitive market, network services remain a natural monopoly and their regulation is a key factor for competition development.

Another challenge to the functioning of a competitive electricity market is the constant daily, monthly and seasonal fluctuations in electricity demand. The continuous changes of periods with peak and lower consumption require the maintenance of sufficient production capacity

[2] Currently, there is limited storage capacity in the EU electricity system (only around 5 % of the installed electricity production capacity) almost exclusively from pumped hydro-storage. The development of other forms of storage, such as batteries, flywheels, hydrogen, chemical storage, is still rather limited. Source: DG for internal policy, European Energy Industry Investments, 2017, p. 33)

that could cover the base and peak load in the short and long term. Therefore, a diversified energy mix is needed, part of which is not constantly loaded, the so-called cold reserve.[3]

Meanwhile the high capital intensity and the long construction and payback period of the plants raise high entry and exit barriers which make impossible the quick reaction (building new capacity or network) in case of power shortages in the market. Thus, in the short term, generators are protected from competition, which facilitates consolidation, market concentration and information asymmetry in the sector. Since the construction of power plants is characterised by a significant sunk costs, the decision of investment in new plants is highly dependent on the expected future revenues. So, the fluctuations in wholesale market prices, the fuel price changes, the technology characteristics, the operational costs, as well as the EU ETS CO2 price are all related to the risks which should be considered.

1.2. A comparison between a regulated and liberalised electricity market

The specifics of the sector defined the structure and organisation of traditional non-liberalised European electricity markets. In most of the countries prior to liberalisation, an incumbent monopolist (single vertically integrated companies) ranged across generation, transmission, distribution and final supply of electricity. There was no competition in each segment of the industry and customers had no choice of a supplier regardless of the consumer's size. The dominant company has full responsibility for the long term supply of electricity which was ensured by long term take or pay contracts that guaranteed the security of supply. The cross border trade was controlled by the monopolists from both sides of the border who allocate the transfer capacity on the interconnector.

Traditionally in the regulated market, the state plays the role of both an owner and a regulator. The government sets the retail electricity prices, seeking to prevent price volatility in order to protect end customers from price uncertainty. Prices are set on the basis of average production costs for power plants. This pricing method allows the higher costs of less efficient plants to be offset by the lower costs of more efficient plants. The costs for expansion and modernisation of the electricity system are also included as an investment component in the final price of the electricity. Thus, the investment risk is easily transferred to end-users, even in cases when the investment projects for the development of the electricity network are not optimal and there is a discrepancy between projected and actual electricity consumption.

A liberalised electricity market, by contrast, functions in a completely different way. First, monopoly power is not accepted. Theoretically, competition in electricity generation and supply activities should be between as many market players as possible and the price signals define the commercial decisions, thus maximising efficiency and minimising costs and prices.

[3] Along with the base plants (nuclear and coal power plants), which operate continuously and are designed to meet the base load of the system, additional generators (water, gas power plants) must be available in order to quickly and easily switch to high or low productivity depending on consumption changes.

An advantage that liberalised markets have over traditional markets is the creation of an exchange trading and financial instruments which improve the efficiency in the market by giving a range of price signals and allowing a range of risks to be hedged. Wholesale market transactions reflect the fact that electricity has to be delivered when it is needed: They match supply and demand at each point of time resulting in different markets depending on the time horizons: long-term contracts market, forward and future markets, day-ahead market, intra-day market, balancing market which ensures that demand is equal to supply at any time.

The role of the government and the sector regulator is to implement rules for the natural monopoly segments – the network services – by promoting reasonable charges for the access and the use of the network by new market participants. Thus, in liberalised markets, network operators are important market intermediaries that not only guarantee efficient management and security of supply, but also support trade relations and future market development.

From a theoretical assumption, the end consumers in a liberalised market can choose their contract with respect to price, conditions (fixed or variable rates) and energy source ('green' versus conventional power sources). Suppliers charge customers according to their specific contract for the energy delivered, as well as network costs, taxes, surcharges and possibly levies for various other policy objectives as renewable energy support.

1.3. Electricity price formation in liberalised markets

The wholesale markets have a key role in the liberalised electricity market as they set the prices, which are then passed on to the retail customers. The technological possibility to produce electricity from different primary energy resources, using technologies with different operation efficiency, economies of scale and dependence on weather conditions, further complicates the nature of electricity markets. This feature of production causes large differences in the structure of fixed and variable production costs of individual power plants which gives an advantage of one company over the others.

Spot electricity markets are designed based on a marginalist approach and the construction of a merit order. In practice, the various power generators offer quantities of electricity at different prices, which are ranked from cheapest to most expensive. So, to minimise the costs of electricity production, the plants with the lowest short-term marginal costs per unit of electricity are called to dispatch first (most often using hourly fuel consumption per MW). If demand increases, plants with higher costs are included, until electricity consumption is satisfied. In theory, the price paid for the provision of electricity at a certain point in time equals the marginal costs of the marginal generator which was called to dispatch. This mechanism of competitive market operation allows electricity to be generated at the lowest possible cost for each hour of the day.

When this market design is combined with higher shares of renewable generation, some market distortions occur. The renewable facilities, such as wind and solar, having nearly zero marginal production costs, are dispatched first. However, the decrease of wholesale prices thanks to the penetration of renewables doesn't mean a real decline in the full system cost of electricity generation because renewable technologies are not too cheap in terms of total cost yet. It only reflects the very low marginal costs of production of renewables that gives them

priority in dispatch. This paradox leads to a divergence between the true cost of the system and the spot price of electricity in markets with high shares of renewable energy. Given the intermittent nature of renewables, this further increases the inherent price volatility in electricity markets.

In this context, the effectiveness of marginal pricing and its ability to cover capital costs and stimulate necessary investment in flexible production capacity (conventional plants) for ensuring the security of supply is questioned. As mentioned above, due to the specifics of the power system, the moment of production of electricity coincides with the moment of its practical consumption. Producers do not enter the market with a certain amount of products at a given price. Consumption fluctuations during the year cause changes in the operational load of power plants, which activity is optimised on the basis of the lowest hourly, daily, weekly or seasonal marginal costs throughout the energy system. This makes the competitive electricity market "unique" because producers do not know exactly how much electricity they will produce and what total short-term costs they will have.

That feature of the power system is often underestimated, which creates problems in the pricing process. The hourly costs include only the variable costs of electricity generation. They are not short-term costs in the sense of microeconomics that set prices in "normal" markets. In general, short-term costs cover the entire short-term period (year) and include both variable and fixed costs, on the basis of which the average total costs are calculated, which reflect the real value per 1 kWh of electricity. Theoretically, the spot electricity market is not a real short-term market because its prices do not reflect the real value of electricity. This can be done for the entire short-term period on the basis of short-term total costs for electricity generation. The distinction is important for the energy industry due to the constant fluctuations in consumption at different times of the day and the inability to separate production and consumption processes.

While in the pre-liberalisation period capital costs were incorporated and distributed within the overall rate structure, in marginal cost pricing, the capital recovery element is eliminated and relies solely on the price per kilowatt for an hour. Plants with marginal production costs, that are lower than the market-clearing price, earn additional revenues and could cover their fixed costs. The marginal plant, which determines the price of the system, receives revenues to cover its marginal cost, while those after it who do not produce at this volume of demand receive nothing, but it does not mean that they are unnecessary. In the case of peak consumption or in case of an accident in some of the power plants, they are dispatched.

With the growing share of subsidised intermittent wind and solar energy that leads to both a decrease in wholesale electricity prices and an increase in their volatility, the profitability of conventional generators is undermined. To stay in the system, the shorter the periods when these plants are dispatched, the more revenues should they receive. This means sufficiently high price levels and sufficiently high load factors (Epermans 2019). However, relying on very high prices is quite risky for any market, but also quite problematic for a politically sensitive market such as the electricity one.

Another impact of RES deployment is the so-called "cannibalisation effect". As a consequence of the zero or even negative market prices, the quasi-rent is zeroed and producers are incapable to recover their fixed costs. This price-reducing effect drives down

the market value of RES capacities too, i.e. RES are said to cannibalise each other. (Metis studies 2019, p.13)

Therefore based on the existing market design, the penetration of renewables capacity has its limits because renewable generators would be unable to earn a return on their investment without conventional technologies to provide a floor for electricity prices. So, with the current market design and renewables policies, the energy system relies on the availability of flexible generators that have already covered their capital costs which practically mitigates the problem. Another opportunity is the long term contracts where prices include total costs, i.e. the forward market for long-term contracts occurs the real electricity market.

2. EU energy legislation and the internal electricity market

2.1. Regulatory and institutional framework

Traditionally the energy policy has been national government competence and prior to the Treaty of Lisbon, the progress in EU energy legislation has strongly depended on the voluntary cooperation by member states. The European Commission was the initiator of the reform introducing competition in the electricity market. The 1987 Single Act mandated it to conduct policies towards a single market in communication, transport and energy.

The primary legislation by which the EU has brought about a change is through three electricity directives in 1996 (96/92/EC), 2003 (03/54/EC) and 2009 (09/72/EC), part of the Three Liberalization Packages. Prior to this legislation, only few countries – the UK, Sweden and Norway, had liberalised their electricity sectors and introduced competition in their wholesale power markets. The First electricity directive allowed every country to choose between regulated and negotiated third-party access to the transmission network and the separation between transmission and supply companies was only on the basis of companies' accounts. As Member states had different opinions on the principles of liberalisation and its advantages over the existing monopoly structure in the electricity sector, this first attempt of the EU commission to push ahead the creation of a liberalised common market was not successful. In 2003 the Second Electricity Directive forced the slowly reforming countries to make progress with the pro-market reform. Member states were required to ensure that industrial consumers had the freedom to choose a supplier not later than July 2004 while domestic consumers not later than July 2007.

Despite the EU regulatory interventions, electricity market transformation remained slow. There were registered serious delays in the implementation of the liberalisation packages amongst Member states, as well as "nationally inspired policies" and distortions of competition in the electricity markets. More specifically, they include:

- high levels of market concentration and a lack of liquidity in national markets;
- a low level of cross-border trade and little integration between Member States' markets;
- an absence of market information and limited trust in the pricing mechanism;
- persisting vertical integration of generation, supply and network activities;

- no freedom of choice for customers. (DG COMP, 2007)

The persistence of systematic competition inefficiencies paved the way for the introduction of the Third Electricity Directive in 2009. It imposed further stronger regulatory requirements for competition enforcement with regard to the unbundling of generation, transmission and distribution; strengthening of the powers and independence of sector regulators; increasing of cross-border regulatory coordination, 10% minimum interconnection levels between member states, removing of regulated retail prices. It encouraged the move to a single market by removing barriers to entry into national electricity markets and established an Agency for the Cooperation of Energy Regulators (ACER).

The climate related-initiatives are another element that currently affects the level of competition and prices at electricity markets. In the general environment, society and economy are independently operating systems which at the same time interact closely with each other (Petrova 2018, p. 59). Since the conference in Houston in 1999 where "the end of the oil age" was announced and the need for a shift from a carbon to a hydrogen economy was justified (Stoyanova 2011, p. 39), countries have been pursuing climate and energy targets. By accepting the Climate and energy package[4] in 2007, the Member States backed the Commission's drive for a common energy policy and approved the link between climate and energy policies. In 2014 the European Union reconfirmed this linkage by the approval of the 2030 Framework for Climate and Energy.[5] The realisation of the climate and energy priorities is directly related to EU member states leadership role in the implementation of the Intended Nationally Defined Contributions (INDCs), which are at the heart of the Paris Agreement on Climate Change (Tsonkova 2019, p. 170).

The Energy Union package launched in 2015 put together the decarbonisation objectives and the energy policy priorities. It set broader goals concerning energy security, internal energy market, energy efficiency, decarbonisation, research, development and competitiveness. The legislative proposals building the Energy Union were delivered as a part of the 4th Energy Package tabled in 2016: 'Clean Energy for All Europeans'. The ultimate objective of all these legislative initiatives is to have a well-functioning fully integrated, liberalised and decarbonised EU energy market. The assumption is that efficient energy market will not only lower energy costs and wholesale and retail prices, but will also ensure electricity price convergence at an EU level and keep industry competitive, delivering enough revenues for major sector investments. The end consumers are supposed to be the biggest beneficiaries of the reform receiving the right to choose the offer that best fits their needs. The achievement of these goals should contribute to the overall transition to an energy-efficient and sustainable EU economy in which new jobs are created, the resource productivity is increased, the environment is protected, the energy dependency is reduced and the economic growth is improved.

[4] In 2007 Climate and Energy Package.the EU has set its 2020 targets They include a 20% reduction in CO2 compared to 1990 levels; a rise of renewable energy to an amount of 20% of energy consumption in the EU, and a 20% increase in energy efficiency.

[5] It increased the binding targets to 40% reduction in greenhouse gas emissions; >27% renewable energy in final energy consumption and >30% increase in energy effciency, as well as the completion of the internal energy market (interconnection target of 15% between Member States).

The process culminated with the launch of the European Green deal at the end of 2019, announced as a new ambitious strategy for economic growth that will make EU economy sustainable. It is seen as a means for the "greening" of the European economy by integrating sustainable development into all EU policies. It works through a framework of new regulation and legislation setting targets. The net-zero carbon emissions by 2050 and a 50-55% cut in emissions by 2030 compared with 1990 levels are at the core of the strategy, alongside the incentives to encourage private sector investment, changes in rules for state subsidies that will suspend the support to fossil fuels, a revision of the carbon trading scheme. This raises serious socio-economic concerns for the Member States like Bulgaria where the production of electricity and heat from coal contributes to over 90% of GHG emissions in the sector and around eleven thousands of people are engaged in the coal industry.

The wide energy legislation that the European Commission has adopted witnesses the complexity of the electricity market transformation and the difficult EU energy transition. EU policymakers have attempted to ensure greater degrees of liberalisation as well as to achieve increasing environmental sustainability, security of supply and competitiveness of the EU economy. However, there is a paradox: the introduction of market competition is inevitably accompanied by an increase in regulatory activity. Given the fact that the classical laws of competition do not entirely apply in the electricity market, where barriers to competition exist, flexible regulatory models for reorganising the behaviour of market participants through a variety of rules and standards, taxes, levies and subsidies, price caps or some type of price regulation have proved necessary. Thus, re-regulation is both a result of liberalisation and a means for its successful implementation.

3. Status quo of EU electricity market

3.1. Overview of wholesale and retail market structure

The policy of introducing competition in electricity markets in the EU has proved to be a difficult task and the above-mentioned expectations as a result of market liberalisation have not fully justified. Since 2003 when the Second energy package was adopted with the requirement for unbundling and competition, the total number of effective competitors has been increasing. Although thousands of companies are now active in the EU electricity markets, the number of main electricity generators[6] in the EU fluctuated between 75 and 83 companies between 2003 and 2018. At a member state level, there has been very heterogeneous development. There are countries where the main generating companies have increased with one or two (e.g. Portugal, Germany, Luxembourg), another group of countries where their number has decreased (e.g. Denmark, Estonia, Croatia,) and a third group of countries where no change in main generators has been registered (Cyprus, Latvia, Slovakia and Bulgaria).

It should be noted that in several countries where first an increase in 2010 was registered, a few years later main companies decreased again (Italy, Belgium, Sweden, Ireland, Lithuania,

[6] Main generating company is a company that produces at least 5% of the national net electricity generation.

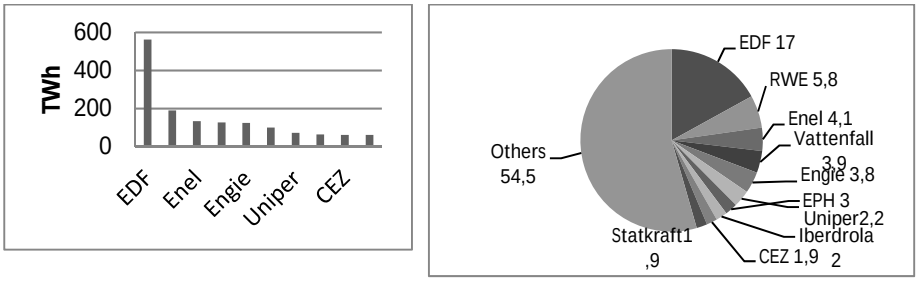
United Kingdom). In the UK the restructuring of the electricity industry within the context of liberalisation resulted in a highly fragmented and competitive market between the late 1990s and the early 2000s. In this period the competition between a large number of generators and suppliers contributed to decreasing prices. However, a reconcentration of the market was observed as major European energy utilities entered the UK. Within a few years, a highly concentrated market arose, dominated by the big transnational companies (E.ON, EDF, RWE, Scottish Power, SSE). The French EDF and the two German companies RWE and E.ON have become the three largest generators and suppliers of electricity in the country.

A possible explanation of this effect of the national market opening was that it stimulated a wave of mergers and acquisitions in the sector across the EU. Former monopoly incumbents were encouraged to make restructuring of their business activities and cross border entry in neighbouring member states. Getting bigger through acquisitions was an opportunity for utilities to cope more easily with the energy transition, too.

French, German, Spanish and Italian companies (EDF, RWE, E.ON, Iberdrola, Enel and Vattenfall) extended their business outside the home markets in both generation and supply. By the mid-2000s, most of the smaller EU generators and retailers were acquired by major European-wide companies which resulted in the reintegration of the initially unbundled generation and retail. Thus, at an EU level, the market concentration has not been eliminated. This is proved by the few major market players present in several European countries either directly or indirectly through a subsidiary. The Top 10 European power generators provide near 45% of gross power generation.

Figure 1

Top 10 European power generators share in TWh, (%)



Source: RWE, Factbook, 2018, p. 24

The first three companies EDF, RWE and Enel group generate around 27% of EU electricity. The French giant EDF, which is the world's leading nuclear operator, with a nuclear fleet of 58 reactors in France and 15 reactors in Great Britain, has accelerated the development of renewables and has achieved a new balance for its generation mix. By developing low-carbon technologies, the company has bolstered its position in Europe, expanding into new geographical areas, mainly in Western Europe, as well as ensuring the presence in emerging markets. It has become the European leader in renewable energies with net installed capacity of 32 GW hydro, wind and solar power and more than 10 GW of projects under construction or already secured (EDF 2019, p. 121).

RWE, the second biggest company in European power generation, with diversified 43.4 GW net generation capacity, is the leading generator in the Netherlands and in Germany with 80% and 75% market share, respectively and the second biggest in UK. It has become a global leader in renewables too, especially in offshore wind. (RWE 2018, p. 23) The other German company E.ON expanded substantially and is already present in a majority of countries. The company owns and manages the energy distribution network of 980 000 km in Germany, Sweden, CEE and Turkey and has leading positions in energy sales in 8 EU countries with 22 million customers.[7] (E.ON 2019, p. 42)

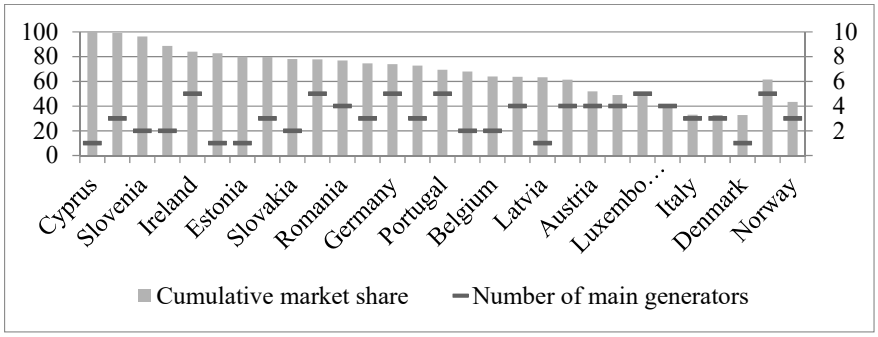
The Enel Group is the leading electricity utility in Italy and Spain and the second largest operator in the electricity sector in Portugal. The company is present in 32 countries (11 EU Member states) with 86 GW total installed capacity and 2.2 million km in the distribution network. With a market capitalisation of about 56 billion euros and 50 billion euros, respectively Enel and Iberdrola have grown to EU renewable energy giants.

The infrastructure funds, insurance and pension companies have been involved in the energy deals, too. They all seek for assets to generate steady and reliable yields. But rather than buying companies focused on green energy, funds buy a minority stake in the renewable energy assets, leaving the developer as the main operator with a majority ownership.

As a result of the strategic shifts in the market during the last two decades, in 2018 in half of the EU Member States one, two or three main generating companies reported a significant share of electricity generation at a national level. The cumulative market share of the main generating companies exceeded 60% in sixteen member states. All other generators are very small and can influence neither market price, nor market competition.

Figure 2

Number of main electricity generating companies and their cumulative market share, 2018



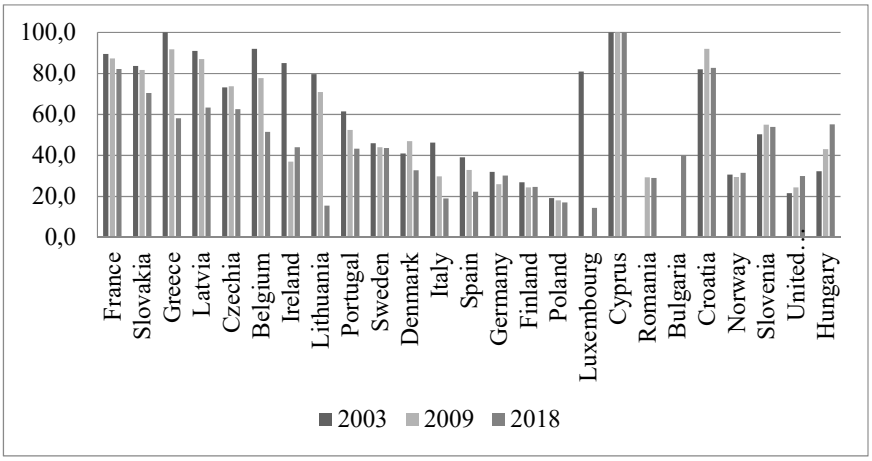
Source: Eurostat

[7] E.ON is the Top 2 in Germany and UK and Top 3 in Romania, Czech Republic, Slovakia, Hungary and Sweden. Switching to higher-earning activities such as solar and wind power, E.ON and RWE have separated the green energy and retail operations from their centralized power businesses. E.ON has retained the renewables business and put its old power plants in a company called Uniper. RWE, on the other hand, kept its traditional plants and put the green and retail businesses in a new company called Innogy.

Apart from Cyprus, where one single company dominates the national electricity generation, figures above 80 % for the largest electricity generators are observed in Estonia (80 %), France (82 %) and Croatia (83 %). Only in four member states Luxembourg, Lithuania, Poland and Italy, the market share of the biggest generator is below 20% while in most of the new Member states is above 50%.

Figure 3

Market share of the largest generator in the electricity market



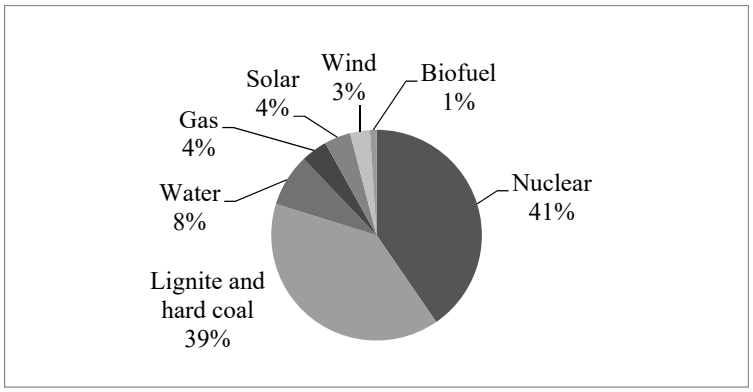
Source: Eurostat

In Bulgaria, the leader in electricity production is Kozloduy NPP EAD, with the largest market share of over 40%. TPP Maritsa East 2 EAD and ContourGlobal Maritsa East 3 AD have significantly smaller market shares between 10 and 15%. They are followed by the companies AES-3C Maritsa East 1 EOOD, TPP Bobov Dol EAD and HPP of NEK EAD which market shares range between 5 and 10%. For the above six companies, the total concentration index is with a value of 90 units, which is a characteristic of a concentrated market with limited competition. This conclusion is supported by the value of the Herfindal-Hirschman index, whose value is over 2,360 units.

The sufficient number of active suppliers is another important factor for the proper functioning of the retail electricity markets. They provide the link between wholesale and retail prices. The indicators of the number of suppliers and their entry and exit activity are indicative of consumers' choice of offers in the market, the existence of entry barriers and the importance of regional markets. Offering contracts with differentiated prices and giving customers adequate information concerning products, charges, quality and risk, supply companies help for the overall development of the electricity markets and the more efficient use of electricity. With this regard companies need to react to the shortening of the cycle for new products and service developing in order to increase their competitive advantages. (Dimitrova 2018, p. 6)

Figure 4

Energy mix of Bulgaria in 2019



Source: EWRC, Report on the activities of the Energy and Water Regulation Commission for 2019, p.31

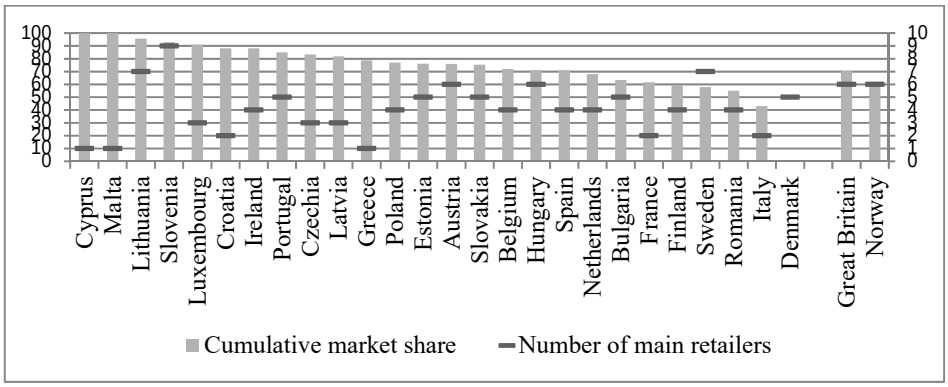
The liberalisation of the market has contributed to the entry of a large number of new market players. At an EU level, the number of active suppliers has gone from 2 871 in 2011 to 3 719 in 2016 and 4300 in 2018. However, in some countries, there are significant differences between the total number of suppliers and the number of nationwide active suppliers. The EU average number of active nationwide electricity suppliers per country in 2018 was around 40 in the sector, with smaller countries like Lithuania having 4 nationwide suppliers and others like the Czech Republic and Spain, with 79 and 215 suppliers respectively. For example, Italy is the country with the largest number of active suppliers 509, of which just 64 are active nationwide.

The reason behind is that the majority of new suppliers are more active in local areas or serve a few large industrial customers and have market shares below 1%. At the same time, the number of "main" electricity retailers in the EU stays stable around 100. In 16 member states, the market is served by between one and four main suppliers. In 10 of the countries, the cumulative market share of the main electricity retailers is over 80% which means that in these countries the market for non-main retail companies is below 20 %. The market for "minor" retail companies is the largest in Sweden (42 %), Romania (45 %) and Italy (57 %).

Slow developments can be seen in the market concentration measure CR3, which shows the market share of the three largest suppliers in the electricity retail markets. Between 2011 and 2016, the European average market share of the three largest suppliers in the retail electricity household segment fell from 84.3% to 80.6%, ranging between 38% and 100% by a member state. Only in 5 member states, there was no change or increase of the market shares by the three largest suppliers in 2016 compared to 2011. The most significant reductions in CR3 in this period were reported by Germany, Great Britain and Slovenia. Concerning the whole retail market, the market share of the three largest suppliers of electricity in EU-28 has dropped from near 79% to 63,5%.

Figure 5

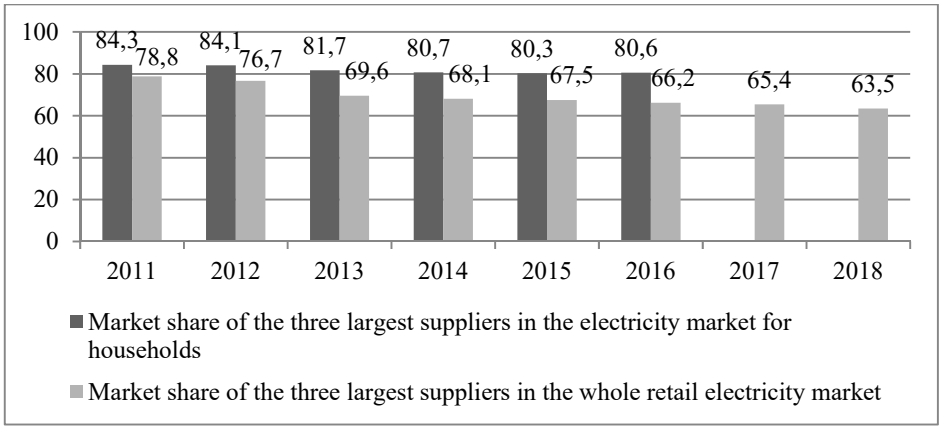
Number of main electricity retailers and their cumulative market share, 2018



Source: Eurostat

Figure 6

Market share of the three largest suppliers of electricity in EU-28



Source: CEER, Retail Markets Monitoring Report, 2017. 2018. 2019

In 2018 the countries with the lowest concentration ratio of CR3 were Great Britain, Norway and Sweden. There were fifteen countries with a CR3 equal or above 70%, in comparison to 2017, when there were thirteen countries. Hence, electricity retail markets continue to be dominated by a few larger suppliers which indicate low market openness, low market competition and low customer choice, respectively. Markets, where only one main company is dealing with the sales of electricity, are registered in Greece, Cyprus, and Malta.

The situation in Bulgaria is the same as in most of the member states. Despite the large number of suppliers in the household market (35), there is a very slight decline in the market

shares[8] of the three largest suppliers CEZ, EVN and ENERGO-PRO. In the household consumers market, suppliers with a market share of over 5% are eight. Seven suppliers have a market share between 1% and 5%, and twenty suppliers have a market share below 1% (EWRC Bulgaria**,** 2018, p. 31).

CEZ Electro Bulgaria AD has the largest market share, but it drops slightly between 2015 and 2018, from 44.76% to 40.01%.

Table 1

Market share of end suppliers in Bulgaria

End supplier	**2015**	**2016**	**2017**	**2018**
CEZ Distribution Bulgaria AD	44.76%	40.71%	40.79%	40.01%
EVN Bulgaria Electricity Supply EAD	37.85%	35.24%	35.83%	37.19%
Energo-Pro Sales AD	25.71%	24.05%	23.38%	22.81%

Source: EWRC, Annual Report to the European Commission, July 2018, p. 31

According to HHIs in 2018 in only seven of the countries the household market in electricity was low concentrated with the HHI scores below 2 000. Typically the level of concentration in European retail markets for households is higher than that of non-household markets where fourteen countries reported HHIs below 2 000. Still, there are countries as Cyprus and Lithuania, where HHI value is 10 000, meaning that there is just one supplier and therefore no competitive development. (CEER, 2018, p. 20) This suggests that at the retail market level, additional efforts are required to increase retail competition.

Table 2

HHI for the household market based on metering points in electricity for selected countries, 2018

HHI < 2 000	Denmark, Sweden, United Kingdom, Austria, Slovenia, Netherlands, Norway
HHI 2000 – 4 000	Belgium, Estonia, Romania, Poland, Bulgaria, Hungary
HHI 4000 – 10 000	Italy, France, Portugal, Luxembourg, Greece, Croatia, Lithuania, Cyprus

Source: CEER, 2019, p. 20

3.2. Development of switching rates in electricity retail markets

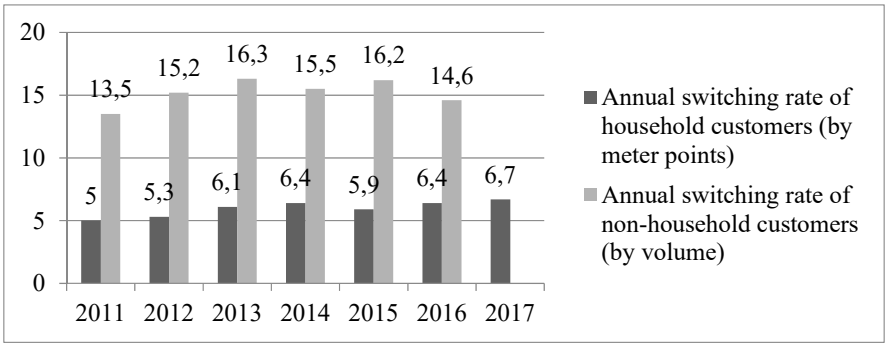
The value of the switching supplier index is another important indicator in analysing the latest competitive development in retail electricity markets. As mentioned above the process of liberalisation could benefit consumers if only they have the practical possibilities for switching their incumbent supplier with a new one.

[8] Market shares of end suppliers are calculated on the basis of energy sales to household and non-household customers connected to the low voltage distribution network. End suppliers participate in the regulated market and supply electricity to a geographically limited market within the license of the economic group distribution network operator. In practice, suppliers that are end suppliers are not in competition with each other. (EWRC Bulgaria, 2018, p. 31)

When comparing the 2011 and 2017 levels of the average switching rate of households in the EU, a slight increase from 5% to 6.7%, is observed. This trend is consistent with the increase in the number of active suppliers, which has led to a greater variety of products and price differentials in the market. However, the figures show that a large part of the consumers has remained inactive and doesn't switch their incumbent.

Figure 7

Switching rates in the EU electricity retail markets, (%)



Source: CEER, Retail Markets Monitoring Report, 2016, 2017, 2018

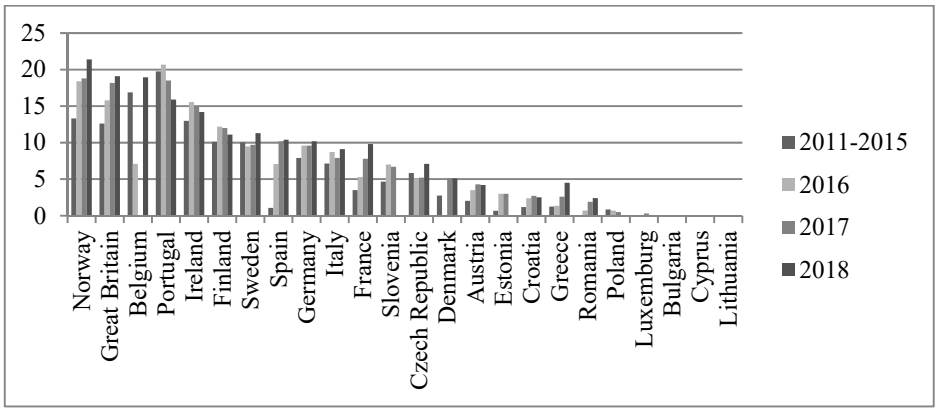
In general, the average switching rate in the non-household segment across Europe has higher values than in the household segment (around 15 %), which can be explained by the high saving potential of industrial consumers. However, the values of the index are a signal that there is no effective competition between the suppliers in the EU market, and the customers do not have incentives to change a supplier, as well.

In addition, there are still big differences between member states' external switching rates of household customers ranging from 0% to 21.4%. In 2018 the highest external switching rates were recorded in Norway (21,4%) and in Great Britain (19.1 %). Other countries with a relatively high switching rate (above 10%) were Belgium, Ireland, Finland, Sweden, Portugal, Spain and Germany. An upwards trend could also be seen in some Eastern European countries such as Croatia, Czech Republic, Greece and Romania, where electricity consumers had access to more offers compared to previous years. Meanwhile no or almost no switching was reported by Bulgaria, Lithuania and Poland (0% – 0,04%). In Bulgaria, household customers' value of the switching supplier index was 0,002% which indicates the negligible number of free-market consumers. In Cyprus and Malta, there is only one supplier, so switching is not possible.

Concerning the change in electricity switching rates of household customers from 2017 to 2018 Belgium and Norway are the countries with the highest increase in external switching rates in electricity, compared to the previous year (+ 3% and +2.6%, respectively). A significant increase was also reported in France, Greece and the Czech Republic.

Figure 8

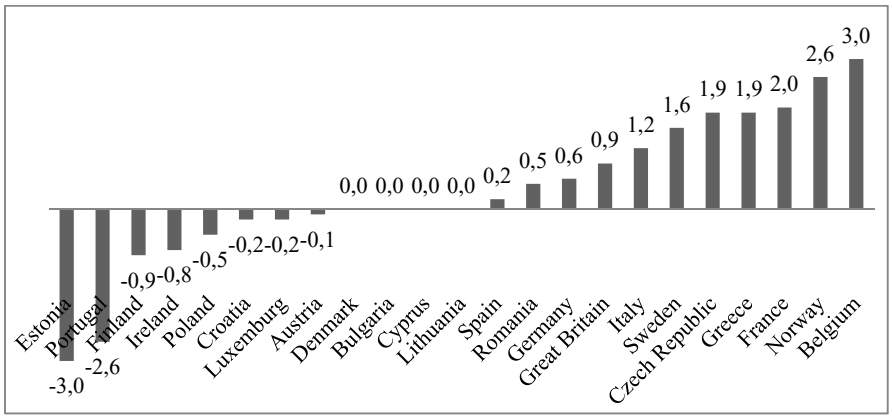
Switching rates for electricity household customers, (%)



Source: CEER, Retail Markets Monitoring Report, 2016, 2017, 2018, 2019

Figure 9

Change in electricity switching rates of household customers from 2017 to 2018



Source: CEER, Monitoring consumer protection, empowerment and retail energy market, 2019

A decrease in switching rates in 2018 in comparison with 2017 was recorded in eight member states which indicate an unfavourable trend for customers returning back to the regulated market. It was the most in Estonia and Portugal (3% and 2,6% respectively).

Similar to the household segment, switching rates for non-household customers differ significantly across MS. Countries with a high switching rate are the Czech Republic, Italy, Lithuania, Poland, Portugal and Spain (at least 25%).

There are multiple reasons for customers not to switch their supplier. In the first place, they can refer to regulated prices. If they are set below cost levels, the development of competitive

retail markets is hampered and no economic incentive for switching exists. In this case besides the existence of suppliers on the market, household customers do not switch. In 2018, in eight out of 14 countries with price intervention in electricity, there was still an end-user price regulation for household customers (Bulgaria, Cyprus, France, Hungary, Lithuania, Malta, Spain, Poland and Portugal) In some of them the market seems to be completely closed, as 100% of the households are under a price intervention mechanism. This is the reason why the external switching rate in Bulgaria and Lithuania is very low (0% – 0.04%). France also has a high number of households under a price intervention mechanism in electricity (77.3% in 2018 and 82% in 2017) which is price regulation.

The insufficient monetary incentives are another reason for not switching. If taxes and other fixed price components make up a high percentage of the final price, there is no saving potential from switching. In addition, behavioural aspects also play a major role in making a decision for switching the supplier A lack of trust in new suppliers or loyalty to the old supplier may prevent customers from switching as well as the complex and time-consuming switching procedures.

4. Evolution of electricity prices

4.1 Wholesale price developments

The sluggish economic growth that limited power demand from various sectors of the economy on the demand side, as well as an increasing share of renewables, decreasing fossil fuel costs and permanently low carbon prices on the supply side contributed to the downward wholesale electricity price trend in the 2011-2017 period. In this context, after the reached peak of 82 €/MWh in the mid of 2008, European wholesale electricity prices fell back as the economic crisis broke out and stabilised in the range of 39-46 €/MWh in 2009-2010 period. The price evolution of coal and gas directly influenced wholesale electricity prices in the European markets, because these two input fuels usually set the marginal costs of electricity generation. As both coal import prices and natural gas prices decreased significantly since the beginning of 2011/2012, the fossil-fired power generation costs became lower. In the second quarter of 2014, the PEP fell to 38-39 €/MWh, being the lowest since the summer of 2009. At the beginning of 2015, the coal prices further decreased below 50 €/Mt, reaching the lowest level since 2009. In addition, the low carbon prices contributed to the competitiveness of coal.

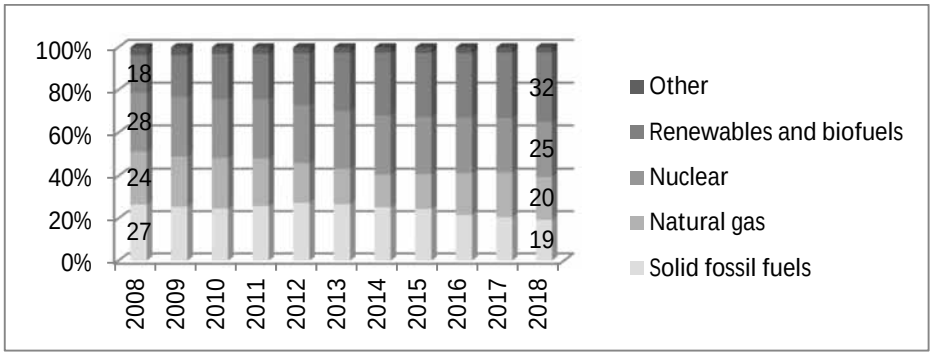
In the second quarter of 2016, wholesale baseload electricity prices reached their lowest quarterly averages in the last decade in many European markets (Belgium, Germany, Great Britain, Italy and the Netherlands). The average European wholesale electricity price was 31 €/MWh. German prices were among the lowest in the EU (28.98 euros/MWh on average). Overall, this trend is consistent with lower gas prices in 2016, when prices fell by 30% compared to the previous year.

This downward trend of electricity wholesale prices was due to, among other factors, the increasing share of renewables in the European power mix. While in accordance with the EU's 20-20-20 targets industrial plants were increasingly required to carry out their activities

complying with certain environmental protection measures (Pencheva 2016, p. 13), including restrictive emission standards for conventional electricity generators, the renewables have been subsidised by national governments (mainly through feed-in tariffs, feed-in premiums, green certificates and investment grants). As a result, the structure of the EU energy mix has changed.

Figure 10

EU 28 Electricity generation mix, 2008-2018, (%)



Source: Eurostat

The relative share of renewables-based electricity generation has increased dynamically in parallel with the slight rise in electricity demand in the EU and the decreasing electricity production from conventional power plants, respectively. The share of the renewables sector in the power mix of EU has reached 32%.[9]

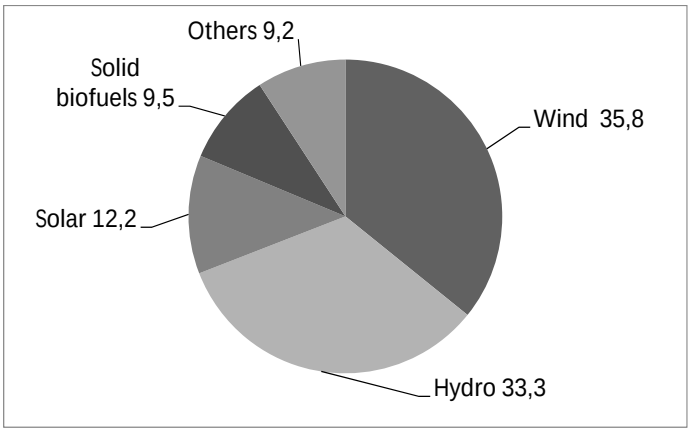
The growth in electricity generated from renewable energy sources reflects an expansion in three renewable energy sources – wind, solar and solid biofuels. The increase was most significant for wind and solar generation plants. As a result, the hydro-power was replaced by wind power as the largest source for renewable electricity generation in the EU-28.[10]

[9] The EU produced a total of 44% of the world's solar electricity. As a percentage of the world solar electricity generation, Germany ranks second with 15.7% after China 18.3%. The EU has a significant share in the global wind electricity generation, too (35.7%). Germany has the largest share of European countries in the world electricity production by wind with 9.5%. In front of it are the US with 23% and China with 22.2%. The EU-28 also accounts for 10% of the world's electricity production by hydro power, with Sweden in the first place with 2%.

[10] The quantity of electricity generated from solar was 15,5 times as high in 2018 as in 2008 giving 12,2 % of the total quantity of electricity generated from renewable energy sources. Almost 40% of the solar-PV electricity in the EU-28 was produced in Germany, Italy and Spain. The relatively high increase in these countries is due to the greater policy support for renewables.

Figure 10

Gross electricity generation from renewable sources in EU, 2018. (%)



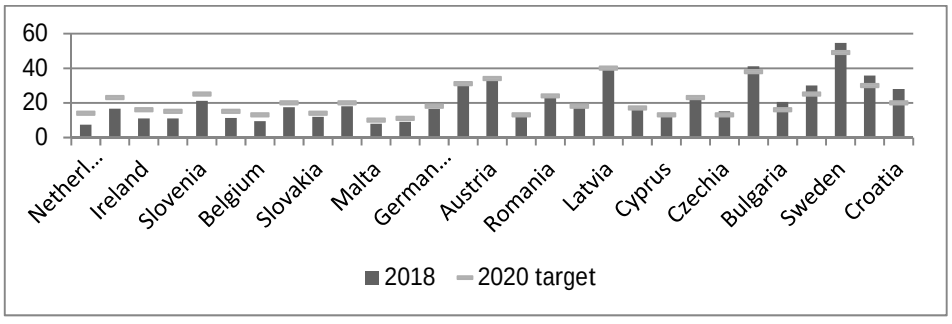
Source: Eurostat

In spite of the increasing wind and solar capacity installations in the EU, hydro-based power generation still remains an important energy source. The electricity generated from hydro is relatively similar to a decade earlier, i.e. around 33 % of total electricity production.

In 2018 the share of energy from renewable sources in the gross final consumption of energy in the European Union reached 18% against a target of 20% for 2020, above the indicative trajectory of 16% for 2017/2018. Twelve of the EU Member States have already achieved their national 2020 targets among them Bulgaria, Romania, Croatia, Czech Republic, Denmark, Finland and Sweden. Sweden had the highest share with 54.6% of its energy coming from renewable sources in its gross final consumption of energy. On the contrary, the Netherlands and France are the furthest away from their national 2020 indicative targets with 6.6 % and 6.4 %, respectively.

Figure 11

Member States' progress towards 2020 targets in renewable energy



Source: Eurostat

Since 2013 Bulgaria has exceeded its national target of 16% share of renewable energy in gross final energy consumption for 2020. In 2018, a 20,5% share of renewable energy was achieved in the gross final energy consumption of Bulgaria. The production of electricity from renewable energy amounted to 8,5 GWh and increased by 42% compared to 2012. Although on the supply side, the share of RES in the electricity generation mix has been increasing, their downward impact on day-ahead prices was offset by the increase of the costs of fossil fuel electricity generation. In 2018 the prices of coal, gas and CO2 European Emission Allowance increased by 4%, 32% and 170%, respectively.

The increasing prices in 2017 and 2018 broke the downward price trend, observed in the previous years. In 2017, average DA electricity prices increased in all bidding zones. The highest electricity price increases were recorded in the Czech Republic, Slovakia, Hungary and Romania (4MMC market), followed by the Iberian and Italian markets, with an overall price increase of 34%, 32% and 25%, respectively, compared to 2016. On a year-to-year basis, the 2018 prices in the Nordic and Baltic regions and Poland showed the highest rate since 2011. As a consequence the highest annual average DA prices were observed in the British, Italian, Irish (SEM), Greek and Iberian markets, whereas the lowest annual average DA prices were recorded in the Bulgarian, Nordic and German markets.

On the demand side of the market, the main factor for the increase in DA prices is the economic growth. The EU's gross domestic product grew by 2.5% compared to the previous year, which is the highest annual growth rate since the beginning of the financial and economic crisis.

On the supply, side prices are mainly explained by changes in the European generation mix and in fuel prices. As regards fuel prices, both gas and coal prices increased significantly. Generation technologies with relatively low variable costs, such as hydro and nuclear power, were partly replaced by more expensive fossil fuel-based technologies. In particular, the share of electricity generated by gas-fired power plants increased, reaching its highest level in seven years.

Additionally to the general price drivers, specific regional and national factors also affected the upward evolution of the 2018 DA price. In the 4MMC market, the price increase is explained by the limited availability of flexible generation technologies at times of high demand putting upward pressure on prices, e.g. limited coal generation due to frozen stocks and frozen rivers in Hungary in January 2017, or lack of nuclear generation due to unplanned outages in Romania during the heatwave in August 2017. In the Iberian market, the price increase in 2017 is explained by the decrease in generation from hydro-power (-51%) compared to 2016, which led to more fossil fuels in the generation mix that put upward pressure on domestic generation costs. In Italy, the upward price developments in 2017 are partially explained by fewer imports from France due to high DA prices there, which were caused by reduced nuclear availability, as well as a shift in the generation mix. Compared to 2016, in 2017, Italy recorded an increase in the utilisation of natural gas and solar power by 15% and 14%, respectively,

Meanwhile, the EU policy for increasing sustainability and reducing energy dependence on imported sources has created new challenges for the security of electricity supply. On the one hand, the intermittent output of the renewable energy technologies makes trouble for the

overall balancing of the electricity system. On the other hand, some of the existing power plants are reaching the end of their operational lifetimes, some cannot meet the new environmental and emissions standards, while others will be phased out as a result of national energy policy choices (for example phasing out of nuclear energy in Germany).

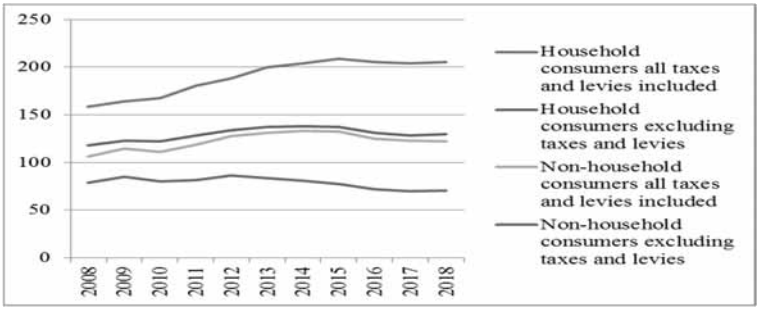
Hence, it has become obvious that the moving to a competitive low carbon economy through increasing renewable energy penetration contributes for price decreasing in spot markets, but it also requires additional investments in the flexible energy system which should supply the market demand fluctuations. All this imposes additional costs for the entire energy sector and a burden on electricity bills of end-consumers.

4.2 Retail price developments

In competitive electricity markets, final prices are expected to reflect costs as wholesale prices should be easily transferred to the retail level at competitive margins. So, the steady decline in wholesale prices with nearly 36% in 2008-2017 period should have been seen in retail markets. In contrast to the price dynamics at wholesale markets, the EU average retail prices have been continuously rising. The average annual growth rate for household consumers was around 3% and for industrial consumers, 1.5%, which have outstripped period's average annual inflation rate (1.2%).

Figure 12

Dynamics of Retail Electricity Prices, 2008-2018 period (EUR/MWh)



Source: Eurostat

In absolute terms, the average prices of electricity including taxes and charges for household consumers in the EU have increased from 158.3 EUR/MWh in 2008 to more than 205 EUR/MWh in 2018. For industrial users, the price rise was not as high: from 106.1 EUR/MWh in 2008 to 121.7 EUR/MWh in 2018. An explanation for this is that the energy-intensive industries might enjoy exemptions from certain energy charges.[11]

It is noteworthy that since 2016 there has been a slight decrease in prices, more pronounced for industrial consumers. Nevertheless, prices remain at higher levels than in 2008. Although

[11] Moreover, industrial consumers often do not participate in the retail, but in the wholesale market.

wholesale electricity prices are more than one third lower than in 2007 and consumers are able to choose from a number of suppliers, the anticipated price decreases did not occur.

Generally, there are many factors that can divert price levels from competitive market (effective) equilibrium: market imperfections, trade barriers, regulated prices, labour regulation measures, asymmetric information alongside fiscal distortions and externalities. (Vrachovska 2014, p. 211) As far as the energy sector is concerned, the price of energy in the EU depends on a range of different supply and demand conditions, including the historic diversity in member states' energy mix, the import diversification, the network costs, the environmental protection costs, the weather conditions or the levels of taxation, the externalities as well as the significant public intervention and the geopolitical situation.

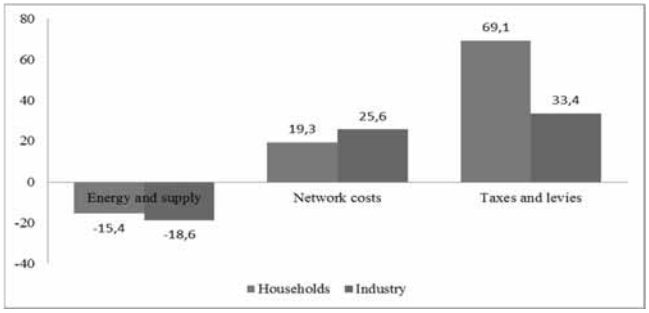
One of the main reasons why the changes in the wholesale prices are not directly transferred to the retail prices is the specific structure of retail electricity prices and the different weight of every price component included in it – 1) energy and supply, 2) network costs, 3) taxes and levies. The energy and supply component is the only one which depends on market competition, while the network costs and the taxes and levies are determined by the regulatory authorities.

Therefore the decisions of the regulatory authorities are crucial for market functioning as they have powers to control end-users prices by determining the taxes present. In this regard, taxes and levies (along with financial support and other incentives) have become the most discussed and commonly used economic instruments within the EU. They are an effective means of internalising external costs and environmentally friendly resource consumption, while also potentially stimulating innovation and structural change (Doneva 2001, p.45).

In particular, taxes and levies on electricity provide revenues to governments for financing general government expenditures, as well as energy investments for the clean energy transition and support for low-income households. However, aiming at minimising the sector's harmful impact on the environment, regulatory actions often stand in contradiction with the electricity market's liberalisation. The state interference in electricity market pricing is able to limit the operation of the market mechanism and thereby reducing the flexibility of market supply and demand.

Figure 13

Average change in electricity price components in the period 2008-2018, (%)



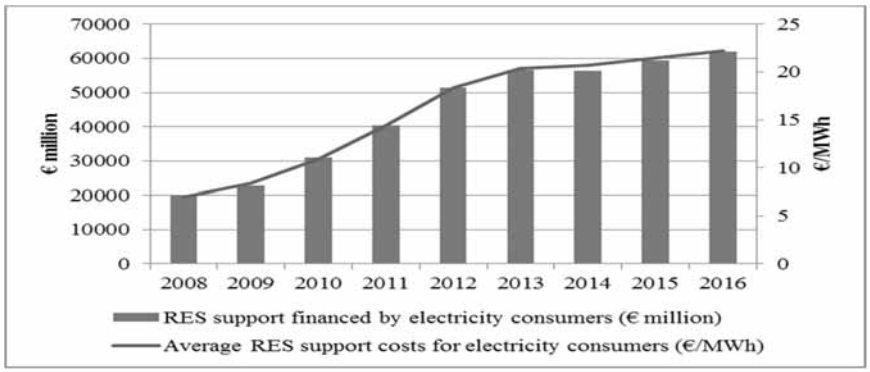
Source: Eurostat

The calculations about the changes in the relative share of the electricity price components for the 2008-2018 period confirm that the main drivers of price increases from 2008 to 2018 were the costs of environmental obligations and network costs. The taxes and levies grew on average by 69% for household consumers and by 33% for industrial consumers.

In the period 2008 and 2016, the amount of subsidies to renewable energy (mainly wind and solar electricity generation) tripled from €25 bn to €76 bn (EC 2019a, p. 211). Out of them, 20 bn euro in 2008 and nearly 62 bn euro in 2016 were financed by the levies on the final prices of electricity users, excluding the subsidies paid by the government or other means (Trinomics 2018, p. 297).

Figure 14

RES support financed by EU end-consumers



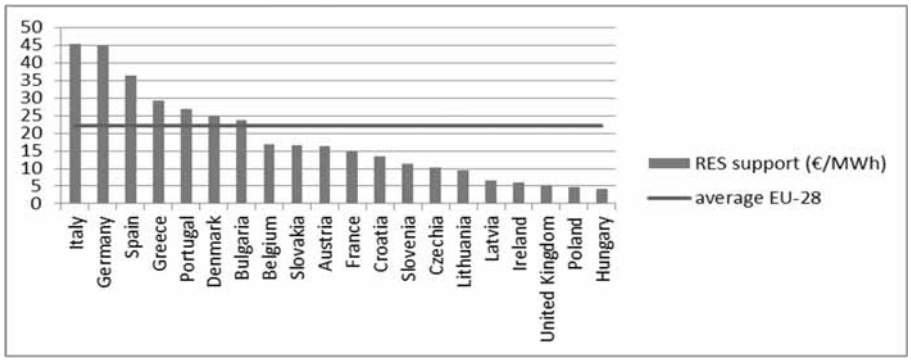
Source Trinomics B.V. (2018) Study on Energy Prices, Costs and Subsidies and their Impact on Industry and Households, p. 297

As the larger part of the cost of subsidies has been financed by the end electricity users, the majority of them experienced increases in energy prices. Over the period 2008 to 2013, the average renewable policy cost burden for final energy consumers in the EU increased threefold, from €7.0/MWh to €20.4/MWh. Since 2014 the increase in levies paid by the average EU electricity consumer has slowed down[12] and in 2016, the financing burden of renewable support was 22 €/MWh. (European Parlianent 2017, p. 36) The burden has hit the most electricity consumers in the countries with the highest levels of subsidies for electricity producers (Germany with €44.8/MWh and Italy with €45.3/MWh in 2016).

[12] The registered slowdown in subsidies increase could be explained by cost reductions as the technologies are deployed at scale and manufacturers gain experience. The cost of electricity from solar fell by almost three-quarters in 2010-2017 period and continues to decline. Wind turbine prices have fallen by around half over a similar period leading to cheaper wind power globally. Onshore wind electricity costs have dropped by almost a quarter since 2010, with average costs of USD 0.06 per kilowatt-hour in 2017 (IRENA 2018, p.14).

Figure 15

Renewable energy sources support (€/MWh)



Source: Trinomics B.V. (2018) Study on Energy Prices, Costs and Subsidies and their Impact on Industry and Householdsp, p. 296

Concerning the support levels for RES generation, they varied widely across countries and different technologies, with values ranging from approximately 3 €/MWh for geothermal in Austria to somewhere between 200 and 300 €/MWh for the strongest supported technologies which still is solar. Generally, the countries with higher penetration of supported renewables have higher RES electricity support per unit of gross electricity produced. In 2016 Germany spent the most on renewable energy support (€27 bn), while the United Kingdom spent the most on fossil fuel support (€12 bn). Germany, Italy, France and Spain spent more on renewable energies than on fossil fuels.

In the EU as a whole, energy subsidies amounted to 1,1% of the Gross Domestic Product (GDP) in 2016. It's noteworthy that as a percentage of GDP Luxembourg spent the lowest share on energy subsidies (0,3%), while Bulgaria spent the most (2,7%) (EC 2019a, p. 215). In addition, across all Member States, the households in Bulgaria and Greece have the largest expenditures on electricity as a share of disposable income (7%), while the households in Luxembourg and the Netherlands the lowest around 2% (Trinomics 2018, p. 214).[13]

In terms of the duration of support, most of the countries grant support from 8 to 15 years. The support in Belgium, Bulgaria, France, Germany, Malta and the UK ranges from 6 to 20-years. Only the Czech Republic, Greece, Hungary, Italy, Portugal and Spain grant support for more than 20 years (CEER 2018b, p. 16).

[13] In accordance with the 2030 EU Energy and climate framework the determined national target of Bulgaria by 2030 is at least 27,09% renewable energy share in gross final energy consumption. (INPEK 2019, p. 63) To achieve the objectives for renewable energy set in INPEK, Bulgaria plans to invest almost 2.4 billion euros for the period 2021-2030 in the development of renewable energy capacities for the production of electricity and heat. About 1,7 billion euros are expected to be invested in the development of solar plants, as well as about 400 million euros in biomass. (INPEK 2019, p. 288)

The significant rise in taxes has increased their relative share in the final electricity price. In 2018 the taxes and levies made up between 28% and 38% of electricity prices amongst the different member states. The VAT's weight in the tax component has declined from 48% in 2008 to 35% in 2018, while that of renewable taxes has more than doubled from 14% to 33% in 2018. As a result, renewable taxes' relative share in the final price of EU household consumers reached 14%. The highest taxes were charged in Denmark, where 64.3% of the final price was made up of taxes and levies (ACER/CEER 2018, p. 6).

So, on the one hand, the additional taxes are a means of raising funds for covering the preferential prices of electricity from RES and cogeneration, but on the other hand, they are a burden on consumers' budgets. This has led to a net increase in electricity costs for most of the final electricity consumers, despite the reductions in wholesale prices.

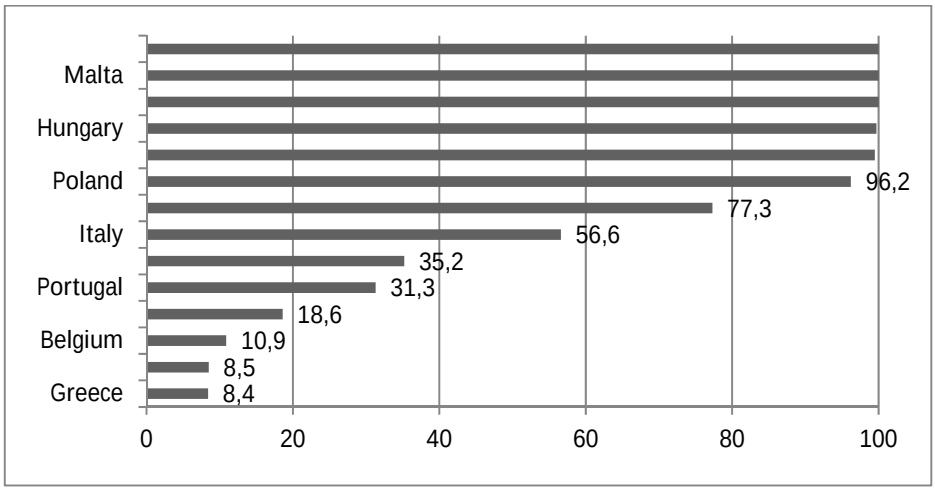
The increase in taxes and additional levies in the retail price is accompanied by a rise in the network charges for households (19%) and industrial consumers (26 %) as well. Due to the progressive increase of the regulated components in the retail price, their average share in the household electricity price has reached 65%. Respectively, the average share of the energy and supply component in the final price has decreased to 35% (ACER/CEER 2018, p. 16). This negative tendency shows that market competition has very little effect on electricity's final price. Therefore the policy for the liberalisation of electricity markets can't ensure competitive prices for consumers as there are multiple other factors that influence electricity pricing.

The average decrease in the energy and supply component (the only component that directly depends on competition between market participants) with 16% for household consumers and 18% for industrial consumers is significantly lower than the changes in wholesale prices over the period (-36%). It indicates the inefficiency of competition in retail markets which can't guarantee the expected reduction in end-user prices.

It should be considered that the transfer of energy and supply component is influenced not only by the degree of competition on the market, but also by the different forms of price regulations. When end-user prices are regulated, (as in 14 member states for household electricity customers and 6 member states for industrial consumers in 2018), it stands to reason that the energy and supply component in retail prices is not too sensitive to changes in wholesale prices. Thereby the policy interventions based on the socio-economic nature of electricity conflict with electricity market deregulation since the price signal from the production are overlaid with different policy signals that determine the attractiveness of different investment options (OECD, 2015, p. 58). Thus all economic agents and entrepreneurs are involved in a complex and dynamic environment (Hristova 2019, p.85). They are under the influence of a lot of micro- and macro-level factors with different intensities, which requires companies to look at the rapidly changing market conditions (Radukanov, 2017, p. 182).

Compared to the total number of households, Poland, Bulgaria and France have a high percentage of households supplied under regulated prices with a percentage between 77% and 97%, whereas in Hungary, Cyprus, Lithuania and Malta 100% of the households are supplied under regulated prices (CEER, 2018a, p. 10).

Figure 16
Percentage of electricity household customers under price intervention, 2018



Source CEER, Monitoring Report on the Performance of European Retail Markets in 2018, 2019

In these countries, the demand for electricity is influenced by the level of regulated prices. If they are set at a low level and don't accurately and completely reflect all costs, this hinders the opening of the market for competition; discourage new entry; stimulate overconsumption of a subsidised service and limit the ability of suppliers to make competitive offers on the wholesale market.

Furthermore the customers who are already on competitively supplied contracts will be urged to switch back to a regulated tariff. In addition, where the price signal is misleading the efficiency of producers is hidden and the cross-subsidisation between the different types of power generators is unclear. As a consequence, the regulatory support measures add to the lack of transparency in the market, which results in inefficient energy choices by consumers and further inefficiencies in the whole energy system.

In a recent study by the ACER (2018) concerning the responsiveness of the energy component of electricity retail prices to changes in the wholesale price and the evolution of the mark-up[14] over the 2008-2017 period, they came to the conclusion that in some countries with regulated prices (Latvia, Romania and Lithuania), average mark-ups were negative because the energy component of the retail prices was set at a level below wholesale electricity costs. These regulated end-user prices are attractive to consumers in the short term; however, such a policy is an obstacle to effective retail competition and the emergence of new market players. In markets with persistent negative mark-ups, market participants do not receive the right price signals, and consumers do not pay the actual cost for the energy they

[14]Mark-up is the percentage or amount added to the cost of a commodity to provide the seller with a profit and to cover overheads and costs.

consume. On the other hand, negative mark-ups may have a negative impact on long-term investments in electricity infrastructure due to the uncertainty of suppliers' return on investments in the long term.

The energy component of retail prices and wholesale prices correlate well only in several competitive markets (electricity markets in Norway, Sweden, and Finland) where final retail prices contain a direct reference to wholesale costs and a mark-up. In addition, a good correlation is observed in certain countries with regulated retail electricity prices, e.g. in Denmark, Hungary and Poland, where retail household prices are set closely to follow changes in wholesale prices (ACER/CEER 2018, p. 27).

As a result of the different national policies and energy mixes, the electricity price structure of individual member states differs strongly between countries. The share of taxes and levies in the retail price in the EU ranges from 68% in Denmark and 54% in Germany to 5% in Malta and 17% in Bulgaria. Taxes for RES and high-efficiency cogeneration vary from 22% in Portugal and Germany to 0-2% in Hungary and Ireland. Large differences in the energy and supply component are also observed. In Malta and Bulgaria, it is 78% and 59% respectively, while in Denmark and Sweden it is only 13% and 23%. There is a big variety in the share of network component too – 51% in Slovakia and 17% in Greece.

On average, the total electricity price for households in Bulgaria has increased from 8,2 cents/kWh to 9,8 cents/kWh in the 2008-2018 period. The energy and supply component has the largest share in it and hasn't changed significantly over the entire period. The main reason for the increase in the total cost of electricity are taxes and levies, which have doubled from 1,4 cents/kWh in 2008 to 2,9 cents/kWh in 2018. So in 2018, taxes and levies accounted for 31% of the total household electricity price (EWRC 2018, p. 6).

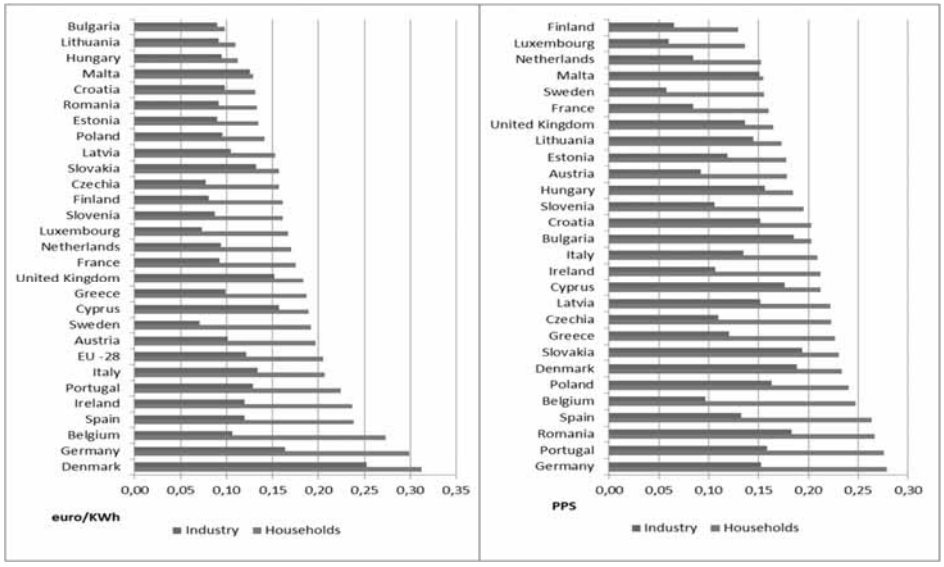
Given the specific characteristics of member states' electricity markets in the first half of 2018, a significant disparity in the final household prices within the EU is observed. The values in the country with highest electricity prices (Denmark, 0,31 euro/KWh) were more than three times as high as in the country with the lowest electricity retail prices for household consumers (Bulgaria, 0,10 euro/KWh).

However, if the comparison is made on the base of purchasing power standard (PPS) prices in order to remove the price level effect, the difference between the highest and lowest price decreases and the ranking of countries changes, especially for the lower-income countries, like Bulgaria. Finland, Luxembourg and Netherlands become the countries with the lowest prices which mean that their households pay a lower percent of their income for electricity while Bulgaria ranks in the 14th place after the retail prices in France, Great Britain, Austria and most of the Central and Eastern Europe countries.

Unlike household electricity prices, there aren't such great differences for industrial users. Considering the price structure on average, the weight of the taxes has increased constantly from 13% in 2008 to 30% in 2018. In the second half of 2018, the highest share of taxes was charged in Germany, where non-recoverable taxes and levies made up 48.5 % of the total price paid by non-household consumers. In seven Member States, there is an increase in the energy and supply component over the period, which confirms the insufficient price competition at the retail market.

Figure 17

Electricity prices for households and industrial consumers by EU member states for the first half of 2018

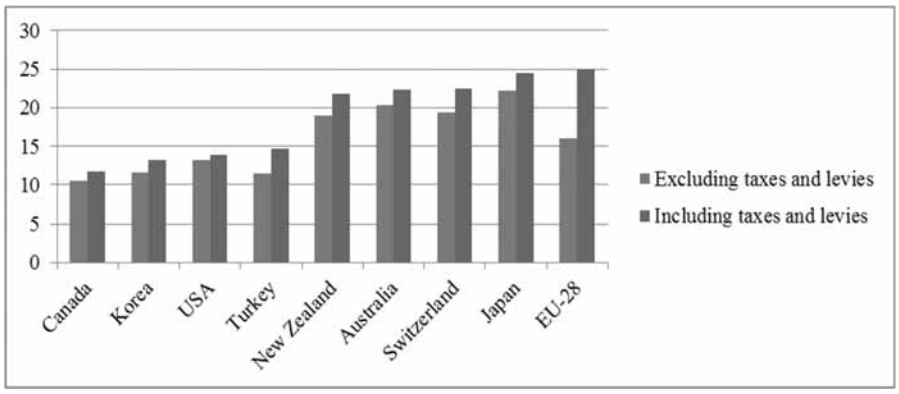


Source: Eurostat

Apart from the above-mentioned differences in electricity prices within the EU, there is also a large divergence between EU household electricity prices and the prices in non-EU member states.

Figure 18

Household Electricity Prices in 2017 (EUR /KWh)



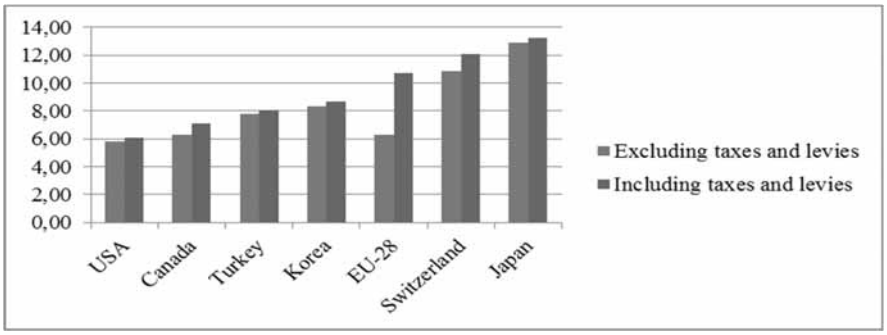
Source: IEA, Energy Prices and Taxes 2017

Household users in Canada, Korea, the USA and Turkey pay significantly less for electricity than EU consumers. Further, it should be noted the low percentage of charges included in the price of electricity in non-EU member states, which confirms that network costs and especially taxes and levies drive prices higher in the EU.

Comparisons at the international level show that the industrial prices in the European Union almost double US levels. The EU industrial power prices also remain higher than the prices in Canada and Turkey but lower than those in Japan and Switzerland. Relatively high non-recoverable taxes and levies in the EU play an important role in this difference.

Figure 19

Industrial Electricity Prices in 2017 (EUR/KWh)



Source: IEA, Energy Prices and Taxes 2017

The high electricity prices have contributed to the increase in the production costs of the EU products and their exporters' prices. Given the concern that European industry should be able to compete in international markets, energy-intensive industries have faced a great challenge. In some countries, the rise in electricity costs for the industry has been over 25% (Italy, Spain and Denmark) (Trinomics, 2018, p. 18). In this regard, the analysis of the factors influencing the company's competitiveness is a subject of serious scientific interest because of their positive effect on the economy. They create benefits not only for the company's owners and employees, but also are key factors for economic growth (Stefanov, 2018, p. 186). The price of electricity as one of the important production factors determines the cost of the final products and their competitiveness with the other products on the market.[15]

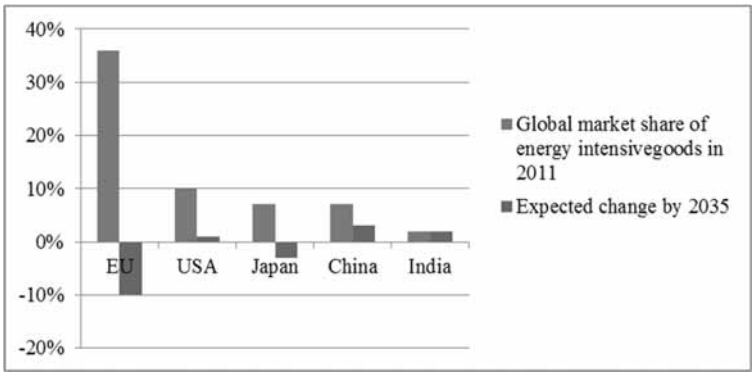
The energy intensity in the EU is usually higher than in Japan and South Korea, comparable to the US and lower than in China and Turkey, although with considerable variation by sector (EC 2019, p. 9). The difference in energy prices and energy intensity is expected to cause a significant decline in the EU industry competitiveness. According to a report of World

[15] In energy intensive sectors the energy share of production costs ranges from 3 to 20 % (manufacturing of cement, lime and plaster, clay building materials, pulp and paper, glass, iron and steel, basic chemicals, non-ferrous metals). Still for a range of energy-intensive industries like aluminium, the costs of electricity can reach up to 40% of the total cost.

Economic Forum the market share of EU energy intensive goods will drop from 36% to 26% over the next 20 years (WEF 2015, p. 10). That will have implications on the whole EU economy as energy-intensive goods account for a big per cent of industrial employment.

Figure 20

Global market share of energy-intensive goods



Source: WEF, The Future of Electricity Attracting investment to build tomorrow's electricity sector, 2015, p. 10

Since the final energy costs of companies are the result of both the price and the consumption, this determines the need for constant efficiency improvements through optimisation of production costs. In general, the saving of material resources should be realised by increasing the level of their performance (Ivanova, 2018, p. 134). Thus, rising energy prices may further encourage the progress for greater energy efficiency, which will mitigate the differences in energy prices and improve company's cost-competitiveness in international competition.

Therefore the low price of electrical energy for the industry is a major comparative advantage that has to be maintained. In the long run, increasing electricity costs could affect the country's specialisation, as is observed in the case of environmental regulations – comparative advantage in industries that use the most pollutant of technologies is reduced, resulting in relocations. Hence it is essential for industry competitiveness the right signals to be sent to economic players as electricity price is a short-term cost and a long-term investment signal.

Conclusion

Over the last 20 years, the EU energy markets have seen a policy and technological development, that have profoundly changed the way they work. Compared to the historical situations, when the industry often was dominated by a single state-owned monopolist, the complexity of the market has increased significantly nowadays. The sector-specific regulation, in particular the liberalisation packages, gave the framework for a gradual opening of national electricity markets to competition. However, the practical implementation of

competitive national markets hasn't turned out to be a fast and fluent process and the theoretically-derived expectations that competition in a liberalised market would lead to lower electricity prices, wider consumer choice and higher competitiveness levels, however, has not been confirmed yet. The possible explanation for this trend is a complex set of factors.

On the first place are the specific nature of the market and the different level of commitment of the Member states to implement the pro-market reform, including the step of national legislation harmonisation. Although competition in both wholesale and retail markets has increased in most of the countries, there are still regulatory and market failures which hinder effective market functioning. The markets continue to be dominated by a small number of players with dominant positions and a high market concentration. The number of customers that effectively moved from regulated to the free market, still remains very low, even though the consumer right to choose an electricity supplier is pointed as a fundamental pillar of the reform,

To ensure the security of supply in periods of peak demand flexible dispatchable power generation capacity (mainly coal and gas) will continue to play a very important role in the market by providing a back-up capacity and energy storage technology for intermittent generation sources.

Examining the impact of electricity market liberalisation on electricity prices and the degree to which consumers benefit from it, highlighted the important issue that the introduction of a wholesale spot market does not necessarily result in lower retail prices. The analysis also shows the increasing share and importance of the nationally regulated retail price components (network charges, levies, taxes) in the final electricity bills.

Additionally, the price divergence at retail markets across the EU emphasises existing drawbacks in EU energy policy. In particular, the EU renewables and decarbonisation agenda, including energy mix changes in favour of wind and solar power have a significant impact on the electricity industry, its costs and final market performance, respectively. The different support schemes for renewable energies have induced major inefficiencies if viewed from a European perspective. The imposed cost of renewables and climate policy obscures the impact of the market opening and market coupling concerning costs and prices. In this regard, the disparity in electricity prices can largely be explained by the fact that EU countries have their unique energy markets and follow their own paths in meeting their energy targets.

The lack of coherence in EU energy and climate policies is another reason for the current market trends. The variety of approaches, applied by member states for promoting energy from renewable sources, has created new challenges for the process of market deregulation and competition. The support measures for emerging technologies run against the policy of market liberalisation and the aim of increasing the competitiveness of the European economy.

The mismatch between the priorities of EU energy policy: competitiveness, sustainability and security of supply requires a fundamental rethinking of the functioning of the electricity sector. The investing in new technologies and the connecting energy markets across the EU is putting European households and industries (who are identified as the main beneficiaries of the reform) at risk of additionally increasing energy costs in the future. The decrease in

the environmental impact leads to an increase of the electricity prices and a decrease in EU competitiveness.

So, we can conclude that although many steps have been made towards the establishment of the internal energy market, further efforts are required in order to EU markets to function more efficiently and treat market participants more fairly. The successful implementation of competitive markets is closely linked to the regulatory process. Reforms in the electricity sector have significant potential benefits, but at the same time carry the risk of significant costs if they are implemented incompletely or incorrectly,

The challenge for policy-makers is to find the appropriate mix of instruments to manage the sector transition and finalise the process of the fully opening of national energy markets as well as the completing of the EU internal energy market. A way to deal with such a situation is to take certain proactive measures for identifying all types of risk that can turn into undesirable results (Tsanevska 2017, p. 135), otherwise many of the benefits of an Internal Energy Market will be lost and costs for consumers will continue to increase. With this regard, a main challenge is to find the intersection between the economy and the environment (Byanov, 2019, p. 151). It could be achieved through further regulatory improvements that ensure a better coordination and coherence between EU energy and climate policies and priorities. The right market design should also be in place to undertake the multiple tasks ahead and reduce the cost of the energy transition for consumers by enhancing the security of supply through common rules and closer integration of national electricity markets.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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THEORETICAL FOUNDATIONS OF STAKEHOLDER THEORY

The article seeks to answer the question: on what foundations is the theory of stakeholders built. The contributions and achievements of economic, political and legal theories and concepts used in this theory, such as strategic management, systems analysis, motivational theories, industrial relations, etc. are revealed. The active implication of stakeholder theory in various recent policy initiatives might shed light on a new road for the development of corporations and society.
JEL: G3; M2

Introduction

Stakeholder theory has appeared in the mid-1980s. It builds on the recognition of the role of stakeholders in the development of the corporation. Unlike other theories, stakeholder theory is interested in what happens not only in the principal-agent relationship, but also outside it, which includes other stakeholders such as personnel, customers, banks, suppliers, the state, local authorities, trade unions and others. Thus, new participants appear in corporate governance, whose place and importance have not been previously taken into considerations.

Having more participants means increasing and complicating the problems that corporate governance has to solve. Problems arise with the management of conflicts between stakeholders, which are much more and multi-layered than the principal-agent or principal-principal dichotomy (Nedelchev, 2017). The identification of stakeholders and their interests, the development of strategies to attract or neutralise them in the implementation of reforms and large-scale restructuring of corporations that affect many stakeholders are becoming extremely important.

All these problems and tasks are being intensively developed and this theory is increasingly used not only in terms of corporate social responsibility practices, but also in overall corporate governance. According to a study by M. Nedelchev, stakeholder theory ranks second in popularity among the Top 10 theories of corporate governance according to the number of appearances, citations and authors (Nedelchev, 2018).

One of the important proofs of this is the creation of recommendations and the increasing consideration of the role of stakeholders in the principles and codes of corporate governance. This is an important recognition and incentive to continue research and efforts towards

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further development and enrichment of the stakeholder theory. One of the trends that can be deduced is that the stakeholder theory is beginning to become an umbrella that covers the other theoretical areas of corporate governance (Solomon, 2010).

Despite, and probably due to, its dynamic development, stakeholder theory focuses on three topics: protecting one's right to exist; research of the practice of corporate governance in relation to the stakeholders and development of policy recommendations how to deal with them. Outside these topics remains the problem of theoretical foundations of this theory, the disclosure of which would facilitate the process of strengthening its identity and would dynamise its future development. This study deals with solving this problem.

Stakeholder theory background

The theory uses contributions and resources from other social, economic, political and legal theories and concepts. Most significant of them are:

- New concept of corporation;
- Motivation theories;
- Systems theory;
- Strategic management;
- Industrial relations;
- Legal and political theories;

Next, we will present in short the resources and contributions of these theories, concepts and practices, on which the stakeholder theory is built upon. At the end, we will systematise the contributions of the outlined theories, concepts and practices to the development of the stakeholder theory.

New concept of corporation

The initial dominating and lastingly spread view of the concept of a corporation has been as a set of relations between shareholders (owners, principal) and managers (agent). Assigning the management of the corporations to hired managers outside the circle of owners (most often family) creates contradictory interests between both sides (Solomon, 2010). The managers' main interests are in increasing their remuneration, raising their public status and privileges, ensuring stable protection of their positions. Unlike them, shareholders have interests in increasing their profit from the investments made in the corporations. That is why it was considered that the main goal of the managers and the whole corporation was increasing the shareholder value (Friedman, 1970). The most important mean for this was achieving high profit and its capitalisation, which leads to raising the price of the corporation shares.

Still, in the dawn of the contemporary economic theory, Adam Smith has stated that managers without ownership in the enterprise are less concerned about it than owners (Smith, 1983). Later, A. Berle and G. Means state that ownership in the American corporations is strongly spread and there are no effective mechanisms of control over the work of the managers (Berle and Means, 1932). For many years, the corporate governance theory deals with developing the means of motivating and controlling the managers as well as coordinating the interests of owners and managers.

This concept of the corporation has long been under criticism. Yet in 1958, P. Drucker states, "maximisation of short-term or long-term profit is definitely a wrong concept" (Drucker, 1958). Many years pass until 1996, when R. Rajan and L. Zingales present a new concept of the corporation, different from the existing one until then (Rajan and Zingales, 1996). According to them, the corporation is a nexus of specific investments: a combination of mutually specialised assets and people. The contribution of this definition is that it focuses on the fact that the corporation is a much more complex structure, which cannot be easily reproduced.

This definition allows outlining the interests of all sides, specialised in the corporation and its products – employees, suppliers, consumers, etc. These sides form a group of a non-ownership layer with strong positions in the distribution of resources and with substantial influence on the economic results of the corporation. With the shareholders, this group forms the category of stakeholders.

The group of stakeholders is comparatively constant. Generally, it includes the employees of the corporation, suppliers, consumers, creditors, government and local authorities, trade unions, environmental organisations and other NGOs depending on the specific of the corporation. Different stakeholders play special roles and have their own behaviour and interests, and the modern managers have to conform to them (Robson, 1996).

Motivation theories

A certain contribution of the motivation theories is a source of development of the stakeholder theory. E. Mayo sets the base, and together with M. P. Follett, O. Sheldon and R. Owen creates the human relations school. Mayo's experiments in 1927-1932, known as Hawthorne experiments, show that employees as social beings are sensitive to motivation, which influences on their productivity (Mayo, 1933).

D. McGregor and W. Ouchi contribute with their theories X, Y and Z. Based on monitoring American companies, McGregor formulates the X and Y theories (McGregor, 1960). According to theory, X employees prefer to be directed. They avoid responsibility, have small ambitions and strive for safe work. They do not love their work and try to avoid it at every possible time. That is why the personnel should be strongly supervised and should work under the threat of punishments, in order to achieve the goals of the organisation, set by the management.

Theory Y gives a totally different view on the behaviour and motivation of employees. It states that they consider their work as something completely habitual, they want to participate

in decision-making, they accept and usually seek for taking responsibility. The supervision of their work and the threat of punishments do not substantially influence on the employees for achieving the organisation's goals. The empathy of the employees to the goals of the organisation concerns the payments based on their achievements. The intellectual potential of the ordinary people is poorly used, but there is such in most employees.

Studying the work methods of the Japanese firms functioning in the USA, later Ouchi creates theory Z (Ouchi, 1981). It derives from the specific of the Japanese management model and long-term or life-long hiring of personnel and on the Japanese system of human resources management. In this way, human resources for a complex and specific production are created, where employees' skills improve with increasing their production experience. The specific feature of this model is the slow career advancement in the organisation's hierarchy, based on the evaluation of the work qualities of the personnel. There is a dynamics in the employees' movement from one production unit to another, which allows the development of natural coordination between different stages of the process of design, production and realisation of the goods. According to Ouchi, these specifics of the Japanese model make local firms more productive than their American competitors, even when they use foreign human resources, like American employees.

Systems theory

The systems theory considers the enterprise as a complex and separate system, which makes contacts with the external environment. The external environment can create favourable or unfavourable conditions for the development of the system and achievement of its goals. Moreover, setting goals to a system strongly depends on the state of the external environment. It consists of external stakeholders. It is one or another state, depending on the interests and power ratio of these stakeholders. The possible changes of the external environment make an impact on the very stakeholders, which theoretically are developed by the systems theory. That is how the stakeholder theory uses the main formulations from the systems theory.

According to the systems theory, a system consists of elements, which interact between each other for achieving a common goal. The efficiency of the system depends on the quality of interaction between the elements. Also, extremely important is to use the potential of each element in the system. The definition of stakeholders is built on this view.

Other important formulations of the systems theory, like the principle of direct and reverse connection, synergy effect, sustainability and adaptivity of the systems, regulating and self-regulating of the systems, are entirely applied by the stakeholder theory and contribute a lot to its development (Bertalanffy, 1969).

Strategic management

Regarding the essence of the enterprise, F. Adams is the first to attempt to view outside the frame "shareholders – managers". In 1954 he developed the thesis that the firm should "maintain a fair and efficient balance between the requirements of the different direct stakeholders – shareholders, employees, clients and public" (Adams, 1954).

Later R. Ackoff in his book *"Planning the future of corporation"* develops the idea of participatory planning (Ackoff, 1981). He considers its planning with the participation of all employees, and according to the dynamic changes of the external environment. The participatory planning process runs in ascending direction. All employees participate in the planning in the unit they are permanently employed. At the next higher level of planning, there are committees, which generalise and move up the suggested ideas to another higher unit in the hierarchy. The managers of the relevant units participate in the committees. Participatory planning is organised in a hierarchy, so the highest level of corporation management generalises the made suggestions and coordinates the goals and tasks with its shareholders. To a certain extent, this idea of Ackoff is spread in the practice of different corporations. Such example is the self-management, which R. Semler applies in the company "Semco", which he manages in Brasil (Semler, 2011).

R. Freeman, considered the father of the stakeholder theory, in his book *"Strategic Management: A stakeholder approach"* (Freeman, 1984), as well as in many later publications, confirms the thesis that managers are responsible not only to their shareholders, but also to the stakeholders of the corporations, because they contribute to and are affected by the direction of corporation's development. In this way, Freeman expands the task of the managers, which until then has been formulated as increasing the shareholder value.

Later the development of the stakeholders' problems is examined in many works on strategic planning and management. This gives a wider and fuller view on the corporation not only as an economic but also as a social phenomenon, which allows its precise positioning in the preparation and execution of strategic plans and projects. The interaction between the corporation and its public environment is considered and reasoned through approaching it as a "corporate social responsibility" institution. Its successes and failures affect not only the shareholders, but to a substantial degree, many stakeholders and the whole society. The corporation not only creates material products and achieves financial results, but also is responsible for protecting the environment, maintaining or creating part of the technical infrastructure of the settlement it uses, it holds certain engagements concerning education, personnel qualification, etc.

Shareholders are one of the most important stakeholders, interested in the development of the corporation. On the other hand, the development of the corporation is due not only to its capital, management skills and efforts of the managers. Without ensuring an optimal capital structure, without establishing mutually beneficial trade relations with suppliers and consumers of the corporation's production, without creating normal working conditions and career perspective of the human capital, with lack of dialogue and understanding between managers and national and local political leaders, no corporation can achieve sustainable economic development and success. This is the reason why the modern large corporations should use the concept of stakeholders when developing vision, values, mission, corporate governance code, ethic principles and other strategic documents. Their focus should be redirected from work in favour of the more narrow economic interests of the shareholders to satisfying the needs of the consumers, keeping the environment clean, developing the public relations, supporting the SMEs, cooperating with the local communities, supporting the local development and other aspects.

Industrial relation theory

Modernising the industrial relations goes through taking into consideration interests, especially those of the personnel in the enterprises. Part of the stakeholder theory deals with the personnel as a main stakeholder in the corporation. M. Blair (Blair, 1995) is one of the founding researchers in this field. In her works, she states that "agreements for managing the relations between employees and between the personnel and the firm cannot be considered separate from the corporate governance anymore" (Blair, 1999). The new understanding of the corporation, presented above, and the concept of stakeholders, contribute to the revaluating and reformulating of the main problem of the corporate governance.

The pre-history of the corporate governance has a concurrence between ownership and management, since the manager of the enterprise then was its (co)owner and in most cases a representative of the family owning the enterprise (Leeson, 2012). Corporate governance emerges based on the division between these two key figures, when the owner of the enterprise hires an external manager to manage it.

With the concept of stakeholders, and taking into consideration the forms and schemes of financial participation of managers and employees, a new situation in the corporate governance theory appears. Managers are in the position of both owner and manager of the corporation. For employees, there is a match between the roles of staff and owner. On this basis, a new type of corporation appears, with special relations between owners and managers, different from before. This stage in the development of the corporate governance can be specified as integration between ownership and management. It puts the problems in a new way, and requires a reformulation of the main questions and tasks of the corporate governance theory.

Legal and political theories

In the legal theory and practice, there is a statement that with their decisions, the managers are responsible not only to their shareholders but also to the entire company. If we use legal terms, it is a matter of so-called fiduciary duties of the managers. Such a norm exists everywhere in the specialised legislation. For example, art. 116b of the Bulgarian Public Offering of Securities Act (POSA, 1999) states that managers should observe their duties with the care of a good trader in a way, which they reasonably think will be in the interest of all shareholders of the company, and should be loyal to the entire company. Such a formulation also exists in the 1999 OECD principles (OECD, 1999). In 2004 they were amended. According to the amendment, the corporate board should follow high moral standards and should take into consideration the interests of all stakeholders (OECD, 2004). In 2015 version of the principles is set that board members should act on a fully informed basis, in good faith, with due diligence and care, and in the best interest of the company and the shareholders (OECD, 2015).

Much earlier than the economic theory, the political theories consider the stakes of the stakeholders (Brinkerhoff and Crosby, 2001). They are on the basis of the politics as an art for achieving trade-offs and making decisions, which concern different, often mutually contradictory, interests in the society.

The discussed contributions systematised at Table 1 present strong foundations for the establishment of the stakeholders' theory.

Table 2

Systematisation of the contributions of theories, concepts and practices to the development of the stakeholder theory

Theory and concept	Contribution
New concept of corporation	• Corporation as a spiral of specific institutions • Outlining the interests of the stakeholders in the development of the corporation
Motivation theories	• Theory X – personnel wants to participate in decision making and strives to take responsibility • Theory Y – the system of life-long hiring creates conditions for a complex specific production
Systems theory	• Enterprise as a separate system interacts with the external environment • Principle of direct and reverse connection • Synergy effect • Sustainability and adaptivity of the systems • Regulating and self-regulating of the systems
Strategic corporate governance	• Acknowledging the contribution of the stakeholders in achieving the goals of the enterprise • Concept of participatory planning • Managers should strive to increase the profit of the stakeholders • Enterprise as a corporate social responsibility organisation
Industrial relations concept	• Industrial relations become part of the corporate governance • Integration between ownership and management changes the main question of the corporate governance
Political theories	• Work and attracting the stakeholders for achieving compromises and making complex decisions
Legal theories	• Principle of fiduciary responsibility of the managers

Source: Created by the author.

Criticism of the stakeholder theory

Since its creation, the stakeholder theory is accompanied by constant criticism, objections and rejections of its main postulates. M. Friedman with his followers does not accept the existence of the stakeholder theory with the classic argument that the only social responsibility of the enterprise is to maximise the profit of its shareholders (Friedman, 1970). According to him, any other responsibility taken by the enterprise leads to its deviation from the right development trajectory. M. Friedman with his followers does not study and does not answer to the questions whether some firms externalise their expenditures, and if taking a social responsibility can lead to increasing the profit of the shareholders, as is the position of his opponents.

In many publications, El. Steinberg (Steinberg, 1999; Steinberg, 2000) criticises the stakeholder theory. Actually, she acknowledges two meanings of the term "stakeholder" – as significant in regards to the motivation it creates for an organisation, and in regards to the external environment and the necessity for management decisions to conform to its changes.

According to her, the third meaning of the term "stakeholder" is problematic. It concerns the reports and responsibility of the enterprise to these stakeholders and the necessity to balance the competing interests.

The thesis El. Steinberg develops outlines 5 problems of this theory – it is incompatible with the business goals and it is not working; it is incompatible with the corporate governance and the requirements for reports and responsibility; it is not proven; it undermines the bases of private property, agents and wealth. In conclusion, she suggests a new concept, called "Just Business", which main principle is that the social responsibility is not a responsibility *for* the stakeholders but a responsibility *of* the stakeholders (Steinberg, 1999).

Without discussing in details the arguments of El. Steinberg, it is necessary to mention that her theory is inconsistent. She acknowledges the role of the internal stakeholders and to some extent, the significance of the external stakeholders about forming the external environment of the enterprise. In her arguments, she uses incorrect and extreme cases and situations, which have nothing to do with the stakeholder theory. For instance, according to her, terrorists are also part of the stakeholders of a certain enterprise, since they can have interests in the results of the enterprise, as well as in failing its established supply chain, i.e. they can influence its resources.

M. Jensen repeats some of the arguments of El. Steinberg, but he develops new arguments against the stakeholder theory (Jensen, 2001). His arguments derive on the theory of firm, according to which the firm cannot maximise more than one goal. According to him, the economic theory in the last 200 years has explicitly reached the conclusion that the social welfare is maximised in conditions of missing externalities and monopolies, only when each firm maximises its market value. M. Jensen, like El. Steinberg, thinks that the stakeholder theory makes the managers irresponsible to the shareholders.

However, M. Jensen admits that the firm cannot maximise its value, if it does not take into consideration the interests of the stakeholders. According to him, the enlightened value maximisation is acknowledged as a goal of the non-traditional, or as he calls it enlightened stakeholder theory (Jensen, 2001).

These statements of M. Jensen start a new stage in the development of the stakeholder theory. The works of the followers of this theory closely conform to his statements and further develop the theory according to them.

Attempting to overcome the criticism to the stakeholder theory, R. Freeman creates an interesting thesis, namely that his different opponents actually have common and close views to the statements of the stakeholder theory (Freeman et al, 2010). According to him the differences and criticism are due to not knowing the main statements of this theory.

Typology of stakeholders

Definition and content

The key to defining the content of the term stakeholder should be the main element of the word – "stake". Most often it is considered as interest. In the literature, there is also a wider meaning of the term "stake". According to Caroll and Buchholtz, the term consists of three categories: interest, right and ownership (Caroll and Buchholtz, 1999).

There is an interest when a physical person or a group of people can be affected by a certain decision of the firm. Then these persons can have an interest in this decision. An example of such interest is when an enterprise decides to allocate its production to other parts of the country or the world. Obviously, this decision will affect all employees in the enterprise, their families, the local community, local clients, suppliers, etc.

The right, as an element of the term "stake", can be legal and moral. There is legal right when a physical person or a group of people have a right by law to be treated in a certain way or have certain legal protections. Such examples are when the creditors have certain legal rights to cash their claims in case of bankruptcy of an enterprise. A similar right is the protection from the dismissal of certain groups of personnel of the enterprise.

There is a moral right when a physical person or a group of people consider that they have informal right to be treated in a certain way or have a certain right, regulated by unwritten but applied moral norms and principles of the business and society. There are such examples in recruiting personnel or promoting personnel by merits, as well as many acts of decency and honesty in making business deals.

Ownership as a manifestation of interest exists when a physical person or a group of people have a legal right of ownership over certain assets or property of the enterprise. Such example is the possession of shares or stakes of an enterprise, or when there are contracts and trade interrelations with it.

One of the first definitions of stakeholders in 1984 states that these are groups, without which support the organisation will seize to exist (Freeman, 1984). These groups include shareholders, personnel, clients, creditors and society. Later this definition evolves in the following way: "…stakeholders are those groups, which have stakes to the firm" (Evan and Freeman, 2001). It is noticeable that stakeholders do not include managers, which P. Freeman considers a part of the corporation itself. However, most researchers consider the managers as stakeholders, since they regard them as another type of hired personnel.

A stakeholder is a physical person or group with stakes and relations to the activity of the enterprise, its resources and results. The stakeholders can be affected by actions, decisions, policies or projects of the enterprise. The opposite is also valid – these stakeholders can influence the actions, policies or projects of the enterprise. Therefore, there is a possible interaction with the stakeholders in both directions or exchange of influence. In a word, a stakeholder can be considered as "every physical person or group with the ability to influence or be influenced by the actions, decisions, policies, practices or prices of the organisation" (Evan and Freeman, 2001).

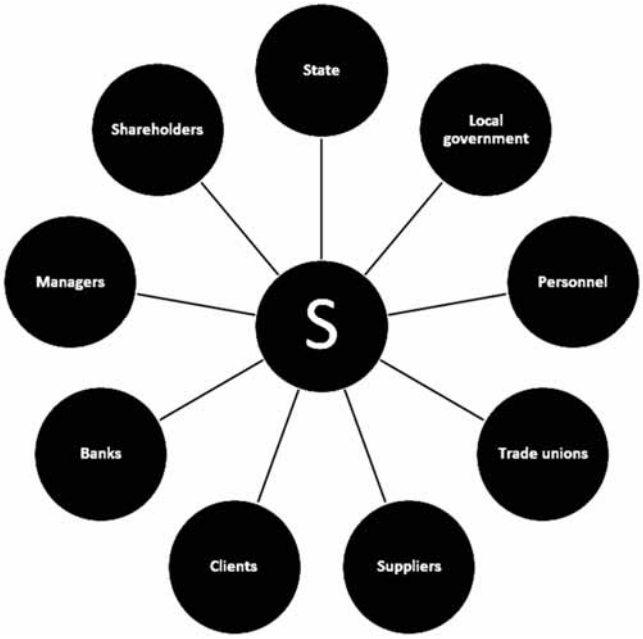
In summary, we can conclude that stakeholders are people or group of people inside or outside the corporation with stakes to the resources, projects, products of the corporation, affected by the results of its activity, or on which the performance of the corporation depends.

Following the specifics of this definition, we can determine the main groups of stakeholders in the corporation (Exhibit). They are shareholders, managers, personnel, trade unions, creditors, suppliers and clients, local authorities and state. It is important to note that the mentioned stakeholders are generic terms. In real life, they have quite a concrete face. Their concrete determining is a task for the stakeholder analysis.

The mentioned circle of stakeholders is not complete. In some cases, like in the "natural" monopolies, there can be state or municipal regulators. Such example is the regulators of the energy and water sector.

Exhibit 1

Key stakeholders in a corporation



S - Stakeholders

Source: Created by the author.

When determining the circle of stakeholder, there is also a wider approach. It examines and reveals the relations between certain quite wide social and even unsocial groups and the activity of the enterprises. For example, some authors consider the whole society and all citizens as stakeholders, since they have financed the creation of the public infrastructure, which the enterprises use. Other researchers include as stakeholders also the environment,

the future generations, and even non-human types (see further the classification of D. Wheeler and M. Sillanpää). This is a too wide definition of the term and shows the theoretical overexertion by these researchers. Really, the activity of an enterprise can have many side effects and can create externals. The stakeholders should be able to identify their stakes, to be publicly acknowledged in the society, as well as to be able to claim their stakes in some way. Obviously, there is no way for the birds or crocodiles to participate in this social exercise. The problems of their habitats, influenced by the economic activity of the people, can be represented by different environmental groups, but not directly by themselves and their similar species. In a similar way, the disenfranchised slaves cannot be considered stakeholders, because they did not have a social status. They can acquire such status, for instance, if they get organised, create an army and raise a rebellion against their masters, or in some other way.

Types of stakeholders

In the economic literature, there are many classifications of stakeholders by various criteria. We will analyse the most popular ones.

Most spread classification of stakeholders is their dividing into internal and external ones. Internal stakeholders are personnel, shareholders, managers and unions. External stakeholders are suppliers, clients, local communities, banks, etc.

Directly from the definition of stakeholders follows their classification to individual and institutional ones (Kostyuk et al., 2007). Individual stakeholders are employees, individual shareholders, consumers, etc. Institutional stakeholders have an organisation representation. Such are banks, institutional investors (pension funds, mutual funds, etc.), as well as local authorities, media, etc. Specific of this classification is that certain groups of stakeholders can be represented individually, as well as institutionally. For example, employees by their specifics are an individual stakeholder, but if they participate in a union organisation, the latter becomes their institutional representative. Similar is the situation with the organisations for consumers' protection. In this way, some groups of stakeholders can be bilaterally represented – directly as individual stakeholders and indirectly as institutional ones.

Another classification divides the stakeholders to directly and indirectly interested. The first group includes shareholders, managers, clients, suppliers, creditors and employees. The second group consists of regulators, competitors and citizens (Georgiev, 2012). Direct stakeholders influence directly on the functioning of the enterprise, while the indirect stakeholders have more side, indirect impact on the performance of the enterprise.

Stakeholders are also divided by their contribution to the capital of the enterprise (Bakardjieva, 2009). Some of them have a material (financial or non-financial) contribution to the capital of the enterprise (like shareholders and creditors), while other stakeholders usually have no such contribution (like managers, employees, suppliers, clients, local authorities, etc.).

D. Wheeler and M. Sillanpää (Wheeler and Sillanpää, 1997) present another interesting approach to a classification of the stakeholders. They use two antonyms, like main and

secondary, social and non-social, and divide the stakeholder. According to them, the main social stakeholders are:

- Shareholders and investors;
- Employees and managers;
- Clients;
- Local communities;
- Suppliers and other business partners.

Secondary social stakeholders are:

- Government and regulators;
- Civil institutions;
- Social groups;
- Media and academic commentators;
- Trade organs;
- Competitors.

As per some researchers, the main social stakeholders have direct interest and participation in the enterprise and its success, and therefore exert influence. The secondary social stakeholders can also be extremely influential, particularly having an effect on the reputation and acceptance by the society, but their share in the company is rather representative and indirect, unlike the direct stakeholders. That is why the level of reporting to the secondary stakeholders shows a trend towards decrease.

Main non-social stakeholders are:

- Environment;
- Future generations;
- Non-human species.

Secondary non-social stakeholders are:

- Environmental pressure groups;
- Organisations for animal protection.

Managing the stakes of the stakeholders

Some authors focus on the balance, even on "fair" balance between the interests of the stakeholders (Georgiev, 2012). This approach is built on the understanding that the enterprise works in favour of all stakeholders, and that they are equally important or have a decisive influence on the performance of the enterprise. It develops different schemes and

mechanisms for balancing these interests. Of course, no one denies this necessity, and it is completely logical to develop and apply mechanisms for coordinating the interests of the different stakeholders. However, to balance interests, which sometimes can be very conflicting ones, is a science fiction (Dimitrov et al., 2014).

The weakness of the approach of balancing the stakeholders' interests comes from the two statements it is based on. The first statement concerns the understanding of the corporation as an instrument for increasing the benefit of the stakeholders, specific of the initial period in the development of the stakeholder theory. The second statement, namely that all stakeholders are equally important to the enterprise, is also rejected by theory and practice. Thanks to the efforts to distinguish the types of stakeholders, it is determined that they have different potential, direction, power and influence on the enterprise, they can cause different consequences to the enterprise, so the different stakeholders should be treated with special approaches and methods. In this connection, R. Freeman states: "All (stakeholders) are not equally significant at all time, but they have equal rights to protect their interests" (Freeman et al., 2010).

In the literature, there are many studies and understandings of the main stakes of the stakeholders. We will discuss the most studied and used three stakes, specific of the different stakeholders.

Managers most often outline high payment, acquiring ownership in the enterprise, and additional management package (business car, secretary, big office, business trips abroad, etc.).

It is considered that employees strive to receive high payment, participation in ownership, financial results and management, as well as career development.

Unions usually have stakes to improve the labour conditions, receive social benefits by the personnel, and keep its employment.

Clients of the enterprise strive to achieve acceptable prices, high quality of their purchases, and convenient and quality service of the purchased goods.

Suppliers typically want stable and long supplies, timely payments of the supplied goods, and a large series of orders by the services enterprises.

Municipality, where the management and production of the enterprise operates, is interested in opening new working places, financing municipality initiatives, and meeting the environment requirements by all economic subjects.

Banks want their clients to regularly service their debts, to provide a high quality of service, and if possible to give risk-free credits.

Shareholders of the company strive to receive high dividends, as well as a high price of the shares, and long-term stable development of the enterprise.

Besides the need for the stakes of the stakeholders to be identified theoretically, they should be concretely analysed, which would give the opportunity to manage them. For this, an approach is developed, with which the stakeholders are positioned by their potential for threat and cooperation with the company (Exhibit 2).

Exhibit 2

Matrix of types of stakeholders and the strategies towards them

Stakeholder's potential for Cooperation with Organization	Stakeholder's Potential for Threat to Organization: High	Stakeholder's Potential for Threat to Organization: Low
High	**Stakeholder Type 4** ***Mixed Blessing*** *Strategy:* Collaborate	**Stakeholder Type 1** ***Supportive*** *Strategy:* Involve
Low	**Stakeholder Type 3** ***Nonsupportive*** *Strategy:* Defend	**Stakeholder Type 2** ***Marginal*** *Strategy:* Monitor

Source: Caroll and Buchholtz (1999).

The exhibit presents four types of stakeholders and corresponding strategies for managing their stakes. The first quadrant outlines stakeholders with high potential for cooperation and low potential for threat. They are defined as supportive, and the strategy towards them targets their involvement. For example, if analysis outlines the personnel as such type of stakeholder, the strategy towards it should be more active participation and involvement in the management and initiatives of the corporations.

The second quadrant introduces the stakeholders with low potential for cooperation and threat. They are the so-called marginal stakeholders and the strategy towards them is monitoring their reactions. This strategy is necessary for tracing their movement and their eventual transferring to another quadrant, if accepting and using another strategy will be needed.

The third quadrant presents stakeholders with high potential for threat and low potential for cooperation. They are considered as non-supportive and the strategy towards them is defensive. Defensive strategy is the most passive one, but since they are incapable of cooperation in any way with the enterprise, there is no other choice of impact with them. In this position can be the regulatory bodies with big rights to determine prices and other extremely important economic conditions of certain sectors and enterprises.

The fourth quadrant outlines the stakeholders with a high potential for cooperation and threat. That is why metaphorically they are called a "double-edged sword". A suitable strategy towards them is cooperation, thus trying to neutralise the threat.

With the presented approach, the stakeholders can be divided into strategic and non-strategic (secondary) ones. Strategic are the ones of vital significance to the company and to certain threats and opportunities it will face at a certain moment. Such stakeholders are the ones in the first, third and fourth quadrant. Non-strategic stakeholders are the ones determining the situation, part of the external environment, but not the strategy of the company. The stakeholders in the second quadrant are in this group.

Policy implication of stakeholder theory

Very soon after its creation, the concept of the stakeholders' participation in the corporate governance finds its place in the main policy documents for imposing and developing the corporate governance (Keremidchiev, 2017). Here we will pay attention to policy initiatives about the promotion of the stakeholder approach at whole. Actions that refer only to one or a limited number of stakeholders like employees (Keremidchiev and Ileva-Naidenova, 2012) will not be considered.

In the first edition of OECD principles of corporate governance in 1999 (OECD, 1999), stakeholders are mentioned five times at different places in the text on different occasions. In the second version of OECD principles of corporate governance (OECD, 2004) there is already a special chapter on the role of stakeholders in the corporate governance, with six formulated principles in it. The same number of principles on the role of stakeholders collected in one special chapter exists in the third edition of this publication (OECD/G20, 2015).

A special comparative table shows the evolution of the views on the role of stakeholders in the corporate governance (Table 3). The comparison of the three versions shows a substantial improvement and precision of the place and role of the stakeholders in the corporate governance in the second and third versions of the Principles. For example, the 2004 version states the obligation of informing the stakeholders on their participation in the corporate governance process, and they should receive not only relevant but also accessible information periodically. In the last version of Principles, this statement is better formulated.

An important improvement is made in the 2015 version of Principles regarding the right of stakeholders to communicate directly with the Board of Directors regarding their cares, illegal or unethical practices. This principle is supplemented by a text, giving an option to stakeholders to refer also to the competent public authorities and the defence of this right.

Another contribution of the last two versions of Principles is the encouragement for the establishment of mechanisms for employee participation in the corporate governance, instead of all stakeholders.

Table 3

Comparative table of OECD principles of corporate governance between 1999 and 2015 regarding stakeholders

OECD principles of corporate governance in 1999	OECD principles of corporate governance in 2004	OECD principles of corporate governance in 2015
Governing bodies should ensure observing the applicable law and counting the interests of the stakeholders.	The rights of stakeholders, which are legally regulated, should be observed.	The rights of stakeholders that are established by law or through mutual agreements are to be respected.
If the stakeholders' interests are protected by law, they should receive effective compensation in case of breaking their rights.	When the rights of stakeholders are protected by laws, they should be able to receive equal compensations in case of breaking their rights.	Where stakeholder interests are protected by law, stakeholders should have the opportunity to obtain effective redress for violation of their rights.
If stakeholders participate in the corporate governance process, they should have access to the relevant information.	When stakeholders participate in the corporate governance process, they should have access to relevant and accessible information, received periodically.	Mechanisms for employee participation should be permitted to develop.
Corporate governance should allow the functioning of a mechanism stimulating the participation of stakeholders.	Introduction of stimulating mechanisms for employee participation in corporate governance should be allowed.	Where stakeholders participate in the corporate governance process, they should have access to relevant, sufficient and reliable information on a timely and regular basis.
The announcement should include, without limiting to, the following significant information: … Substantial issues regarding employees and other stakeholders…	Stakeholders should be able to communicate with the Board of Directors regarding their cares, illegal or unethical practices.	Stakeholders, including individual employees and their representative bodies, should be able to freely communicate their concerns about illegal or unethical practices to the board and to the competent public authorities and their rights should not be compromised for doing this.
	The corporate governance frame should be accompanied by effective procedures of bankruptcy and adequate protection of the rights of the creditors.	The corporate governance framework should be complemented by an effective, efficient insolvency framework and by effective enforcement of creditor rights.

Source: Created by the author based on OECD. (1999). OECD Principles of Corporate Governance; OECD. (2004). OECD Principles of Corporate Governance; and OECD. (2015). OECD Principles of Corporate Governance.

In 2005 OECD published guidelines for developing the corporate governance in state-owned enterprises. The fourth chapter of the guidelines deals with the ways of carrying out the interrelations with the stakeholders (OECD, 2005). It outlines that the state-owned enterprises should take all responsibilities coming from the legislation concerning the stakeholders, and should periodically report their execution to them, as well as they should adopt ethic codes with high moral standards and should involve the employees in their application (OECD, 2005).

Later on, in 2015, these principles were renovated (OECD, 2015). Three of them were better formulated, one was replaced and a new one appeared. It concerns a ban on state-owned enterprises to fund political parties and campaigns.

A whole chapter of the White Book of corporate governance in South-Eastern Europe is dedicated to the stakeholders in corporate governance. It gives account to the role of the stakeholders in creating wealth, their role for limiting the "excessive power of executive managements", as well as the significance of the human resource to creating competitive advantages of the enterprises (South Eastern Europe Corporate Governance Roundtable, 2003). This chapter outlines and underlines the following main formulations and principles on the role of stakeholders for the successful application of corporate governance (White Book of Corporate Governance in South-Eastern Europe, 2003):

- It is necessary to clarify the rights of the stakeholders, and the legislators should make provisions for a succession and unity of the different laws and regulations concerning the rights of the stakeholders.
- The Board of Directors and executive directors should be aware of the relevant rights of the stakeholders, and should create internal mechanisms for ensuring the observation of these rights.
- Companies should communicate between each other concerning their policy on stakeholders.
- Employees should have access to mechanisms of correction and/or compensation in cases of breaking their rights.
- The bankruptcy procedures and the mechanisms for exercising the rights of guaranteeing the claims should be stronger, effectively applied and imposed.

World Economic Forum (WEF) is the other influential institution, that launched a policy initiative for the promotion of the stakeholder theory. In 2019 its founder and executive chairman K. Schwab published a paper entitled: *Davos Manifesto 2020: The Universal Purpose of a Company in the Fourth Industrial Revolution* (Schwab, 2019). It starts with the following statement: "The purpose of a company is to engage all its stakeholders in shared and sustained value creation. In creating such value, a company serves not only its shareholders, but all its stakeholders – employees, customers, suppliers, local communities and society at large." The WEF Annual Meeting 2020 was convening under the theme on *Stakeholders for a Cohesive and Sustainable World*. Later, K. Schwab extended his thoughts, developing a concept of stakeholder capitalism as a desirable society development.

Before the worldwide initiative of WEF in August 2019, the CEOs of 181 biggest US companies signed a new Statement on the Purpose of a Corporation, where they commit to

lead their companies for the benefit of all stakeholders – customers, employees, suppliers, communities and shareholders. The statement notes that: "Each of our stakeholders is essential. We commit to deliver value to all of them, for the future success of our companies, our communities and our country."

Despite its political commitment, these initiatives might shed light on a new road for the development of corporations and society.

Conclusions

Stakeholder theory is gradually gaining recognition in theoretical circles and is increasingly used in business practice (Tchipev, 2014). The conclusions that can be drawn from the present study are the following:

- Stakeholder theory appeared in the mid-1980s has a solid theoretical foundation. It draws resources and uses the achievements of contemporary economic, political and legal theories and concepts such as the new concept of the corporation, motivation theories, systems theory, strategic management, industrial relations, etc.
- Criticism of stakeholder theory most often comes from the concept that the corporation's mission is to maximise the profits of its shareholders. Despite serious criticism, there is no author who denies the importance of stakeholders for the corporation development. In recognition of their importance, some critics have sought to contribute to stakeholder theory.
- Business practice seems indifferent to the development of stakeholder theory. However, it increasingly takes into account and considers the interests of stakeholders in corporate governance codes and other policy initiatives.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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DIGITAL TRANSFORMATION FOR DIGITAL COMPETITIVENESS AT A MICRO LEVEL

The development of digital technologies turned into the fourth industrial revolution – Industry 4.0, which is associated with the digitalisation of processes, big data, the Internet of Things, additive technologies – 3D printing, robotics, artificial intelligence. The digital transformation in business relations led to economic reformatting of logistical, production and trade processes in the global value chain and especially with regards to cross-border payments, production and trade. The present research fills the research gap concerning the relation between the preconditions for the digital transformation of industry, the economic effects from the reformatting of the global value chain and the related digital competitiveness of enterprises. The establishing of the relation and the identification of trends in the development of digital technologies and the global value chains is an indicator for the beginning of the transition from Industry 4.0 to the industry of artificial intelligence – 5.0.
JEL: A20; L1; O1; O14; O3; O33

Introduction

In order to conduct a research on the topic of digital competitiveness and in order to give a definition of this new for the theory and practice term, it is necessary to clearly establish the scope of the research field and to outline the existing relations with the new trends.

Digital competitiveness is a combination of two terms, each of which has its own meaning, specificities, economic and legal aspects. However, with their combination, the two terms outline the economic advantage on a micro level, i.e. the enterprise, on a regional level with the so-called transnational value chains, and on an international level with regards to the formation of the global innovation index. In this economic reality, intellectual property (IP) has an active role as a factor, and at the same time as a mean that is mediating these processes from the very creation of the digital medium, i.e. in the process of transformation of the product from analogue to digital form.

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In the last 40 years Industry 4.0 was used as a term meaning this process and the on-going changes in production and distribution activities. Despite there being a lot of research conducted on the positive aspects of this concept, there isn't nearly enough with regards to the digital competitiveness and economic effects of the digital transformation of logistical, production, distribution and marketing processes in enterprises. One notable reason is the continuous dynamic development of digital technologies which creates difficulties in identifying the economic effects and deriving the digital competitiveness. Another reason is the potential, considering its pace of development, for Industry 4.0 to transform into Industry 5.0, which will bring about even more change in the functionalities of the value chain. Despite there being many unknowns, digital transformation leads to economic effects and forms the so-called digital competitiveness for enterprises from all sectors of the economy which use digital technologies in their activities, as well as for those that create them and are active in patenting.

The primary objective of this research is to explore the state of the art as well as the state of practice of Industry 4.0 relating to the digital transformation of the industry, the economic consequences of the value-chain transformation, by pointing out the specificities of digital competitiveness. The research fills the research gap that is left with relation to the economic reformatting of the global value chain and the associated with it digital competitiveness of enterprises.

The used methodology comprises of an analysis of data on patents and scientific publications. Patents and scientific publications provide particularly useful ways to track and analyse trends in digital technologies. They provide an appropriate source of data to analyse and draw conclusions as they are systematically collected in a structured publicly accessed databases - FAMPAT database provided by Questel (FAMPAT by Questel, 2018). By conducting an analysis and systematisation of data from economic researches of leading consultancy agencies (van Duin & Bakhshi, 2020); (AI Report, Deloitte, 2016); (Marr, 2016); (Marr, 2020); (Gartner, 2020) were identified the economic parameters of the digital environment and derived the trends in the reformatting of the global value chain in the production and trade processes in the economic turnover. The systematic analysis of national policies of industrially developed countries allowed for the identification and systematisation of the preconditions for the development of the economic transformation on a global level. Comparing the results of prior analyses helped derive the relation between the economic transformation and the digital competitiveness, allowing its identification with specific economic effects.

The research does not go into depth with regards to the technical details of the digital transformation. It is also limited with respect to the on-going changes in the social and cultural environment and the challenges facing the legal system. The research is limited to the global processes concerning the development of the software industry and the patent activity in the sector of digital technologies, including those related to artificial intelligence with regards to the so-called patent leaders, who through their actions have an effect on the global value chain. In order for the economic reformatting to have an effect on a national level, the research is limited to the identification of the changes in the business environment caused by the digitalisation of industry in Bulgaria.

I. INDUSTRY 4.0. = SOFTWARE DIGITAL INDUSTRY

1. From digitalisation to industry

The definition of digitalisation contains certain technical parameters describing the specificities of the carried actions in this process of transformation. This is a process of conversion, i.e. transformation of an analogue medium, as text, sound, video, signal, telephone impulse in a digital form though digital devices by the method of scanning of information. In this way, the scanned information can be used by processing, storage and transmission in a digital environment through digital technologies based on digital devices, computer networks, satellites, the Internet, social networks – WEB 2.0, web of knowledge – WEB 3.0 and artificial intelligence, to the end-user (Marr, 2018). The use of the information in a digital environment can be done at a time and place freely chosen by the end-user. The end-user can also choose the quantity and the type of information which he/she wants to use by creating his/her own information systems containing diverse compilations of different information which on their own represent a new type of packaged information or product. This opportunity makes the end-user a participant in the process of creation and distribution of products in an online environment. This is a characteristic that in traditional production is very limited due to the place of the end-user at the very end of the value chain.

The security and the protection of information (cybersecurity) are of vital importance for the functioning of this environment. The devices and the systems for the security of information, both on a corporate and a national level, are an essential part of the digital environment.

2. The IP industry – The Software digital industry

The ability of digitalisation to provide access to information to many and different users at the same time and at a time and place chosen by them; to integrate heterogeneous information flows, to process, storage and transmit them using different business models for digital distribution, is the precondition for the formation of one of the fastest-growing creative industries – the software industry. This is an industry based on intellectual property, on its creation and management for business purposes.

Distinctive features of the industry are the rapidly developing technologies, highly qualified workforce, online management teams, virtual offices for the management of production and distribution processes, high revenue, transnational value chains. The industry is entirely created and functioning on human intellect and its intellectual achievements – intellectual property, software, hardware, integrated circuits, 3D printing, blockchain, Internet of Things and the look into the future that is Artificial intelligence (AI). Industry 4.0 provided an opportunity for digitalisation to form an industry from an integrated digital environment through many devices, technologies, and networks from all areas of the economy, to substantially change the economic environment through the creation of global value chains, the social environment through decreasing employment, highly specialised production, communication between machines, which may or may not involve a human intermediary.

This is an industry in which the rate of industrial advancement is everywhere and it is exponential – AI, robotics, Internet of Things, autonomous cars, 3D printing, nanotechnologies, biotechnologies, the science of materials, the storage of energy and quantum computers are just some of the areas where we see radical changes (Schwab, 2017). The software industry encompasses all areas of industry, greatly affecting the systems of production and management (see Figure 1).

Figure 1

Source: pixabay.com, pexels.com.

This is the industry of the new way of exploitation of natural resources, i.e. of the functioning of the mining industry, of production of intermediate goods in the processing industry through the use of improved communication and monitoring, self-diagnostics and analysis, though cybersecurity and control systems (Böhler, 2012). An industry in which production will move from automation to robotisation, where machines will be capable to conduct an analysis of the situation and communication with each other which will provide enterprises with opportunities for economies of scale, generation of revenue and relocation of human resources to other activities. One of the main goals of the industry is to achieve decentralisation of decision-making where cyber-physical systems are to be able to make decisions independently and to self-manage in their implementation (Karnouskos, 2012).

Cyber-physical systems[2] help human beings by performing activities that are impossible for humans because they are dangerous or physically challenging.

Human intervention in the operational independence of the machines is limited to existing conflicts in the decision-making and the implementation of the goals laid out in the program. For the implementation of the goals the industry continues its technological revolution by working on creating a copy of the real world through sensory data, which is done to guarantee information transparency in the communication between humans and machines,.i.e. in communication on the Internet via sensors between Internet of people and Internet of things (M2M – machine to machine). The visualisation of information is a precondition for the efficiency of people when making decisions regarding the elimination of existing conflicts (Ibid. Schwab, 2017). These unprecedented changes in the technological world lead to changes in the economy, society, and the individual. This is a convergence of the physical, digital, and biological world, a challenge, new reality, and a possible risk.

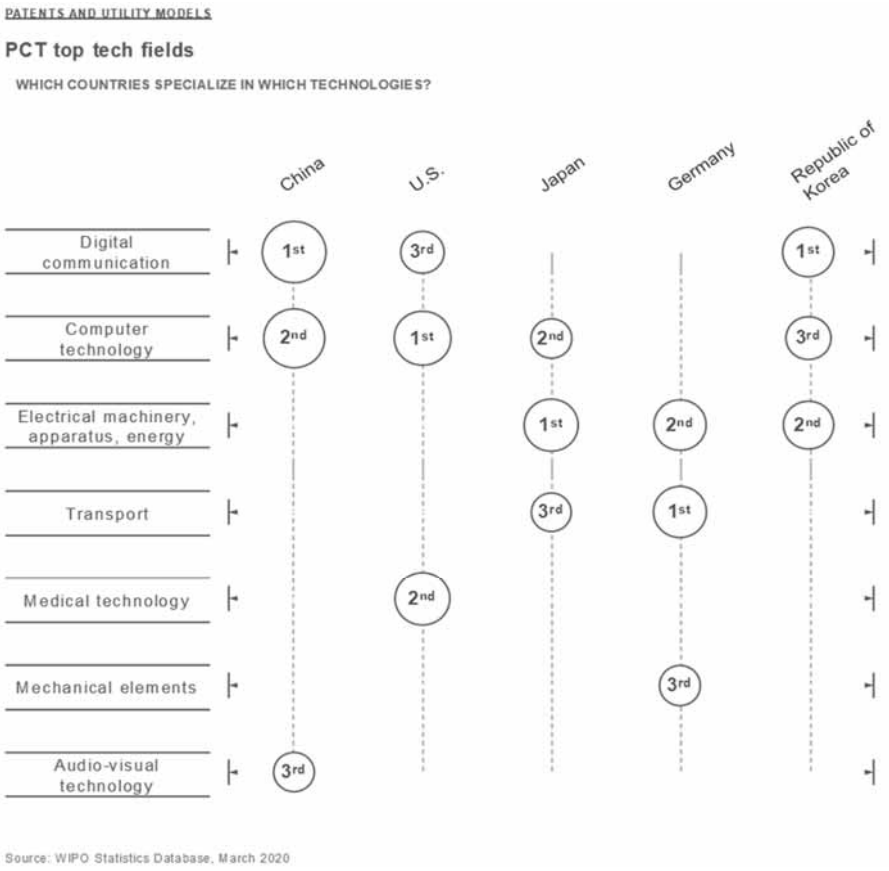
The patenting activity of enterprises in the digital sector is an important indicator for those economic changes. For example, with regards to patenting related to digital transformation and artificial intelligence, in 2020 enterprises from China and the Republic of Korea are active in filing for patents in the field of digital communication, while those from the U.S. filed most in the field of computer technology. For Japan, the top technology field of AI is electrical machinery, and for Germany it is transport. (Fig. 2) The unprecedented change in the tech world from the birth of digital technologies in the 1950s to 2018 is illustrated in the number of filed applications for patents related to them – 340 000. These patents form around 0,6% of all patents, which in total are 59,3 million until 2018 (WIPO, 2019) including:

- machine learning is an included functional application in the patents of more than 1/3 of all inventions (134 777 in 2018) and the filing activity has grown on an annual basis by 28% (in 2016 there are 20 195 patent applications filed, compared to 9567 in 2013);
- computer vision is an included functional application in 49% of all patents related to artificial intelligence (167 038 patents) and it has grown 24% on an annual basis (21 011 patent applications, 2016);
- robotics and control methods are included functional applications with the highest growth rate in patent application filing for the period 2013 – 2016, on average 55% annually.

The leaders in patent activity for digital technologies related to artificial intelligence, and in various fields, are IBM with 8,290 inventions, followed by Microsoft with 5930, Toshiba (5223), Samsung (5102) and NEC (4406) (see Figure 2).

[2] Cyber-physical system is a system in which information, software components are connected to mechanical electronic parts which communicate via one infrastructure for data, e.g. the Internet. The cyber-physical system is characterized by its high level of complexity. The formation of the system happens through wired and wireless networks between integrated systems. Areas of application can be: manufacture of medical devices and systems with high reliability, systems for care for the elderly, management of road traffic, network systems assisting the driving of vehicles, industrial systems for management of the automation processes, sustainable systems for management of the environment and others (Colombo, et al., 2014).

Figure 2



The funding in the field of digital transformation, primarily related to artificial intelligence in the USA alone for 2018 was to the amount of 46 billion dollars and the number of enterprises working in this field that received it was around 2868.

3. Elements of the digital environment and economic and social consequences

The elements of the digital environment are at the core of the value chain in the software industry and of Industry 4.0. Those are the devices and processes, the computer networks and their functional interactions which make up the global digital platform for the use of information in a digital form. Identifying the elements of the digital environment and their

characteristics will allow to determine the means with which to support and/or establish digital competitiveness. This is a complex integrated mix of independent elements which in their essence represent independent objects of intellectual property such as inventions, utility models, and technical, process and management know-how or trade secret. This specificity of the elements of the digital environment makes it by itself intellectual property, existing based on the management of IP rights of the elements that it is comprised of. That is why the main business models that are applicable in the software industry are the licensing models, including with types of use of protected IP under the conditions of open source[3] or public domain[4] (Lauren et al., 2008). The model of the open license is characteristic for the software industry and is justified by both the continuous intellectual dynamism in the field of digital technologies and by the necessity for access to created scientific research which can serve as a basis for additional research. The sharing of knowledge related to other technological developments creates opportunities for a diverse and dynamic environment.

In its entirety, the elements of the digital environment, according to some researchers (Ruessman et al., 2019), are nine, which is as many as the basic technologies that form the digital environment, and they are as follows:

- big data and analytics;
- autonomous robots;
- simulation;
- horizontal and vertical system integration;
- Internet of Things;
- cybersecurity;
- the cloud – a platform which is to unite all components of the digital transformation. This platform has to be accessible from any device, it has to have the ability to expand with the growing volume of data, and it has to be open for integration with different systems;
- additive manufacturing (3D);
- augmented reality, the so-called augmented and virtual reality – two popular technologies which can drastically change customer service, the training of employees, productivity and even the image of a company.

[3] The term open source is related to software products and it means software with an open code. This is a software for which the holder of the IP rights of the source code grants the rights for training, modification and distribution of the software to anybody and for any purpose (in other words – software with a license for open code). The software with open code can also be developed in a cooperative public way. Open source software is often compared to user generated content. The open source model generates a much more diverse scope of the design and the structure of the code.

[4] When a certain work is in the public domain, any interested party can use it for its own goals without the permission of the author and without paying remuneration.

According to other authors (Kondratiev, 2018), the digital environment is formed only from those technologies which have the biggest importance for the formation and functioning of the global value chains in the industry, namely:

- big data (its collection and evaluation for the optimisation of the costs and quality of production);
- Internet of Things;
- Robots and AI;
- Additive technologies – 3 D printing in the processing industries.

Considering that the leading interests of the research are the economic consequences of the digitalisation, the changes for business which occur and the specificities in its management for the identification and analysis of the so-called digital competitiveness, we will consider as main elements of the digital environment those elements that have a direct effect on the global value chain.

3.1. Big data and its dimensions for the economy

With consideration of the volume and the sources of information that goes in, is processed, stored and distributed, the digital formation of databases is always associated with the term "big". And they really are big because the information that goes incomes from all kinds of sources, from sensory devices to search engines and social media. Despite the fact that building a computer system that can maintain big data is a resource-intensive process, the low costs related to the processing and storage of data allows the applicability of this process in a large number of enterprises. This applies especially for those enterprises that participate in transnational business relations oriented primarily in the trade, where big data allows for the monitoring of foreign markets from a distance without additional investments in local representation. The creation and the maintenance of big data hide some risks, namely that the whole information is available and accessible online which raises the issue of unauthorised access and use, and therefore an infringement on personal and IP rights.

3.2. Internet of Things and its effect on the economy

The Internet of Things is a form of communication M2M or machine to machine. The Internet of Things has a significant role in the realisation of the B2B model, since it functions on the principle of sensory devices capable to receive and process information and to have the received data transmitted to other devices or people. The Internet of Things allows for the planning of operations between suppliers, producers, distributors, and the consumers, and significantly decreases the use of so-called intermediate goods. The reason for this is that the technology allows for the marking of the good with an identifier which contains information about its origin, designation and use, which ignores the need for synchronisation of the product and information flows. The economic dimension of this technological effect is the optimisation of production and distribution, and the minimisation of costs, especially those related to transnational business relations. This technology too faces the issue of

cybersecurity in the digital environment with regards to the information flows and the big data in them.

3.3. Robots, Artificial Intelligence and their economic benefits

When we talk about robotisation, we should make the clarification that the focus is on industrial robots, i.e. machines that are a part of the production of certain goods. These machines have similarities and significant differences with artificial intelligence (AI). AI can analyse the surrounding environment and take actions which increase the chances of achieving certain goals (Russel et al., 2003). Such devices are called intelligent agents (Poole, et al., 1998), since they are created with the hypothesis in mind that a core human quality such as intelligence can be so clearly defined so as to be simulated by a machine. Precisely because of these differences, AI is rather a part of Industry 5.0 which has already started. In the next five years, the industries which will undergo a complete transformation because of AI are those that make instant money transactions. Consequently, AI will start managing completely retail, healthcare, production processes, transport, logistics, including storage activities and the delivery of products, until it enters every economic activity (Lee, 2019).

When these powerful algorithms begin acquiring basic human abilities, such as sight, speech and navigation, and their combination helps them complete more specialised tasks which are routinely completed by human experts, then AI will step outside the software industry, which will make the transition to Industry 5.0 (Tsirigos, 2019).

At this stage, AI is still used to apply predefined models which the system looks for in the data and automatically take certain actions if they are found, in case of the processing of too much data in a short time (for example chat-bots for customer service or for predicting machine failure in case of certain deviations in the received data). With regards to the robotised machines, things are much simpler. They execute complex and delicate operations, even such that are dangerous for people, they are multipurpose and more flexible in the production, they function in all conditions, without a specified hierarchical administrative structure. These qualities lead to their use in small and medium as well as big enterprises.

3.4. Additive technologies and the 3D printing as economic innovators

Additive technologies apply programs for computer modelling which allow personalisation of goods and their production not through the assembly of the separate parts, but through their computer modelling CAD. The process is preceded by a digital modelling of the object and its printing in a three-dimensional form with a 3D printer, using liquid and powder materials.

The advantage of the use of additive technologies is the opportunity to personalise the production in accordance with the requirements of the end-user. This also decreases the use of resources in production, which in turn leads to lower costs. These goods are not applicable for mass production but for small batches and with lower production costs. The produced goods can have a complex structure and be produced in a shorter timeframe than it would take a traditional production. The production is mobile and can be located even in places such

as aeroplanes, tankers (e.g. the aircraft carrier USS Essex, '14) where there is a need for timely availability of spare parts. This characteristic of the technology for some productions leads to contraction of the value chain since it combines some of its stages. It is very applicable in the fashion industry. An innovative approach in the application of the technology is the 3D printer with open source code which functions on the principle of self-copying. One, also, should not underestimate the application of the technology in medicine with the 3D printing of organs for biological species.

II. ECONOMIC PARAMETERS OF THE DIGITAL ENVIRONMENT

1. Reformatting the production and trade processes in the economic turnover

The digital environment led to reformatting of whole national economies and this affected transnational productions, which led to a contraction in the value chain with regards to the stages of production and trade. The economic relations in the digital environment changed into personalised production, fast trade, attraction of direct investments and new technologies, including the knowledge associated with them. Despite the undeniable advantages of the digital environment, in order for them to turn into a competitive advantage for the enterprise and the national economy, according to some authors (Laplume et al., 2016) the following preconditions are essential:

- the size of the national market;
- the level of economic development;
- the structure of the economy with regards to whether the mining and processing industries are developed – the relationship between competitiveness and the digital environment is better developed when the processing industry is developed because a deeper integration is achieved in the global value chain functioning in a digital environment, through the import and export of intermediate goods (Gereffi, 2014);
- the customs fees, participation in regional trade agreements, the level of infrastructure development, foreign investments, the participation of the relevant institutions.

For the purposes of the identification of the economic parameters of the digital environment and the social-economic challenges facing enterprises in 2018, a survey has been conducted with 1600 top management participants selected from 19 countries (Deloitte, 2018) The results of the study show that 87% of the participants expect a more stable future with less social disbalances, but two out of three respondents are of the opinion that business will have a much bigger impact than what is reflected in government forecasts. Around ¼ of the people interviewed are of the opinion that the enterprises that they manage have a big impact on key social factors such as education, sustainability and social mobility. The summarised results of the study show that for enterprises whose managers participated in the study the data collected from the used digital applications is used for specific intelligent solutions in the business environment, because the participants believe that the collected data creates many opportunities for new products, services, better customer service, new positions and business models. Despite that, ¾ of managers still apply traditional business operations and don't plan

to transform the business models or the business strategy of the enterprise. The remaining ¼ believe that the enterprises have crossed into Industry 4.0 As a main reason for the slow rates of the digital transformation of business models of enterprises, managers point out the challenges in finding highly qualified employees and the building of a working team. Another reason is that digital transformation and staffing are not priorities in the strategic development of the enterprise. The third reason mentioned by managers is that the enterprises managed by them will certainly generate value for the owner, but it is not clear whether it will have social dimensions and if yes – what might they be.

The results of the survey are interesting in terms of the degree of readiness of the business for technological change, and the following conclusions can be made. The transition of businesses in an entirely digital environment is a serious change for enterprises. The full potential for the transformation of business requires a broader vision for the implementation of intelligent, connected technologies, which is a major challenge. Because of that at the moment enterprises use digital technologies for the optimisation of traditional activities related to time and quality of execution (47% of the surveyed enterprises use innovative technologies to improve the effectiveness of employees).

The remaining enterprises are the ones which use the digital environment for the next step – the creation of new business models, determining new ways of production, delivery, and generation of added value.

According to the results in the Deloitte's report, the digital environment is revolutionary because it allows enterprises to capture real data, analyse it with the help of digital technologies and then to propel the informed action in the physical world. This continuous and cyclical flow of information, known as "physical-to-digital-to-physical", allows them to react in a real time to changes in the business environment. In addition, using the large collected volume of data, they can recognise models, simulate and model the potential future through scenarios and learn to even predict future changes. This can make them more adaptable to unexpected changes, more flexible to unpredictable ecological changes and better prepared to deal with challenges both internally and externally.[5]

2. Preconditions for development of the economic transformation

A characteristic of the digital environment is the fact that despite it being based on intellectual property, i.e. new technologies, it is not a work of one enterprise that has a monopoly on its use. Quite the opposite, it is a targeted state policy of industrially developed countries, led by Germany. In 2013 the German government was one of the first which mentions Industry 4.0 as a strategic goal for the development of the national economy. The so-called high-tech strategy presented in 2015 outlines a plan for the almost complete computerisation of the processing industry to a point where it won't need the help of humans. At present, the German government invests around 200 mln. euro (around 146 mln. British pounds, 216 mln. dollars

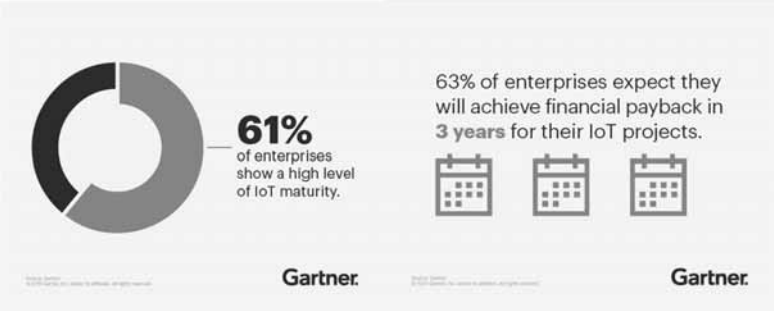
[5] See: https://cio.bg/analizi/2018/04/25/3433171_industriia_40_-_mechta_ili_realnost/

or 278 mln. american dollars) for the promotion of scientific research in academia and business.[6]

The national economy is an important precondition for the digital transformation of production in the USA, e.g. the non-profit organisation Smart Manufacturing Leadership Coalition (SMLC), with the representation of producers, suppliers, tech enterprises, government agencies, universities and laboratories, implements the national policy by working to create progress in the thinking related to digitalisation of business processes in the industry. The goal is to build an open, intelligent production platform for industrial network applications, which will allow production enterprises, with priority for SMEs, to have easy access to modelling and analytical technologies that can be personalised for their business needs.[7]

The motives for the implementation of a national policy for digital production are the improvement of productivity and the elimination of unproductiveness in all stages of the value chain, at reduced costs and with the use of data at a real time. Behind these motives, we have numbers that act as arguments and determine the value of this digital revolution, namely over 4 trillion dollars by 2020 market share[8] (see Figure 3).

Figure 3



Source: Gartner at: https://www.gartner.com/en/information-technology/insights/internet-of-things

According to a research, conducted by the consultancy company Gartner, the market for Internet of Things by 2020 is worth almost 3,7 trillion dollars.[9] The research shows that enterprises from around the world will take advantage of digital technologies which will

[6] In a speech of chancellor Angela Merkel in January 2015 at the World economic forum in Davos:
[7] https://www.kaldata.com/it-%D0%BD%D0%BE%D0%B2%D0%B8%D0%BD%D0%B8/%D0%BA%D0%B0%D0%BA%D0%B2%D0%BE-%D0%B5-%D0%B8%D0%BD%D0%B4%D1%83%D1%81%D1%82%D1%80%D0%B8%D1%8F-4-0-%D0%B8%D0%BB%D0%B8-%D1%82%D1%80%D0%B5%D1%82%D0%B0%D1%82%D0%B0-%D0%B8%D0%BD%D0%B4%D1%83%D1%81%D1%82-321987.html
[8] Data from KPMG
[9] https://www.gartner.com/en/information-technology/insights/internet-of-things

increase the earnings of the manufacturing sector with around 445 billion British pounds and will create around 175,000 jobs.

The implemented policies also presuppose the institutionalisation of the issue of the digital industry. For example, in Germany and the USA consortiums are being established with the task to deal with this issue, the German Dialogplattform Industry 4.0. and the American Industrial Internet Consortium, which will develop common standards for the so-called transnational intelligent factories.

3. Economic transformation and competitiveness

The digitalisation of the industry means, in essence, an economic transformation, which always outlines those elements of the transformation process that create the competitiveness for enterprises. In the course of this research, a large part of those elements were underlined (increase in productivity, decrease of the costs for labour, raw materials, personalisation of the production, increase in direct investments, improvement of the distribution, international market expansions, etc.). Competitiveness will be expressed in:

- establishing control over the processes of merging of goods and services in one product, the so-called intelligent product;
- participation in the global production chains of the processing industry, while avoiding the production and consumption of intermediate goods, the so-called intelligent production;
- use of highly qualified employees for the management of intelligent factories and the processes within them;
- automation of the production and delivery in the so-called intelligent factories;
- creation and application of new business models, the so-called hybrid business models with an accent on personalised production and consumer efficiency. With the model, the consumers participate in the value chain in the role of providers of information for the personalisation of the product, and in some cases participate in the production process (Bogers et al., 2016).

All these economic effects create certain competitiveness which, however depending on the specificities of national legislations, markets and business practices is different, both for the enterprises in different sectors and for the enterprises in different countries. In this sense, the competitiveness is expressed in the so-called upgrade in the value chain. In essence, this is an economic upgrade which is defined as a process of transfer of economic agents, players, participants (enterprises, workforce) from low value-added productions to high value-added productions. The digital environment and the trends in production and trade in it differentiate four versions of such an upgrade depending on the national economy of the given country, and on the cross-border nature of the value chain, i.e. the international interconnectedness of production and/or the trade activity of the enterprise, such as processes in other enterprises at a territorial distance.

- Improvement in the production process by the use of digital technologies with influence over production costs;
- Improvement of the product and its delivery – type of innovation production;
- Functional improvement, i.e. identification of niches in the value chain with less competitors (e.g. the enterprise holding rights for the trademark Nike reoriented its production not towards product diversity but towards increasing of the design options of the products, and the enterprise Acer which started branding its production chose a similar solution);
- Improvement of the product range (e.g. Nokia and Krups, the former reoriented from the production of shoes towards the production of mobile phone technologies, and the latter from the production of military technology towards coffee machines. (Ruessman et al., 2015)

It is noticeable that besides the two traditional models for an upgrade, related to the digital industries, another two models have formed which, however, are based mainly on the creation and use of IP (industrial designs, trademarks, etc.). We should note that digital technologies allow for the development of competitiveness not only on the level of production but also with regards to logistics, employee productivity and improved customer experience.

III. WHAT DOES THE DIGITALISATION OF THE INDUSTRY MEAN FOR BULGARIA?

The digitalisation of the industry in Bulgaria means that "Production operations are combined with the newest information and communication technologies, and the driving force behind this development is the rapid digitalisation of the business world and society as a whole. The trends in production processes are more personalisation of the products which means that production lines must adapt easily and automatically to orders, and also have to be able to compensate for the individual production units that are at a standstill. The new opportunities for management of factories will give opportunities for faster reactions."[10]

In this sense, the production in the digital industry should be based on:

- strategic importance – it is the expansion of the meaning of the term "improvement of the product or the production" through digital technologies, namely, this is the development and application of whole new business models;
- intelligent factory – this is integration and self-regulation of the processes in the value chain with an accent on productivity. Big data is generated, which creates a burden for the information systems and requires serious investment in their construction. With regards to distribution the accent in on the digitalisation of processes linked to outside partners and big clients, which requires a large-scale digital integration for the purposes of creating digital networks for the generation of added value;

[10] Borissov, B., head of „Engineering“ – Festo production EOOD, see: https://www.tbmagazine.net, 08 January 2018

- intelligent operations – the digitalisation of the processes allows an integration of operations on both horizontal and vertical levels (in essence this is the integration of the production systems inside the enterprise) of the value chain;
- intelligent products – those are physical objects, equipped with information and communication technologies, through which they communicate with the surrounding environment, record it using sensors, and offer different functional applications to be added. They provide information for the exact condition and place of the product in the production or trade process, in real time;
- highly qualified employees – they help mediate the transformation but only when they possess the necessary qualification (engineers, ICT specialists). The investments related to completing the professional qualification of employees are significant investments for the enterprises.

The digital technologies are already available in Bulgarian. In 2019 the Bulgarian enterprise Allterco (the technology that made the enterprise successful is a children's watch with smart technology called MyKi) successfully completed an initial public offering of shares on the Bulgarian stock exchange by which it collected over 2 million leva of capital and it turned in the second tech company that is publicly traded in Bulgaria. Another Bulgarian high-tech company is Melissa Climate. It uses the Internet of Thing for smart devices aimed at energy efficiency at home.

Big data and information, their processing and distribution help in the finding of innovative solutions with the use of Internet of things – inventions and innovations, improved existing products through the use of IP, such as trademarks and industrial designs. Such innovative examples are Echo and Alexa, which turn household appliances in an intelligent management system. Considering consumer sentiment, a good example is the printed tag sensors on Johnnie Walker bottles. Therefore, the competitiveness in a digital environment is expressed in:

- new products and services – renovation of products and services, creation of new ones and introduction of innovations;
- automation of processes – optimisation of business processes, increase of the effectiveness of work and improvement of the decision-making process;
- lower costs;
- better interactions with clients – improvement of the service and creation of a unique consumer experience;
- more successful marketing.

Enterprises that have introduced the digital transformation in their businesses are 26% more profitable and their market value is 12% higher than the average for their industry.[11]

[11] Shopov, A., Digitalna transformaciya na biznesa, https://www.tbmagazine.net/statia/digitalna-transformaciya-na-biznesa.html, 10 April 2017

Those are also the plans of the Bulgarian government, which by adopting the "Concept of digital transformation of Bulgarian industry (Industry 4.0)" aims towards modernisation, automation and competitiveness of the Bulgarian economy in the medium to long term (2017-2030).[12] That way, by 2030, Bulgaria should be recognised as a regional centre of the digital economy through the implementation of products, technologies, business models and processes in the digital industry. The targeted areas of digital transformation are the digitalisation of business, the export orientation and competitiveness in the following headings:

- strengthening the relationship between science and industry in the country and accelerated integration of Bulgaria into European and international programs, initiatives and networks related to the development and implementation of Industry 4.0.;
- technological innovation of the Bulgarian economy through: introduction of standards, construction of infrastructure, development of specific mechanisms for stimulating the development and market introduction of technological innovations (new products, services and production processes) through the technologies of Industry 4.0.;
- building human, scientific, organisational and institutional capacity for the development of Industry 4.0 in Bulgaria (EC-EU, Doc. 32, 2019).

The implementation of the Concept will implement specific policies and measures for the digitalisation of the economy and the production sector, and will coordinate the policies, instruments and mechanisms in the different ministries, both between them and in accordance with the policies of the European Union in this field.

In conclusion, we can summarise that the businesses which can react in time to the digital transformation are destined for economic success, but how much would that cost in a social aspect? After all, the digital competitiveness is aimed at achieving economic effects. Its development is connected to the overcoming of serious social and cultural challenges such the limitation on personal freedom, including in the making of decisions about consumption of goods and services, the decrease in job opportunities, the security of data in the digital environment, the decrease of social skills compared to technical ones, the changes of the way we live, and the way we create and consume culture. Whether the digital industry will achieve a balance between the economic and the socio-cultural effects, probably only time will show. In any case, what is undeniable is that the digital competitiveness is a precondition for economic growth and wealth, both on micro and macro levels.

[12] Protocol decision № 37 from 30 August 2017 The Council of ministers approved „Concept of digital transformation of Bulgarian industry (Industry 4.0)“, as the basis for the development of a Strategy for the participation of Bulgaria in the fourth industrial revolution, see: https://www.mi.government.bg/bg/themes/koncepciya-za-cifrova-transformaciya-na-balgarskata-industriya-industriya-4-0-1862-468.html.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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ANTI-CRISIS MACROECONOMIC POLICY IN THE CONDITIONS OF COVID-19 IN BULGARIA

Any anti-crisis macroeconomic policy includes monetary and fiscal policy. The construction of anti-crisis macroeconomic policy in the conditions of a small open economy in a currency board and a virus pandemic raises the question of which measures should be the foundation and which measures should play a complementary macroeconomic role. This issue is extremely important because it predetermines both the efficiency and effectiveness of counter-cyclical policy. This study deals with the structuring of the main and complementary role of the fiscal and monetary policy in the general anti-crisis policy of Bulgaria. The focus is on 2020, looking at the impact of aggregate fiscal multiplier and monetary measures on GDP, based on extrapolation. A mathematical analysis is realized, which leads to quantitative results that illustrate the impact of fiscal and monetary policy on GDP development in a predictable short-term period which covers 2020 on a quarterly basis.
JEL: E6; E62; E52

1. Introduction

The socio-economic system of Bulgaria in the second quarter of 2020 entered a "new" reality, which is determined in the conditions of COVID-19. In this situation of ambiguity and uncertainty in the field of health care, an epidemiological emergency was introduced as a result of a political decision. This political decision, which was provoked by the shock in the health system, reproduced an unprecedented supply shock that induced an economic downturn in GDP dynamics. This supply shock is transformed into a decline in consumption and induces a demand shock. Thus, the Bulgarian economy began to move towards an economic crisis that combines systemic, individual, economic, health and political risks that arise in the conditions of global, regional and national generality and uncertainty caused by COVID-19.

The main reason for the economic crisis is the delayed coordination of social distance policy with specific economic policies. The outbreak of the COVID-19 pandemic in China was registered in 2019. It was registered in Bulgaria in mid-March 2020. Therefore, the political

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inactivity and the delay of coordinated and simultaneous actions of health and economic measures led to a supply shock from the delayed restructuring of the economy and adjustment of functioning in conditions of social distance. The economic shock of supply is hitting the Bulgarian economy hard, as the Bulgarian economy is mainly an economy of tourist and restaurant services. Accordingly, sectors that provide a large part of employment are affected. Sectors such as light industry need to be restructured, which is delayed and thus reproduces cyclical unemployment, which is combined with forced unemployment and aggregate consumption is reduced. Thus, demand became the main cause of the economic crisis in Bulgaria.

In these conditions of economic collapse, a strategically correct anti-crisis macroeconomic policy should be built which can correspond to the causes of the crisis. That is why **the main goal** in the present study is to argue quantitatively the rational and effective anti-crisis macroeconomic policy. An anti-crisis policy must include both fiscal policy and monetary measures. It is noteworthy here that the anti-crisis policy to be constructed in Bulgaria will contain fiscal policy and monetary measures, not monetary policy, as in the conditions of a currency board the actions of monetary policy are limited, but it is possible to apply monetary measures, such as targeted lending which does not require the payment of interest for a certain period of time.

It has been historically proven that anti-crisis macroeconomic policies involve a combination of fiscal and monetary policy instruments. In recent years, it has been argued that it is more favourable to use the instruments of monetary policy as the main one, because according to classical theory, the state should not interfere in the economy, while fiscal policy should be complementary. As the monetary policy in case of recession gap takes the form of quantitative reliefs, and in case of inflation gap and in case of economic recovery, it takes the form of the so-called inflation targeting. However, the intuitive economic logic leads to the **thesis** defended in this publication that in an economic crisis caused by government decisions, in which the main problem is to increase demand, then the basis of the anti-crisis macroeconomic policy should be fiscal monetary measures and a complementary and auxiliary instrument and together to participate in the counter-cyclical strategy for overcoming the economic consequences of COVID-19.

The argumentation of the thesis is achieved through mathematical analysis based on extrapolated values of GDP, consumption, imports, government spending, money in circulation, loans, the velocity of money for those missing in the second, third and fourth quarters in 2020. The period covered by the survey is from the first quarter of 2019 to the fourth quarter of 2020, with the emphasis on the period from the first to the fourth quarter of 2020. Data sources are NSI and BNB statistics, which are completely homogeneous.

2. Literature Review

The idea of a targeted counter-cyclical macroeconomic policy to regulate the trade cycle was first developed by Keynes (1991). The regulation of the trade cycle in Keynes's theoretical construction is realized by promoting consumption through investments which are realized by the state and which are the core of the anti-crisis macroeconomic policy. According to

him, the main tool in crisis management is fiscal policy. Keynes (1991) views monetary policy as supporting to and complementary to fiscal policy. He rightly points out that the interest rate, as the main instrument of monetary policy, is effective in conditions of an inflationary gap, but its effectiveness decreases significantly in conditions of recessionary gap. Examining and analyzing the impact of interest rates on the trading cycle, Keynes (1991) does not deny the use of interest rates in a recessionary phase, but argues that lowering interest rates is not enough to stimulate a simultaneous increase in the margin on effective capital and propensity to consumption, which is a prerequisite for controlling and overcoming the recession and depression in the trade cycle. This logical perspective, followed by Keynes (1991), leads to the thesis that monetary policy is complementary to fiscal policy and, respectively, the interest rate is an auxiliary anti-crisis macroeconomic instrument, as its dynamics is predominantly asymmetric to the dynamics of consumer and investment attitudes, especially in economic turbulence. Following the same logic, Keynes (1991) sees the reasons for the emergence and deepening of demand crises, which depend on the propensity to consume and invest. The propensity to consume is associated with the level of employment as an indicator and goal of anti-crisis policy, in addition to economic growth measured as GDP. From this, it is already clear that the stimulation of employment can be realized most effectively with the application of discretionary fiscal policy, which in turn is realized through the mechanism of the investment multiplier, which in Keynes's theory is a relationship between aggregate investment and income, which is measured as real wages. Stimulating employment in times of crisis can be done most effectively through fiscal policy, because it creates real income, not nominal income, which is a prerequisite for maintaining the level of employment at a level that does not create a deepening crisis and does not cause social shocks and catastrophes. Therefore, in his views, Keynes (1991) argues that tax policy, monetary policy, and fiscal policy must interact and reduce inequalities, which are intensify, especially in times of crisis. Of course, the primary anti-crisis measure is the action of the expenditure multiplier, which, however, must be supported by the effects of the tax and monetary multiplier.

Mundell (1962) argues that the instrument of macroeconomic policy must be determined by the macroeconomic goal and the type of crisis. He writes: *"It has been demonstrated that, in countries where employment and balance of payments policies are restricted to monetary and fiscal instruments, monetary policy should be reserved for attaining the desired level of the balance of payments, and fiscal policy for preserving internal stability under the conditions assumed here. The opposite system would lead to a progressively worsening unemployment and balance of payments situation."(Mundell, 1962, p. 76).*

From what has been written, it is clear that fiscal policy is effective when the goal is to achieve a balance between supply and demand in the internal market, and monetary policy is effective when the macroeconomic goal is to balance the balance of payments and achieve external balance. Another conclusion that can be drawn from the developed thesis of Mundell (1962) is that macroeconomic policy, which must be implemented in times of crisis, is a mix of fiscal and monetary policy, the basis of which is fiscal policy, because, in conditions of recessionary gap, the emerging internal imbalances must first be controlled, and the management of external shocks affecting the external equilibrium is a subsequent anti-crisis step.

According to Modigliani (1977), stabilization macroeconomic policy is needed to manage liquidity and preferences, as well as the lack of flexibility in the labour market resulting from rigidity wages. The firmness of prices, even in conditions of flexible wages, would disrupt the synchronicity between supply and demand, because there will be a mismatch between the nominal and real price and wage dynamics as a consequence of declining demand, which will require a new balance of employment and output, which in the short term can be realized only through the implementation of a stabilization policy. Stabilization policy is needed firstly to stabilize prices through monetary policy and, secondly, to stabilize employment through fiscal policy. The author develops the thesis that only the use of monetary policy to stabilize the money supply is not effective and will not be able to regulate the trade cycle, but on the contrary will create conditions for alternating recessionary, inflationary and stagnant cyclical phases. The functioning of the complex mechanism of the economic system, including variable prices, employment, interest rates and money, depends on a complex stabilizing mechanism, which includes monetary and fiscal policy. He states: "*Monetary policy could change the nominal supply of money so as to accommodate the change in real demand resulting from shocks in aggregate demand. Fiscal policy, through expenditure and taxes, could offset these shocks, making full employment consistent with the initial nominal money stock. In general, both monetary and fiscal policies could be used in combination. But because of a perceived uncertainty in the response of demand to changes in interest rates, and because changes in interest rates through monetary policy could meet difficulties and substantial delays related to expectations (so-called liquidity traps), fiscal policy was regarded as having some advantages* "(Modigliani, 1977, p. 2).

Fiscal policy and the mechanism of the investment multiplier are the core of the anti-crisis macroeconomic policy, as well as the tax policy when the effective aggregate demand shrinks. Therefore, if the crisis is characterized as a recessionary gap combined with deflation, provoking inflation would be a positive sign of economic recovery.

Snowdon et al. (2005) analyze the impact of fiscal and monetary policy in a small open economy with a fixed exchange rate. They assume that in addition to a fixed exchange rate, the economy has perfect capital mobility and in the long run income moves around its equilibrium point. The conditions thus described are a prerequisite for the conduct of fiscal policy, which will be highly effective, while monetary policy will be ineffective. They even argue that under these conditions, increasing government spending will not drive out private investment.

Blanchard (1987) argued that monetary policy with a low hardness of nominal variables would allow monetary policy to influence production with some delay. At the same time, however, the information in the standard pricing mechanism reduces the efficiency of monetary policy and creates economic shocks. The problem here is that there is insufficient information for both society and public authorities that have to make macroeconomic decisions. Therefore, in economic turbulence with deep deflationary characteristics, monetary policy would not be effective.

Blanchard (2002) came to the empirical conclusion that an increase in costs leads to an increase in output, but at the same time pushes out investment. Another conclusion reached by the authors is that the increase in taxes leads to a decrease in production, exports and imports. From the conclusions made, it can be deduced that the cost multiplier is effective

and leads to increased household consumption and increased production. Therefore, fiscal policy in certain cyclical phases is effective. It is important to note that tax policy must be very precisely synchronized with the budget policy in order to have an optimal effect on GDP dynamics.

The 2008 crisis is built Blanchard's (2012) views on the content of stabilization policy. He points out that the main goals of the macroeconomic stabilization policy are production, inflation, the exchange rate, and they are achieved with macroprudential instruments, which are reduced to regulating the credit policy of the banking system, increasing the liquidity of the banking system, creating capital buffers. The so-called sterilized intervention on the open foreign exchange market can also be used as a monetary instrument.

The purpose of macroprudential management is to preserve the financial system, through which to finance the real economy in times of crisis and economic risk. It is clear that Blanchard sees the interaction between monetary and fiscal policy, but sees fiscal policy as a tool used only in the most severe economic downturns, which are characterized as crises and depressions.

Krugman (1998) analyzes monetary policy and concludes that it is ineffective in certain cases. The case in which it is inefficient is the state of the economy, called the liquidity trap. This condition can also be caused by the monetary policy itself. The economic stagnation and inefficiency of monetary policy can be overcome with expansionary fiscal policy.

Stiglitz (2010) is a supporter of the mix of fiscal and monetary policy, the so-called policy mix, as tools to counter economic downturns. Supporting the thesis of the characteristic understanding of neo-Keynesianism, he defends the thesis that the simultaneous application of fiscal and monetary instruments and their interaction would be the most effective and optimal option that anti-crisis macroeconomic policy should contain. The author, considering the monetary instruments and linking them to the discretionary counter-cyclical policy, came to the conclusion that it should be relied more on the implementation of targeted credit policy, and not only interest rates. This thesis is largely based on the intuitive logic, which is based on the view that the capital, following the profit, at low-interest rates will be directed to risky market niches. Stiglitz (2011), by placing credit policy as the main monetary instrument and the interest rate as an ancillary one, argues that lending should be predominantly targeted at small and medium-sized enterprises rather than large ones, because otherwise, the effect of credit policy will be neutral. The logic here is that the desired credit multiplication will be possible and effective only when lending directs capital flows to the "engine" of the real economy, namely small and medium-sized businesses. This channel of interaction clearly reveals the simultaneous preservation and drive of consumer and production demand, which, corresponding to the dynamics of employment and income, will have a favourable effect on the real economy, which will control the crisis processes and will start a much faster effective economic recovery.

After analyzing the main authors of Keynesian and neo-Keynesian economic theory, we come to the thesis that the two economic paradigms postulate state intervention in a crisis. According to Kirova (2010), the "old" Keynesians and the neo-Keynesians accept that the state should intervene in the economy, but the extent and emphasis of this intervention differ.

Friedman (1948) examines the two instruments of stabilization policy, namely monetary and fiscal policy. He concludes that discretionary monetary and fiscal policies should not be used as tools to regulate the business cycle. According to him, government spending can increase when there is a reciprocal increase in budget revenues. Monetary policy instruments such as open market participation, central bank government financing and targeted lending should not be used as instruments for regulating the trade cycle. He goes even further, arguing that banking instruments should be reduced to deposit banking operations and that the government deficit should be equal to a previously realized budget surplus. He is particularly critical of the progressive way of taxation because, according to Friedman, there is a large lag gap between the assessment of the tax and its actual payment. The logic here is that costs depend on revenues, and when they are already accrued and there is a rough clarity on how much revenue will be collected, the expenditure part of the budget is made, but for the reason, that collection on the basis of progressive taxation has a lag gap, it is possible to deform the stability of the public sector, as the budget balance may be disturbed. From what has been said so far, the author refers to the fact that he actually believes in an automatic stabilization mechanism that rejects discretionary macroeconomic policy. The automatic stabilization is realized on the basis of a balanced budget balance. In fact, Friedman (1948) limits government intervention in economic dynamics by denying discretionary macroeconomic policy. For him, government intervention, which by increasing government spending, is trying to reduce unemployment in a crisis, is the main reason for provoking negative economic processes. This is the main criticism that Friedman (1948) made about the Phillips curve when stagflation arose in the United States in the 1960s and 1970s. According to Friedman (1992), the increase in money supply is due to the rapid growth of government spending, government policy and the Federal Reserve. His main thesis is to regulate the amount of money supply and it must correspond to the dynamics of GDP. Therefore, the interest rate stands out as a monetary instrument that has an active role in the money supply, but at the same time does not require discretionary monetary and government policies to change the structure of the money supply and proves an acceptable instrument of money supply regulation, together with a balanced budget, balance and deficit. The main weaknesses of the theoretical framework developed by him are that he considers the economic dynamics in the long run and that he does not proceed from the reasons that created the financial and economic downturn, i.e., he does not take into account whether the negative shock is induced by supply or demand. Hence, it is now possible to absolutize that government intervention and fiscal policy always lead to inflation, which, in turn, always leads to a simultaneous increase in unemployment.

Schimmelpfennig et al. (2002) examine the effect of fiscal policy on the economy through the fiscal multiplier. They conclude that, although small, the effect on economic development is positive. The strength of the impact of fiscal policy depends on many characteristics, such as the fiscal position before the crisis, the time when fiscal instruments are triggered, the exchange rate, etc. Despite all these conventions, and although the authors do not claim to have fully clarified the impact of fiscal policy, it is concluded that in a recession, the fiscal multiplier may, under certain conditions, be much more effective than the empirical results.

Abdih et al. (2010) argue that in a recession and a fixed exchange rate, fiscal policy is the most effective tool for stabilizing the economy. Restrictive fiscal policy in a recession acts pro-cyclically and deepens the negative shocks and macroeconomic imbalances. The authors

associate the fiscal policy to specific instruments and therefore view government spending and tax rates as direct fiscal instruments that have counter-cyclical characteristics. From what has been said so far, it is also determined when government expenditures and tax rates are pro-cyclical and when they are counter-cyclical. Intuitive economic logic makes it clear that when government spending increases and tax rates fall in a recession or crisis, a counter-cyclical fiscal policy is in place. And when government spending and tax rates remain unchanged in a recession, pro-cyclical fiscal policy is in place.

Debrun (2010) examines fiscal policy and its relationship to economic instability, placing autonomous stabilizers and fiscal policy change as the basis of stabilization policy. In his reasoning, he came to the following conclusions: the first conclusion is that automatic stabilizers have a strong influence on economic dynamics when its trend does not have high volatility and volatility. The second conclusion shows that fiscal policy, which is related to pro-cyclical or counter-cyclical objectives, does not have a significant impact on the dynamics of production. However, on the other hand, the authors argue that fiscal policy, which has no cyclical goals, affects production and consumption. From these conclusions, it is clear that their view is that discretionary fiscal policy pursued by the government in the short term in order to curb cyclical fluctuations would not have a significant impact on the dynamics of production. On the other hand, they argue that in the long run, fiscal policy that takes the form of automatic stabilizers will be effective. They also argue that the government can contribute to macroeconomic stability in the long run. It is clear that the authors assume that the stabilization fiscal policy registers a strong effect on production and consumption when it takes the form of automatic fiscal stabilizers. And automatic fiscal stabilizers are optimally effective provided that there is an interaction between monetary policy and discretionary fiscal policy, which corresponds to the stability of public finances. In other words, according to Debrun (2010), government intervention should consist of building passive fiscal policies that do not register direct interference in economic cyclicality.

Afonso et al. (2019) examine the effect of the expenditure multiplier and the tax multiplier on economic growth. They conclude that the cost multiplier is much more efficient in the recession phase, while the tax multiplier is more efficient in the boom phase. The conclusion made by the authors clearly shows that they come to the thesis developed by Keynes (1991) about the effectiveness of fiscal policy in conditions of economic crisis and support it.

Baum et al. (2011) examine the shocks in fiscal policy. The main conclusion they draw is that discretionary shocks have a large multiplier effect in conditions of economic recessions.

Djuraskovic et al. (2018) investigate the macroeconomic theory in the context of the global economic crisis through the prism of monetary and fiscal policy. The authors conclude that monetary counter-cyclical policy cannot reproduce the effect of fiscal counter-cyclical policy on economic development. They argue that fiscal policy is very effective in an economic recession, as proved by the proposed fiscal measures by China and the United States. Hence, the authors conclude that Keynes's theory makes its great return both in practical and theoretical aspects.

Another point that is important in the analysis of fiscal policy regarding the impact of government expenditure multipliers on GDP is the issue of expenditure efficiency. Guided by the understanding that budget expenditures are a burden on the economy rather than an

incentive, countries are more likely to rely on limited budget expenditures. According to Minassian (2018), the unconditional treatment of this understanding does not correspond to modern trends. What is crucial here is not the amount of budget expenditure, but the way in which the latter is used. The fiscal regulatory strategies should focus on increasing public investment, which stimulates economic growth and cuts inefficient current government spending.

Yotzov (2018) considers the effect of fiscal policy on economic growth in a small open economy, which is in terms of a currency board. The conclusion reached by the author is that the conventional macroeconomic statement is confirmed, that in conditions of crises, the multipliers increase and their influence decreases over time.

Zlatinov (2014) analyzes the possibilities for macroeconomic policy to limit the negative economic shocks. He examines the various economic theories and makes a comparative analysis of their main formulations regarding the coordination of fiscal and monetary policy. It concludes that in the short run in a recession, fiscal policy is effective and monetary policy has a long-term effect, with the main goal being sustainable economic development.

Analyzing the latest research on the economic challenges posed by the COVID-19 pandemic, several reports stand out.

A study by Yotzov et al. (2020) states that the economic crisis caused by COVID-19 has a special character because it began as a crisis of supply, which then turned into a crisis of demand. It is also pointed out that the main channel of the crisis passes through the real economy and especially from the sectors that use the human factor for their production and service activities. The report also provides an in-depth analysis of the measures that countries will take to overcome the COVID-19 crisis. Counter-cyclical measures are divided into two groups of fiscal measures and monetary macro-financial measures.

Di Mauro (2020) claims that COVID-19 will cause a temporary decline in supply and demand. According to him, the global shock in the world economy begins as a supply shock, which will be characterized by the rupture of production chains. According to the author, the shock in consumption will have several sources. The first source will be the affected sectors such as transport and tourism, which depend on the demand of individual households. The second source will be the subjective-psychological factor that will shrink consumption. The decline in income is the third source that will generate a shock in demand. The fourth source is the measures taken by the authorities, which impose social distance. The author arrived at two very important conclusions, which are directly related to the present study, namely, that the shock in demand comes from the measures imposed by the authorities and that the decline in income, i.e., the shrinking demand will be combined with rising costs. Although Di Mauro (2020) does not focus on government measures and demand as the main determinants of the economic crisis in the context of the virus, he clearly highlights the nature and mechanism of the economic crisis of COVID-19. The author argues that the management of the economic crisis that is emerging and will develop must be realized through monetary and fiscal policy. He makes it clear, following the example of the United States, that the first step is to reduce interest rates to encourage investors to invest in the real economy, but the deepening crisis requires fiscal policy, which he says will be much more effective than monetary policy. Boone (2020) point out that the channels through which COVID-19 will provoke an

economic crisis are supply disruptions, declining movement of people, goods and services and high uncertainty, which will affect the contraction of investment and consumer demand. The authors highlight that the management of the economic crisis goes through the management of a possible medical crisis, so in the first place, the costs must be to ensure a good medical work and financial environment. Then, there should be targeted financial transfers in support of households and targeted increase in liquidity buffers in the banking system to serve companies, as well as relief or even exemption from fixed taxes and credit obligations.

Cochrane (2020) postulates an extremely interesting thesis. He argues that the COVID-19 crisis first leads to a supply shock, which in turn creates a shock in demand. The author formulates the conclusion that the conducted monetary policy should be characterized as stimulating, not limiting the money supply and lending.

Wren-Lewis (2020) sees the social effect of the virus as the cause of the economic crisis of COVID-19, as it instils fear in the health of economic agents. This will have a subjective and psychological effect on consumption by reducing demand. In fact, the author points to demand as the root cause of the economic crisis. Of course, he does not ignore the shock of supply, arguing that if many businesses close, it would lead to a greater shock than the shock of demand. It is clear that the author considers different scenarios, but in all cases, the demand remains important in his theses, because he recommends that the government set up a fund to cover the cost of living of those affected by the virus. The author's logic leads to the rejection of conventional instruments of fiscal and monetary policy. However, it can be said that Wren-Lewis (2020) recommends direct government intervention, which is related to financial transfers, which is related to the conduct of fiscal policy and not to monetary policy.

Wyplosz (2020) examines the moral hazard that arises from measures taken by governments to increase their costs. Therefore, it proposes that the European Central Bank (ECB) guarantee the debts of governments, thus differentiating the moral hazard that would arise in a subsequent debt crisis. Also, according to the author, tackling the effects of the crisis requires coordinated action by EU member states.

Gopinath (2020) introduces three main negative shocks, which are realized as a consequence of the economic crisis caused by the coronavirus, namely: supply shock, demand shock and financial shock from increasing the risk of bad loans. The increase in the financial risk of toxic loans will have a negative effect on supply and demand. For this reason, the author proposes to take the following anti-crisis measures: direct remittances to households and subsidies to businesses, as well as tax relief. Special emphasis is placed on the credit policy pursued by the Central Bank, which must have a targeted credit policy towards small and medium-sized enterprises.

Blanchard (2020), looking at the policy pursued by Italy, which is highly fiscally discretionary, calls on the ECB to make final monetary transactions with the Italian government or to buy Italian government bonds, thus stimulating the Italian economy and protecting the euro area from the possibility of a debt crisis. According to him, at low-interest rates, the increase in Italian debt does not pose a moral risk. The developed thesis of Blanchard (2020) actually advocates a continuing expansionary fiscal policy, because the allocation of direct money or the purchase of government securities by the ECB from the

Italian government is in itself a stimulus to fiscal policy through monetary instruments. In other words, monetary policy plays a supporting role in the operation of fiscal policy.

Galí (2020) proposes to implement the strategy of "helicopter money", which means that the Central Bank makes direct transfers to the government at zero interest rates, which in practice means that the government has no debt to the Central Bank and transfers are gratuitous. This proposal by Galí is a consequence of his understanding that the government must pursue a discretionary fiscal policy, but not to create the conditions for a debt crisis and not to burden the taxpayers in a subsequent period.

Krugman (2020) sees conventional monetary policy as ineffective in tackling the economic crisis of the coronavirus because the world is in a liquidity trap and in response proposes that the government implement a continuing budget deficit to finance investments that will push private investments. Thus, the economic crisis will be overcome.

The analytical theoretical review of the main economic schools and the thesis developed by them on the anti-crisis macroeconomic policy in crisis conditions, as well as the review of the literature, including authors who study the anti-crisis macroeconomic policy in a specific economic crisis in COVID-19, lead to the conclusion that discretionary fiscal policy is at the heart of anti-crisis policy, and monetary policy should play a complementary role.

The aim of this study is to check whether in the case of the current anti-crisis macroeconomic policy in Bulgaria the scientific statements presented so far have confirmed or denied, that the more effective model for dealing with the crisis is based on fiscal policy, and monetary measures are ancillary.

3. Methodology and Features of the Research

The survey covers the period 2019-2020 on a quarterly basis. The main focus of the survey is on the four quarters of 2020. Data sources are the Bulgarian National Bank (BNB) and the National Statistical Institute (NSI). The two institutions work with common European methodologies in compiling statistics, which is a condition for homogeneity and allows them to be used simultaneously. The provision of the missing data for the second, third and fourth quarters of 2020 is realized through a "naïve" forecast of a time series or the so-called "extrapolation". After calculating the forecast values of the missing features of the dynamic sample, the impact and effects of fiscal policy and monetary measures on the business cycle, which is expressed in terms of GDP dynamics, are calculated.

The forecast can be expressed mathematically with the following expression (Brooks, 2014):

$$E\left(y_{t+1} \mid \Omega_t\right) = y_t \quad \text{, where} \tag{1}$$

E – product

Y_{t+1} – expected forecast value

$_{t+1}$ – future period

t – period

| – the whole available information

Ω_t – the whole time range

Equation (1) represents the extrapolation. It expresses the expected future value of the relevant time series, which is derived from the presented information from past values of the attribute in the statistical population, which covers all the dynamics for the entire time period for which information is available.

In the present study, the predicted values of the time series are sought, which allows the use of a linear regression model, through which the future values of the time series can be found.

The linear model takes the form of the conventional regression equation:

$\gamma = \alpha + \beta x$, where (2)

Y – dependent variable

α – available parameter

β – parameter of the equation

x – independent variable

To predict *y*, information must be extracted from the parameters of the equation. Equation (3) illustrates that the parameter α derives its value from the average values of the variables.

$$\alpha = \overline{Y} - \beta \overline{X} \tag{3}$$

Equation (4) also shows that the parameter β subtracts its values from the mean values of the variables. Therefore, the values of the variables Y and X in period t are known, as well as their mean values. From here it is now possible to conditionally predict the average value of the future value of *y*.

$$\beta = \frac{\sum (X - \overline{X})(Y - \overline{Y})}{\sum \left(X - \overline{X}\right)^2} \tag{4}$$

The effectiveness of fiscal policy is revealed through the multiplier. The multiplier derived by Keynes (1991) has the following mathematical form:

$$1 - \frac{1}{k} \tag{5}$$

The equation expresses the marginal propensity to consume, which is the basis of the investment multiplier, where k is the investment multiplier. Therefore, methodologically the main determinant that determines the efficiency of fiscal policy is the marginal propensity to consume, which in its original form is written with the following mathematical expression:

$\frac{dC_w}{dY_w}$, where (6)

C_w – consumption, expressed in units of wages

Y_w – income as units of wages

Δ – the change in consumption and income

The mathematical expressions (5) and (6) express the essence of the multiplier in the conditions of a closed economy. The increase in government expenditures, represented by investment and consumption, leads to an increase in total income.

The basic model of the multiplier can be described by the following mathematical equation:

$\mathrm{V}Y = 1 - \frac{1}{k} \times \mathrm{V}I$, where (7)

$\mathrm{V}Y$ – change in total income

$\mathrm{V}I$ – change in investments

$1 - \frac{1}{k}$ – the value of the multiplier

The basic logic and the derived equations from Keynes (1991) lead to the creation of different types of fiscal multipliers in theory and their use in practice. The expenditure multiplier, which shows what change in GDP the marginal change in government spending (8) and (9) will lead to. GDP can be written with the following equations (Spasov, 2008):

$M = \frac{1}{1 - MPC} = \frac{1}{MPS} = M_G$, therefore: (8)

$M_G \times \mathrm{V}G = \mathrm{V}Y$ (9)

M_G – government expenditure multiplier

MPC – marginal propensity to consume

MPS – marginal propensity to save

$\mathrm{V}Y$ – change in GDP

$\mathrm{V}G$ – change in government expenditure

To correspond to the real circumstances, the methodology of the study illustrates the multiplier in a proportional way of income taxation, as in Bulgaria the taxation of income of individuals and corporate income taxation of legal entities is proportional (equation 10).

$$M_t = \frac{1}{1 - MPC(1-t)}, \text{ where} \quad (10)$$

M_t – multiplier in a proportional way of taxation

t – proportional tax rate

Equation (11) visualizes the calculation of the aggregate marginal tax rate that has the greatest impact on income and consumption propensity.

$$T = IT + PIT + VAT \quad \text{, where} \quad (11)$$

T[3] – total marginal tax rate

IT – rate of corporate tax

PIT – rate of personal income tax

VAT – value added tax

Bulgaria's economy is small and open and this requires considering the marginal propensity to import, as imports are the variable that reflects the openness of the economy and affects the multiplier effect.

$$MPM = \frac{\mathrm{V}IM}{\mathrm{V}Y}, \text{ where} \quad (12)$$

MPM – marginal propensity to import

$\mathrm{V}IM$ – change in import

$\mathrm{V}Y$ – change in total income

From the derived equations so far we could derive the aggregate fiscal multiplier. Equation (13) is, in fact, the basic equation used in the empirical study and evaluation of the effectiveness of fiscal policy under COVID-19. Mathematically, this can be expressed by the following equation (Zlatinov, 2016):

$$\mathrm{V}Y^f = \frac{1}{1 - MPC \times (1 - ta_{t-1}) + MPM} \times \mathrm{V}G_{t-1} \quad (13)$$

One expresses the mathematical function by equation (14), which shows that the increase in total income is a function of the increase in money in circulation. The contribution of monetary measures to GDP dynamics is also expressed.

[3] Social and health insurance are not included.

$$\mathrm{V}Y = f(\mathrm{V}M * V)$$, where (14)

M – money in circulation

V – velocity of money circulation

Y – quantity of products

Developing the equation, we obtain the following expression:

$$\mathrm{V}Y = \frac{\mathrm{V}M}{\mathrm{V}bl} * V$$, where (15)

$\mathrm{V}M$ – money aggregate M1

$\mathrm{V}bl$ – change of interest-free bank loans up to BGN 1,500 and credit for small and medium-sized enterprises, which is divided into the following variables:

$$\mathrm{V}bl = \mathrm{V}BLSMB + \mathrm{V}IFBL$$, where (16)

$\mathrm{V}BLSMB$ – the change in loans to small and medium-sized enterprises

$\mathrm{V}IFBL$ – change of interest-free bank loans up to BGN 1,500.

In fact, equation (15) expresses the marginal increase in money in circulation as a result of the monetary measures taken, which allows a more accurate assessment of the monetary measures introduced.

4. Results and discussion

This section presents the results of the performed mathematical operations and accordingly analyzes the effects of the fiscal policy and monetary measures on the created recession shock from COVD-19 in Bulgaria by GDP.

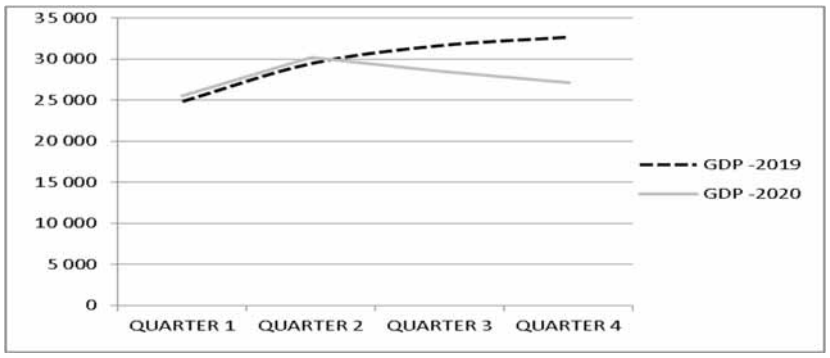
As it can be seen from Figure 1, the economic dynamics in 2020 registered anticipating rates in the first quarter, compared to 2019. These outpacing dynamics continue as an inertial force and sometime in late April 2020 the trend reversed sharply. The reason for this sharp asymmetric reversal of the trend of dynamics of the Bulgarian economy is the political decision to declare a state of emergency in Bulgaria on 13.03.2020, which lasted until 13.05.2020, which is actually caused by COVID-19. In this situation, the fiscal policy is fundamental in order to be able to control and mitigate the economic downturn, which began to manifest itself in full force in the third and fourth quarters of 2020.

The dynamics of aggregate consumption clearly expresses that if adequate fiscal policy and monetary measures are not implemented, by the end of 2020, aggregate demand will decrease compared to the same period of 2019. This trend would be extremely negative for the

Bulgarian socio-economic system, as the economy is expected to enter the real phase of recession by the end of 2020.

Figure 1

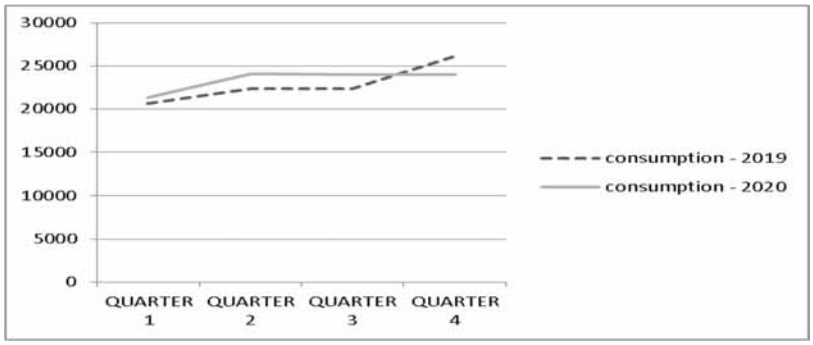
GDP*, Final consumption method at current prices, 2019-2020



** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
Source: NSI, Author's calculations

Figure 2

Aggregate consumption, 2019-2020



** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
Source: NSI, Author's calculations

4.1. The effects of the fiscal policy on the dynamics of the Bulgarian economy in terms of COVD-19

The effects of the fiscal policy on the recession gap created by COVID-19 will be seen as directly corresponding to the effect of the 'tax holiday' as well as to the effect of the tax holiday, as the period covering the "tax holiday[4]" is in fact during the second quarter 2020.

4 "Until June 30, the term for payment of the final social security contributions for compulsory social and health insurance of self-insured persons who work as sole traders and farmers who have chosen to

The tax preference will, in fact, introduce for a period of time a specific structural change in the equation used, which will show the effectiveness of fiscal policy and its contribution to GDP at zero tax burden. And the other fiscal measure, which comes down to financial assistance to businesses with measure 60/40[5] does not require a specific modification of the equation that calculates the contribution of fiscal policy to GDP.

As the data in Table 1 show, the marginal propensity to consume for all quarters of 2020 is higher than the marginal propensity to consume in 2019. This is an argument that leads to the forecast that the implementation of a fiscal counter-cyclical policy would be significantly effective. At the end of 2020, the marginal propensity to consume having a tendency to increase, reaching values of 0.88, which significantly exceed the values of the marginal propensity to consume in the last quarter of 2019. Also, the forecast data for 2020 express a growing marginal propensity to consumption in the fourth quarter of 2020, compared to the first quarter of 2020. The rising marginal propensity to consume, combined with the declining marginal propensity to import, is an indication that consumption is more focused on domestically produced goods and services than on imported goods and services, which means that the fiscal multiplier will reproduce more efficiently. Of course, it should be clarified here that the consumption in Bulgaria is very dependent on imports and therefore maintaining the average marginal propensity to import to the level of 2019 should be considered as a positive effect, because other things being equal, it will increase the contribution of fiscal policy to dealing with negative economic processes.

Table 1

Coefficients of the degree of efficiency of the incurred government expenditures

Coefficient Period	Marginal propensity to consume		Marginal propensity to import	
	2019	*2020*	*2019*	*2020*
Q1	0.83	0.84	0.68	0.65
Q2	0.76	0.80	0.61	0.58
Q3	0.71	0.84	0.58	0.59
Q4	0.80	0.88	0.56	0.61

** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
Source: NSI, Author's calculations

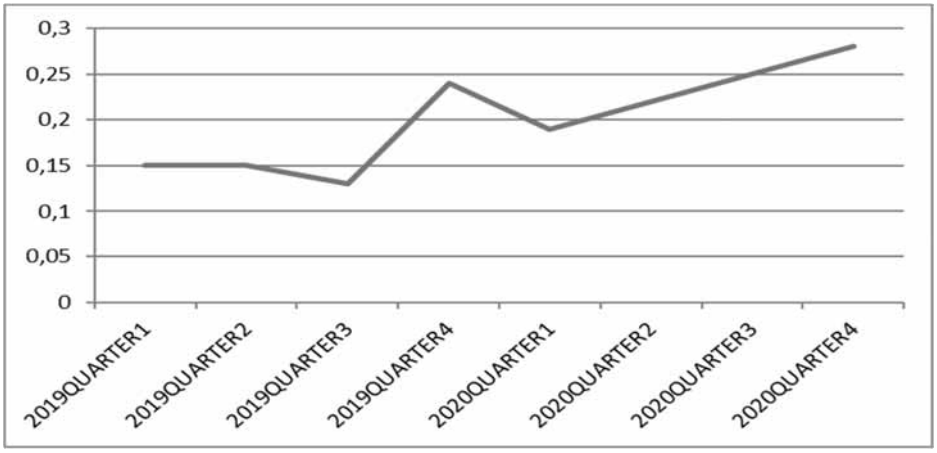
be taxed under Art. 26 of the Personal Income Tax Act / PITA /, as well as for sole proprietors who are subject to patent tax under the Local Taxes and Fees Act. Until June 30, the deadline for declaring and paying corporate tax is extended / Art. 92 and 93 of the Corporate Income Tax Act /, the tax on expenses, the tax on the revenues of budgetary enterprises, the tax on the revenues from ancillary and ancillary activities within the meaning of the Gambling Act, as well as the tax on the operation of ships. "(https://nra.bg/).

[5] „The 60/40 measure is a short-term tool for urgent business support to maintain employment, but also to guarantee the income of employees. The amount of compensation will be 60% of the insurance income for the month of January 2020 and of the due contributions of the employer for the same month for each employee for whom the regime of suspension of work has been applied or part-time work has been established. In the event of termination of employment, employers who have received compensation should pay the full amount of remuneration to the persons and the due social security contributions for the respective month. In case of part-time work, the employer pays the full amount of the remuneration, defined as for full-time work, and the due insurance contributions for the respective month." (https://coronavirus.bg/bg/114).

An important trend in the structure of marginal propensity to consume (Figure 3) is that the marginal propensity to consume local goods and services increases, which mechanically leads to greater efficiency of budgetary incentives. It is extremely important that the projected increase in the marginal propensity to consume goods and services of national production begins to increase and maintains this trend in 2020, certainly, of a forecast nature. It is in the year when the Bulgarian economy will feel the economic recession in full force.

Figure 3

Marginal propensity to consume local goods and services



** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
Source: NSI, Author's calculations

Fiscal policy in the context of economic recession in 2020 registered a much larger contribution to economic growth than in 2019 (Table 2). Only the second quarter, when there is a "tax holiday", registered a lower contribution rate to GDP compared to the second quarter of 2019. This result fully corresponds to the theory that the crisis multiplier is more effective. The impact of the multiplier is almost timely in 2020, but its full effect is realized in the third quarter and then there is a decrease in its strength, which fully corresponds to the short-term stabilization and anti-crisis effect that fiscal policy reproduces. It is also logical to multiply the multiplier effect in the third quarter of 2020, given that the crisis will start to develop in mid-March 2020. However, the short-term effect of the conducted fiscal policy is characterized by a certain stability, because although the multiplier reduces its impact, the multiplication and the cumulative process of positive impulses do not subside immediately, but continue to affect economic activity.

Table 2

Contribution of fiscal policy to GDP

Coefficient Period	Contribution of fiscal policy to GDP without tax preferences		Contribution of fiscal policy to GDP with tax preferences	
	2019	*2020*	*2019*	*2020*
Q1	0.54	0.68		
Q2	1.63			0.80
Q3	0.28	3.22		
Q4	0.34	0.86		

** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
Source: NSI, Author's calculations

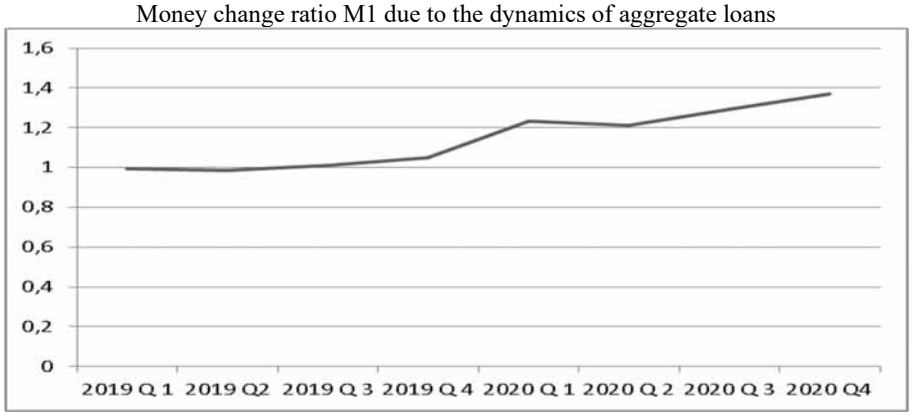
The derived empirical results emphasize that the cost multiplier has a much stronger impact than the tax multiplier. The obtained results substantiate the thesis that the effect of the tax measures is manifested with a greater lag delay, as well as that the postponement of the tax payments cannot give an immediate positive effect on the economic dynamics. It is important to note that, in fact, the personal income tax, which starts to be declared and paid from the beginning of the year until April 30, is not reduced, nor is this period extended. It is this detail that turns out to be the characteristic that reduces and slows down the influence of the tax multiplier in the aggregate multiplication, which is the goal of the anti-crisis fiscal policy. It should be noted here, however, that the synthesis of the cost multiplier with the tax multiplier from a theoretical and practical point of view is an extremely correct anti-crisis strategy, which, however, depends on some of their characteristics. The expenditure multiplier quantitatively proves its effectiveness, but depends to a large extent on the size and specific objectives and transfer mechanism of the conducted fiscal policy. This logic also applies to the tax multiplier, which also depends on some of its structural characteristics, such as whether it will be based on preferences affecting direct or indirect taxes or both types of taxes and which taxes and tax rates will be used as regulators, which will form and direct the action of the tax multiplier. In summary, it can be said that fiscal policy will implement in the short term positive regulation of the trade cycle and will provoke the reversal of the phase of the cycle from crisis to recovery.

4.2. The effects of monetary measures on the dynamics of the Bulgarian economy in terms of COVD-19

Since the fiscal policy has been considered so far, this part of the study will consider the effects of monetary measures on the Bulgarian economy. In 2020, the ratio of money in circulation, expressed through the money aggregate M1, registered an indicative increase compared to the four quarters of 2019, due to the change in aggregate lending. This finding proves that this monetary instrument is significantly efficient in terms of the money supply.

Figure 4

Money change ratio M1 due to the dynamics of aggregate loans



** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
Source: BNB, Author's calculations

The credit monetary measure is characterized by very low contribution coefficients to GDP dynamics (Table 3). The coefficients are especially low in 2020 and their impact is insignificant and in certain lag values deterrent. Therefore, the direct impact of loans on GDP cannot be considered as highly stimulating. This is because the credit policy undertaken delays the repayment of loans, but does not eliminate the obligation, and in case of uncertainty with an unclear deadline, economic agents, whether households or companies, do not show much inclination to assume future debt (which they do not know when and whether will be able to pay off). This is precisely the reason why the direct impact of lending on GDP is insignificant and even restraining. According to the data from the Bulgarian Development Bank as of July 20, 2020, only 100 companies have taken advantage of these credit opportunities and 12,290 individuals, which is a small percentage of the unemployed and companies in need of financial assistance. It is clear that loans indirectly affect GDP through production and consumption, increasing the money supply, but not by being used by unemployed individuals and small and medium-sized enterprises, but by larger and more powerful companies that use loans as leverage to maintain their activities and workers during the crisis. It is clear that loans have an anti-crisis effect on the economic cycle through the transmission variable M1 and through their interaction with other factors that increase money in circulation.

The contribution rate of monetary measures to GDP (Table 4) in 2020 remains high in different quarters, with a value of about one. Monetary measures induce a positive momentum in economic dynamics, and this momentum will cause counter-cyclical processes. It is noteworthy that the contribution rate of monetary measures to GDP is high in 2019, as in the fourth quarter of 2020 is lower than in the fourth quarter of 2019. This shows that the moment when the Bulgarian economy has entered the peak of the economic crisis, the monetary measures will begin to be characterized by declining efficiency. In other words, lending will lose its effectiveness in interacting with other components of the money supply.

In summary, money in circulation as an expression of aggregate monetary measures contributes to regulating the economic cycle by reproducing counter-cyclical effects. Monetary measures, therefore, play an important role in counter-cyclical macroeconomic policy.

Table 3

Credit policy contribution to GDP*

Period	2019**	2020
Q1		-0,00052
Q2	0,01181	0,021739
Q3	0,000807	-0,00031
Q4	0,000316	-0,00033

** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
*** Data for 2019 are available from the second quarter.*
Source: BNB, Author's calculations

Table 4

Monetary measures contribution to GDP *

Period	2019**	2020
Q1		1,00
Q2	0,85	0,97
Q3	1,00	1,14
Q4	1,02	0,99

Source: BNB, Author's calculations
** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
*** Data for 2019 are available from the second quarter.*

4.3. Results of the study and the anti-crisis macroeconomic policy to overcome the socio-economic consequences of COVID-19

From the considerations made so far, it is clear that both fiscal policy and monetary measures and their coordination and structuring have a constructive and decisive influence on the conducted anti-crisis macroeconomic policy. Bulgaria is a country which operates in currency board, which means that a full counter-cyclical monetary policy cannot be applied. Therefore, the basis of the counter-cyclical macroeconomic policy must be built on the basis of expansionary fiscal policy, and monetary measures must be complementary. Thus argued, the main thesis requires both theoretical and quantitative evidence. Quantitative evidence allows a comparative analysis to be made between the contribution of fiscal policy and monetary measures to GDP dynamics and its cyclical development.

As it can be seen from Table 5, on a quarterly basis, monetary measures register higher values than fiscal policy. In the third quarter alone, the contribution of fiscal policy to GDP was significantly higher than the contribution of monetary measures to GDP in the same quarter. However, considered on an annual basis as a cumulative contribution and an arithmetic mean contribution, fiscal policy registered higher values. The coefficient of the total contribution of fiscal policy to GDP for 2020 is 5.56, while the coefficient of the total contribution of the

monetary measures to GDP in 2020 is 3.99. The coefficient of the arithmetic means contribution of the fiscal policy to GDP in 2020 has a projected value of 1.39, and the coefficient of arithmetic mean contribution of the monetary measures to GDP in 2020 is 1. Therefore, the fiscal policy has a larger contribution in GDP than the monetary measures. It follows that the interaction of fiscal and monetary measures is decisive for the anti-crisis macroeconomic policy, but the main instrument is the fiscal policy, and the complementary instrument is the monetary measures.

However, the quarterly values of the ratios of monetary measures to fiscal policy, however, raise the question of why, considered on a quarterly basis, monetary measures have predominantly higher values than the ratios of the contribution of the fiscal policy to GDP. The answer lies in the following logic. First, more of the financial anti-crisis macroeconomic package goes to monetary measures. Second, monetary measures are chosen as the basis for anti-crisis macroeconomic policy, through the increase in credit liabilities to fiscal measures. Third, the aggregate fiscal multiplier needs time to be activated because it relies on activity from companies applying for the 60/40 measure and the unemployed to register as unemployed, and the principle of operation of the fiscal multiplier in order to be effective is associated with active consumption and targeted investment. Also, the application of fiscal measures does not correspond to the mechanism of the aggregate fiscal multiplier.

Table 5

Comparison of the contribution of fiscal policy and monetary measures to GDP* in Bulgaria – projected trends

Period Coefficient	2020Q1	2020Q2	2020Q3	2020Q4	Aggregate contribution for 2020	Arithmetic mean contribution for 2020
Contribution of fiscal policy to GDP	0,68	0,80	3,22	0,86	5,56	1,39
Contribution of monetary measures to GDP	0,97	1,14	0,99	0,88	3,99	1,00

** GDP for the second, third and fourth quarters of 2020 are projected by extrapolation.*
Source: NSI, BNB, Author's calculations

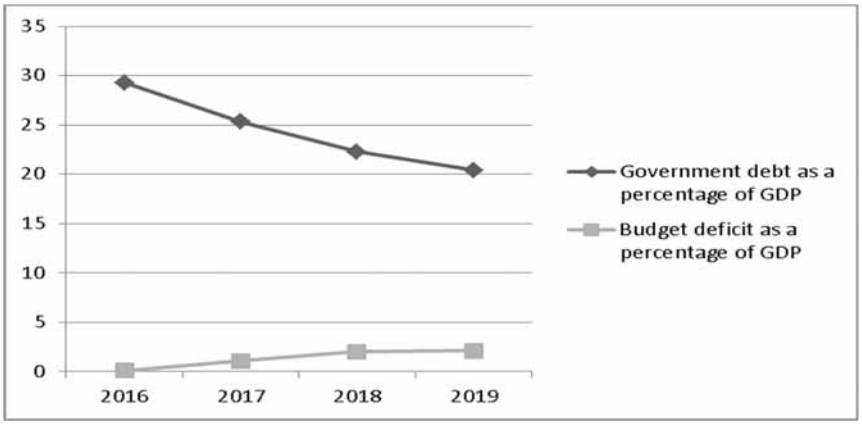
From the results, presented in this study, it is clear that in the basis of the anti-crisis macroeconomic policy in Bulgaria is used monetary measures and not fiscal policy. But the anti-crisis macroeconomic policy constructed on the basis of monetary measures and complementary fiscal policy could not realize potential effectiveness in overcoming the negative cyclical trends that have arisen and are developing in the dynamics of the Bulgarian economy. For this reason, counter-cyclical macroeconomic policy should be restructured as fiscal policy as the main one, and monetary measures should be complementary. The specific fiscal policy should be characterized by a much higher amount of realized government expenditures, as well as to cover 100% of the financial needs of the economic agents. The monetary measures that need to be reformed are related to the fact that loans up to BGN 1,500 start to be repaid at the moment when the borrower has started working and his salary allows

him to repay this loan from half of his savings. Thus constructed and regulated, the anti-crisis policy would lead to the necessary economic efficiency to overcome the economic crisis and the social consequences of COVID-19.

The values of the two public indicators – government debt and budget deficit (Figure 5), which are included in the Maastricht convergence criteria in the previous period 2016-2019, are characterized by much lower values than allowed. It is this trend in the development of public finances that allows and argues once again that fiscal policy and the action of the aggregate fiscal multiplier are the basis of a successful anti-crisis policy in the conditions of COVID-19. The arguments also apply with the same force and support the thesis that the size of the government expenditures, which are the basis for the effective and efficient operation of the fiscal multiplier, must be increased.

Figure 5

Maastricht convergence criteria in Bulgaria



Source: NSI, Author's calculations

Conclusion

The COVID-19 pandemic has placed the Bulgarian economy in a complex socio-economic situation, which requires the implementation of anti-crisis macroeconomic policy. The structuring of this anti-crisis macroeconomic policy must be based on the cause of the economic downturn and the effectiveness of fiscal policy and monetary measures. The cause of the negative economic shock is the policy taken, and the circumstance that provokes the political action is the pandemic of COVID-19. Therefore, the cause of the economic downturn must correspond to the structure of the anti-crisis macroeconomic policy. It follows that the basis of the macroeconomic policy must be fiscal policy, monetary networks must be a complementary anti-crisis tool. This logic is also argued by the fact that Bulgaria is on a currency board, as well as by the mathematical calculations that lead to the results that the aggregate and arithmetic mean the impact of fiscal policy is stronger than the impact of monetary measures on GDP. And the credit instrument itself has a negligible and rather

restraining effect on the positive dynamics of GDP. The main conclusion that can be drawn is that fiscal policy is more effective than monetary measures in overcoming the economic and social consequences of COVID-19. These conclusions fully confirm the scientific statements exposed in the literature review.

The conducted research on the effect of fiscal policy and monetary measures in the conditions of COVID-19 requires future development and use of an econometric apparatus, which is currently inapplicable, as statistics are very scarce. There are also questions related to the application of specific fiscal and monetary instruments, such as where exactly to invest government expenditures, the rate of which the tax is better to differentiate, whether the required minimum reserves (MRLs) should be used as a tool, etc. All these questions, as well as many others that arise, have not found a place in the present work, but this gives rise to much future research.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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FISCAL MULTIPLIERS IN BULGARIA AND CENTRAL AND EASTERN EUROPE COUNTRIES

The importance and possibilities of fiscal policy have been neglected by academics and politicians for decades after the macroeconomic revolution of 1970-1980. However, the Great Recession, the crisis in the European Union and the prolonged recession in many European economies have once again put fiscal policy, and especially its stabilizing role, at the centre of expert and public discussions. In countries with a high share of the public sector in the economy and whose monetary policy is constrained by various structural features of the economy and the financial system, the role of fiscal policy is particularly important, and it is a key lever of economic policy. These features characterize most countries in Central and Eastern Europe (CEE), which makes this region convenient for analyzing the effectiveness of the fiscal policy. The study empirically establishes the effects of shocks in budget expenditures and tax revenues on GDP in Bulgaria, Estonia and Lithuania for the period 1995-2018, applying the vector autoregression technique known as the Vector Autoregressive Model (VAR) as well as other, non-econometric valuation methods. Key factors that affect the dynamics in the size of fiscal multipliers are presented numerically and graphically.
JEL: C32; E01; E62

Introduction

One of the most important issues in formulating macroeconomic policy is the size of fiscal multipliers. The direction in which fiscal policy will take – towards expansion or restriction – largely depends on the magnitude of what is traditionally called a "fiscal multiplier". Although different researchers often have different content in this concept, the correct calculation of the fiscal multiplier is extremely important, especially in the downward phase of the business cycle, when it is crucial to accurately assess the short-term effects of fiscal consolidation decisions.

The macroeconomic effects of fiscal policy are of great importance for both economic theory and economic practice, and much research has been devoted to this issue. Despite the abundance of publications on the subject, there is no theoretical consensus on the size and even the impact of fiscal multipliers. This is largely due to the peculiarities of neoclassical and Keynesian macroeconomic models, which predict various changes in personal

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consumption, employment and real incomes after a fiscal shock. Numerous studies published since the onset of the global crisis do not strongly support any of the theoretical models.

The object of the present study are the fiscal multipliers presented by a budget expenditure multiplier and a tax multiplier in Bulgaria, Estonia and Lithuania.

The subject of the study is the size, dynamics and strength of the impact of fiscal multipliers (multiplier of budget expenditures and tax multiplier) in periods of recession and expansion.

The main **purpose** of the study is to contribute to the analysis of the macroeconomic impacts of fiscal policy by providing empirical calculations of the size of fiscal multipliers (budget expenditure multiplier and tax multiplier) and their impact on macroeconomic activity (economic growth) in Bulgaria and to compare the results with the economies of Estonia and Lithuania for the period 01.01.1995 – 31.12.2018, reflecting the impact of important economic events for Bulgaria such as the introduction of a currency board in 1997 and the global financial crisis of 2008. Bulgaria is an interesting example because, in addition to being a small open economy, it also faces the challenge of how to promote economic growth under a currency board arrangement when traditional monetary policy instruments are not available. Estonia and Lithuania are also small open economies, which in their economic development passed through the conditions of a currency board, later gaining membership in the euro area during the study period.

To achieve this goal, the following **tasks** are required:

- Presentation of the definitions for the fiscal multipliers, their fundamental definition and specific features, clarification of the consequences of their application;
- The study of the impact of fiscal multipliers in the countries of Central and Eastern Europe, as well as highlighting the common features between them;
- Establishing and evaluating the possibilities for application of VAR models in relation to the studied data, based on pre-set criteria; analysis of the results achieved in the application of the used models;
- Systematization of empirical evidence on the size and impact of fiscal multipliers (budget expenditure multiplier and tax multiplier) for Bulgaria, Estonia and Lithuania. Drawing conclusions about:
    - the object and the subject of research;
    - the applicability of VAR models to the studied variables (budget expenditures, tax revenues (net) and GDP);
    - the impact of fiscal multipliers on macroeconomic activity.

We defend **the research thesis** that there is a global tendency to reduce the size of fiscal multipliers, which has serious implications for economic policy. The effectiveness of fiscal stimulus is becoming increasingly uncertain. Moreover, there are real fears that multipliers will become even lower due to the global trend of increasing the debt burden. In addition, we argue that the strength of the impact of fiscal multipliers is significantly greater in periods of recession than in periods of expansion, the increase in household loans as a percentage of

GDP leads to lower multipliers; the level of public indebtedness has an inverse proportion to the size of the fiscal multiplier, and the openness of the economy implies lower fiscal multipliers.

1. Fiscal multipliers – an important element of economic policy

1.1. Definition of "fiscal multiplier"

Fiscal multipliers measure the short-term impact of discretionary fiscal policy on output. The fiscal multiplier is measured by the ratio of the change in GDP or other measure of production to the exogenous change in the fiscal variable that caused the effect on output. For example, the expenditure multiplier represents the change in GDP due to a discretionary increase in government spending (fiscal shock), and the tax multiplier represents the change in GDP due to a discretionary increase in taxes. Thus, if the fiscal multiplier is larger or smaller than one, the fiscal expansion will collect or displace some component of aggregate demand and produce output accordingly. Depending on the fiscal variable selected for the assessment, the multiplier can be defined as a government consumption multiplier, a government investment multiplier, a tax multiplier (which can be further broken down into a direct or indirect tax multiplier), a net tax multiplier, etc.

The idea of the so-called "multiplier" was first introduced by Kahn (1931) in his article justifying the world economic crisis. He presented the concept as a coefficient determining the growth of employment of each unit of investment (government expenditure), directed to a number of public activities. Later, Keynes (1948) modified the idea of an "employment multiplier" into an "income multiplier", which he presented as a coefficient showing the quantitative ratio of the growth of national income to the growth of the investment.

Fiscal multipliers can be measured in different ways. In general, they are defined as the ratio of the marginal change in aggregate income (ΔY) to the marginal change in government expenditure or tax revenue (ΔG or ΔT) (Spilimbergo et al., 2009). Thus, the fiscal multiplier measures the effect of BGN 1 change in government expenditures or BGN 1 change in tax revenues on the level of gross domestic product (GDP).

Fiscal multipliers are important elements that must be taken into account when designing fiscal policy. Underestimating the role of multipliers can lead countries to set unattainable fiscal targets, as well as miscalculate the amount of adjustment needed to limit the size of their government debt (Eyraud et al., 2013). This may affect the reliability of fiscal consolidation programs. In addition, the authorities can tighten measures in an attempt to bring fiscal variables (balance, debt) as close as possible to the goals officially set in government programs, undermining citizens' trust, and creating a vicious circle of slow economic growth, deflation and greater subsequent tightening.

According to Ignatov (2016) the result is at the same time, in addition to the losses of GDP experienced in the short term, but also a possible negative effect in the long term. These possible effects of the economic downturn emphasize the importance of the labour market as a transmission channel for transmitting the effects of fiscal policy. Therefore, the lack of sufficient fiscal support during a crisis and high multipliers will further suppress economic

activity, and the GDP trend, despite widespread views, may be affected by a deep and prolonged recession (DeLong et al., 2012). Dell'Erba et al. (2014) support with evidence the negative medium-term effect of fiscal consolidation on the unemployment rate and employment.

According to Batini et al. (2014) better estimation and use of multipliers can play a key role in ensuring the accuracy of macroeconomic forecasts. Many countries experienced extremely dramatic changes in their fiscal stance during the last financial crisis of 2008, moving from stimulus to consolidation. In this context of large-scale fiscal action, GDP growth can be driven primarily by fiscal policy. It is, therefore, important to accurately measure the relationship between these two variables in order to plan and forecast the effect of fiscal policy actions. In their study, Blanchard et al. (2013) found that underestimation of fiscal multipliers at the beginning of the crisis contributed significantly to errors in growth forecasting.

The actions of the monetary authorities also contribute significantly to the effectiveness of fiscal measures. The coordinated use of fiscal and monetary policy could significantly predetermine the rapid coping with economic difficulties, and the lack of coordination may lead to pro-cyclical effects on the economy (Zlatinov, 2016). As monetary accommodation increases, multipliers tend to increase due to the indirect impact of fiscal policy on real interest rates. Coenen et al. (2012) summarize that fiscal expansion is most effective in the medium term and in combination with monetary policy because it manages to neutralize the wealth effect.

As Zubairy (2010) argues, monetary policy is crucial in determining interest rate movements which play a role in how the economy responds to fiscal shocks. The higher nominal interest rate increases the expenditure multiplier and the corporate income tax multiplier, while the labour income tax multiplier decreases. The cases of the first two multipliers can be explained by the fact that the higher value of the nominal interest rate means that monetary policy-makers increase their real interest rates more slowly, increasing the expansionist effect of fiscal measures. Although inflation has a limited response to fiscal shock, if it increases, the greatest effect is on the negative income tax multiplier. The reduction of the labour income tax leads to an increase in the supply of labour by households, generating a decrease in the amount of wages, lower marginal costs, which leads to a decrease in inflation.

Also, fiscal expansions would be stronger if monetary conditions were more adaptable, i.e., if the nominal interest rate does not increase after fiscal expansion (does not generate crowding out investment and consumption); if the exchange rate is fixed; and if the fiscal position of the particular country after the stimulus has been applied is stable, which will reduce the effect that higher debt has on interest rates (Spilimbergo et al., 2009). In the particular case, when the nominal interest rate reaches zero lower bound, the multipliers increase significantly, which according to Woodford (2010) and Christiano (2011) is due to the full monetary accommodation of the positive fiscal shock. These considerations highlight the question of the role and importance of coordination between fiscal and monetary policy in restoring sound public finances. For Cottarelli (2012), as long as fiscal adjustment continues, monetary policy must support aggregate demand.

Christiano (2009) argue that when monetary policy is constrained by virtually zero nominal interest rates (which in real inflation conditions make real interest rates constant), even if there is no high relative share of households with liquidity constraints, the fiscal multiplier can be significantly above one. Freedman et al. (2009) also confirm that with sufficient monetary policy support, the fiscal multiplier (depending on the specific instrument) can be close to 2 units and even higher. They also show that in the conditions of zero nominal interest rates, the inclusion of a financial accelerator, defined in Bernanke et al. (1999), strengthens the fiscal multiplier and makes it more sustainable over time.

In his report on the analysis of the coordination of fiscal and monetary policy for stabilization purposes, Zlatinov (2014) concludes that the financial and economic crisis of 2008 unequivocally showed that even in a favourable economic environment, the parallel reporting of the effects and possibilities of both macroeconomic policies (fiscal and monetary), is the most appropriate approach for conducting macroeconomic policy, in which the presence of sufficient buffers and a real non-dogmatic idea of the possibilities of stabilization policy allows to quickly overcome crisis processes. According to him, the main function of fiscal policy is to stabilize the economy in the short term, while maintaining economic equilibrium is within the capabilities of monetary policy and such coordination of the two macroeconomic policies would lead to their common goal of maintaining sustainable economic growth.

Despite the expected benefits of their implementation, in practice, fiscal multipliers are not widely used by economists in drawing up budget programs. The main reason for this is that their calculation is difficult and misleading. In particular, it is difficult to isolate the direct impact of fiscal measures on GDP due to the two-way links between these variables. Costs and taxes usually respond automatically to the business cycle through the so-called "automatic stabilizers". They also respond to the cycle in a discretionary manner; for example, countercyclical policies can raise tax rates and reduce costs when the gap between actual and potential gross domestic product increases. Researchers have tried to solve this problem by focusing on the subset of exogenous fiscal shocks[2]. However, according to Batini et al., (2014), there is no generally agreed methodology for identifying such shocks or for extracting the exogenous component from the observed fiscal outcomes.

1.1 Determinants of fiscal multipliers

According to Batini et al. (2014), two types of determinants of multipliers have been identified in the scientific literature: 1) structural characteristics of the country that influence the reaction of the economy to fiscal shocks in “normal time” and 2) *conjunctural* (temporary factors), under the influence of which the multipliers deviate from the “normal” levels.

[2] In the economic literature, the term 'exogenous shock' refers to a change in costs or revenues that is not caused by the macroeconomic environment.

1.1.1 Structural characteristics[3]

Some structural features influence the economy's response to fiscal shocks in "normal" times. Empirical estimates of fiscal multipliers vary widely, although the increasing effect of structural factors on multipliers is largely unknown. The main structural features generally include:

The openness of the economy. Countries with a lower propensity to import (i.e., large countries and/or countries that are only partially open to trade) tend to have higher fiscal multipliers because the outflow of demand through imports is less pronounced (Barrell et al., 2012; Ilzetzki, 2013; IMF, 2008), while in more open economies the multipliers are lower and even negative for highly open economies, such as the Bulgarian one (Yotzov, 2018). In support of these results Ilzetzki (2011), Corsetti et al. (2012) point out that the high degree of openness of the economy has a declining effect on the value of the multiplier, as some of the effects of the fiscal shock flow abroad through trade flows.

Degree of economic development. According to the results of some recent studies (Ilzetzki, 2013), the multipliers of direct impact in developing countries have negative values, while in developed countries, they generally have positive values. The same conclusions were drawn for cumulative multipliers. In their study, Karagyozova-Markova et al. (2013) found that the degree of development of the financial markets in the country may also affect the size of fiscal multipliers. Limited credit availability would lead to a higher share of liquidity-constrained households and companies that would spend the additional income associated with the fiscal stimulus to increase their consumption or cover their investment needs.

Rigidity of the labour market. Countries with more rigid labour markets (i.e., stronger labour unions and/or stronger labour market regulation) have larger fiscal multipliers because such rigidity implies reduced wage flexibility, as hard wages tend to increase the response of aggregate production to shocks in aggregate demand (Cole et al., 2004; Gorodnichenko et al., 2012).

The size of the automatic stabilizers. According to Ignatov, (2016), automatic stabilizers also have a relation to the multiplier, because they limit its value. According to him, this fact is not irrelevant for the government's intentions to strengthen fiscal sustainability. With a fiscal contraction of 1% of GDP, the actual improvement in the budget balance is reduced by a value that directly depends on the size of the automatic stabilizers (as well as the fiscal multiplier), which increases social transfers and reduce tax revenues. Larger automatic stabilizers reduce fiscal multipliers because the automatic response to transfers and taxes mechanically compensates for some of the initial fiscal shocks, thus reducing its effect on GDP (Dolls et al., 2012).

The exchange rate regime, and in particular the degree of exchange rate flexibility, is an important determinant of the size of the multipliers. Countries with flexible exchange rate regimes usually have smaller multipliers because exchange rate movements can offset the impact of discretionary fiscal policy on economics (Born et al., 2013; Ilzetzki, 2013). And

[3] In the context of the present study, "structural" refers to characteristics that are inherent in the way the economy operates over longer periods of time.

vice versa, fixed (or predetermined) exchange rate economies have long-term multipliers that are greater than one, while in floating-rate economies, multipliers (both impact and long-term) have negative values. According to Yotzov (2018), the differences in the multipliers in countries with different exchange rate regimes are determined by the degree of adjustment of monetary policy to fiscal shocks. The author argues that the declining value of the fiscal multiplier is an unfavourable trend, as in the conditions of a currency board fiscal policy is the only tool for influencing economic processes. This brings to the fore the question of the efficiency of public spending, as it is impossible and economically impractical to seek an impact on macroeconomic variables only with their continuous growth.

The size of government debt. Excessively high or rapidly rising levels of government debt can negatively affect the effectiveness of fiscal policy to stimulate economic production, as demonstrated by Kirchner et al. (2010) and Nickel et al. (2013). In his study, Yotzov (2018) shows that in periods when the debt exceeds 60% of GDP, the impact multiplier is close to zero and has negative values in the longer-term horizon. Higher debt levels are associated with low and even negative multiplier values.

Persistence of government activity. This factor is directly related to the size of the multipliers. For Ignatov (2016) harder and more persistent fiscal policy is associated with lower multipliers and reduces output in the long run, which is explained by the large increase in the net present value of taxes and the negative effect of wealth, which pushes out private costs.

Government expenditure management and revenue administration. Multipliers are expected to be smaller when tax collection difficulties and cost inefficiencies limit the impact of fiscal policy on output.[4]

1.1.2 Conjunctural factors

Conjunctural (temporary) factors tend to increase or decrease the multipliers from their "normal" level[5]. Two conjunctural factors have been identified in the modern scientific literature:

The state of the business cycle. In their study, Jorda et al. (2013) demonstrated that fiscal multipliers are usually larger in a recession than in an expansion. According to Batini et al. (2014) one stimulus is less effective in expansion, as at its full capacity the increase in public demand pushes out private demand, leaving production unchanged (with higher prices). Conversely, in a recession, multipliers have a stronger effect because supply contraction is asymmetric. While the rise of fiscal policy is limited by the nonelastic supply of resources (and ultimately weakens when the economy reaches its maximum production capacity at full employment), this limitation does not exist when there is stagnation in the economy, but additional resources, provided by the government have a more direct impact on production. Against this background, the study by Corsetti et al. (2012) stands out in support of the claim that an unexpected positive cost shock is significantly more effective in times of crisis than

[4] This argument suggests that fiscal multipliers measure the effect of planned fiscal measures on output rather than the effect of actual changes in revenues or expenditures.
[5] "Conjunctural" refers to a series of temporary, non-structural circumstances.

in a boom. On the other hand, according to Ignatov (2016) the economic cycle has a relatively small contribution to the formation of the multiplier estimate, but it is still present and in sharp declines, the probability of playing a more important role is very high.

Degree of monetary adjustment to fiscal shocks. Expansionary monetary policy and lower interest rates may limit the impact of fiscal contractions on demand. In contrast, multipliers can potentially be larger when the use and/or influence of monetary policy is disrupted – as is the case with zero interest rates (Erceg et al. (2010); Woodford (2011). This effect is due to a number of factors. Erceg et al. (2010) show that the size of the fiscal shock has an impact at zero interest rates: the more discretionary spending increases, the shorter the economy will remain at zero interest rates and therefore at higher interest rates – low fiscal multiplier. Christiano (2011) found that in order for the multiplier to be significantly larger than in "normal times", it is crucial that the zero interest rate is still present when the shock cost "hits" the economy.

According to Batini et al. (2014) the composition of the fiscal adjustment can also be considered as a conjunctural factor influencing the size of the "overall" multiplier.

1.2 Fiscal multipliers in the countries of Central and Eastern Europe as a tool for manifesting the effects of fiscal policy – a literature review

At this point, we focus on the forecasts and research results of fiscal multipliers, specific to some of the countries of Central and Eastern Europe and especially to Bulgaria.

In his report, Mirdala (2009) analyzes the effects of fiscal policy shocks in six European emerging economies – the Czech Republic, Hungary, Poland, Slovakia, Bulgaria and Romania in the period 2000-2008, as well as the effect of discretionary changes in fiscal policy (related to increased government spending) and the role of automatic stabilizers (related to increased tax revenues), applying VAR model. The author concludes that after the shock in government spending, the output increases significantly only in Bulgaria, followed by the Czech Republic. Moderate but slight gradual increases are observed in Hungary and Slovakia. In Poland and Romania, the positive impact of the government spending shock on aggregate output is lagging behind. Focusing on the intensity with which the government spending shock affects output, quite different outcomes are observed among countries. In Hungary and Bulgaria, the government spending shock affected aggregate production only for a short period (three and four quarters, respectively) and then stopped. In the Czech Republic and Slovakia, the immediate positive effect of the budget expenditure shock accelerates real production for about three and four years, respectively, and then stopped operating. Despite an initial lag of a quarter, the total production in Poland reacted to the shock of budget expenditures, much like the scenario in Slovakia, with the overall effect of the shock coming to a halt about a year later. On the other hand, in Romania, the output responded to the shock of government spending with a significant delay of one year, but on the other hand, its intensity was the strongest compared to other countries, and its positive effect was exhausted after a relatively long period of 7 years.

In addition, the authors observe that after the shock of initial tax revenues, actual production reacted differently from the second quarter in all countries. The response of output in all

transition economies (except Poland) seems quite interesting and generally contradictory compared to other research studies targeting western developed countries. In the Czech Republic, Hungary, Slovakia, Bulgaria and Romania, output increases after the shock tax revenue (with varying intensity and durability). As they consider tax revenues to be an automatic stabilizer, the output is expected to decline in response to the positive shock tax revenue. On the other hand, since the increase in tax revenues does not necessarily have to be associated with higher tax rates, they accept that higher tax revenues should not inevitably slow down the economy. Higher output can thus increase tax revenues without subsequently damaging economic growth. At the same time, real production in Poland seems neutral to the shock tax revenue.

Deskar-Skrbic (2017) et al. conducted an empirical analysis of the impact of government consumption on economic growth through the concept and size of the fiscal multiplier in eleven selected countries in Central, Eastern and South-Eastern Europe, namely Bulgaria, Croatia, Czech Republic, Hungary, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia. The purpose of their study was not only to assess the size and sign of the fiscal multiplier in these countries, but also to analyze the determining factors for its size based on different characteristics of the selected economies: the size of the economy, level of government debt, level of the tax burden, openness of the economy, sustainability of the labour market, monetary regime and the business cycle phase. Their methodological approach relied on panel VAR analysis by introducing exogenous "control" variables, which allows them to: 1) estimate the size of the fiscal multiplier within the panel and 2) analyze the effect of the above determinants on the size of the fiscal multiplier, i.e. for the efficiency of government consumption. The study covers eleven economies and a ten-year period (2006-2015), which gives a relatively small but still acceptable sample size. The results presented by Deskar-Skrbic et al. (2017) indicate that fiscal policy is an important determining factor for increasing the economic growth of the surveyed countries, as the increase in government consumption has a positive and relatively strong (fiscal multiplier is about 0.8) effect on aggregate income. The results state that fiscal policy is particularly important in countries whose monetary policy is limited and in which the government influences a large part of the economy, as is the case with the countries included in their study.

In addition, the conclusions they reach confirm the theoretical assumptions about the impact of different structural characteristics of the countries on the efficiency of fiscal consumption. Specifically, their analysis shows that larger countries, which have a more sustainable labour, have a fixed exchange rate (or are a member of a monetary union) and facing recession tend to have larger multipliers. On the other hand, the effectiveness of the fiscal policy is limited in highly open economies, economies with a high level of public debt and economies with a high tax burden.

A study by Stoian (2012) examined the macroeconomic effects of fiscal policy in Romania for the period 2000-2011 on the basis of quarterly data. The author calculates fiscal multipliers using various identification schemes and valuation techniques such as the approach of Blanchard et al. (2002) and the SVAR model with sign constraint (QR decomposition algorithm). The conclusions, drawn in the report, reduce to the fact that during the period under review, discretionary fiscal policy and automatic stabilizers move in

opposite directions. The fiscal policy in Romania is pro-cyclical during both the economic boom and the recession, and this is one of the main reasons for the small size of fiscal multipliers (the multiplier of government spending in the first year varies around 0.25). The author points to the liberalization of the capital account in 2005 as a possible reason that contributed to the reduction of the size of the fiscal multipliers.

In their report, Klyuev et al. (2011) assess the impact of fiscal consolidation on the Czech economy using a version of the IMF GIMF model for the period 2010-2016. The model used is firmly established in economic theory and rich enough to allow quantitative policy analysis. The analysis found out that fiscal multipliers are quite small, ranging from virtually zero to 0.5, depending on the instrument and ancillary assumptions, in terms of the impact on real GDP in the first year. These results reflect the openness of the Czech economy to trade and capital flows, as well as the flexibility of its exchange rate.

The study emphasizes that the effect of fiscal consolidation cannot be summarized in one number. There are several reasons for this and they come down to:

- The impact exceeds one year;
- The subject of the study are several variables – current account, exchange rate, interest rates, inflation rate – and not just real GDP in response to fiscal shock;
- The reaction depends not only on the size of the reduction of the budget deficit, but also on the instrument – the category of expenditures or revenues, through which the reduction is achieved;
- The impact of monetary policy which may be limited if the policy rate is close to zero interest rates;
- It is important whether the tightening is short-term or long-term, as well as the attitude of the private sector regarding the durability of the adjustment in the event of consolidation lasting for several years.

For these reasons, the authors take into account the reactions of output to standardized fiscal shock (1% of GDP) for different instruments (three different taxes and four different ways to reduce budget expenditures), consolidation time horizons and monetary policy assumptions and the reliability of the adjustment. As a conclusion, the results show that the reduction in total transfers has the least negative impact on output, while the reductions in government investment have the greatest. Among taxes, for long-term consolidation, higher consumption taxes have the lowest negative impact in the first few years, and labour taxes have the highest. Monetary policy has the ability to counteract the restrictive effect of fiscal consolidation, but the compensation it provides is relatively small in the short term for most instruments. Higher reliability of the fiscal adjustment reduces the negative impact of fiscal tightening in the short run for all instruments except labour taxes and corporate income.

A study by Staehr (2013) on the impact of austerity measures taken by the governments of the three Baltic States – Lithuania, Latvia and Estonia to recover from the crisis – concluded that the increase in government spending in Lithuania and Estonia in most cases has a negative impact on GDP, employment and foreign direct investment. In Latvia, the

conclusion is less definite. However, government investment has had a positive impact on economic growth in all three Baltic economies.

In her study, Klyvienė (2014) examines the impact of expenditure multipliers and tax multipliers on GDP, foreign direct investment and employment in the Baltic countries of Lithuania, Latvia and Estonia over a period of 10 years, covering the period before the global economic crisis of 2008, during and after the crisis, using SVAR models. In the course of its research, it examines in depth the independent impact of each of the components of the expenditure multiplier (government consumption and government investment) and the components of the tax multiplier (direct (profit tax and labour tax) and indirect taxes). The most important conclusions about the impact of fiscal multipliers reached by the author are:

- Tax increases in Lithuania have a negative impact on GDP, employment and foreign direct investment. In Latvia, only the increase in corporate tax has a negative impact on macroeconomic indicators, while in Estonia GDP, employment and FDI are relatively insensitive to changes in tax policy. The macroeconomic effects of shocks on tax revenues in Latvia lead to a lasting decline in corporate and labour tax revenues, while in the case of indirect taxes, revenues increase. In Estonia, the effects are similar, except that the shock taxes on corporate profits have a negligible effect.
- Increased government spending in Lithuania and Estonia in most cases has a negative impact on GDP, employment and foreign direct investment. In Latvia, this conclusion is less definite. The assumptions about the negative multiplier of government spending in the Baltic States are only partially confirmed. The possibility of a negative reaction of macroeconomic variables to the positive shock from government spending in the Baltics is a consequence of a combination of a negative multiplier of government consumption and a positive multiplier of government investment. This also supports the argument that public investment can have an additional positive impact on aggregate supply, not only through the direct purchase of goods and services.

Karpavičius (2009) conducted a study of fiscal multipliers in Lithuania based on new Keynesian assumptions with flexible prices and flexible nominal wages. According to the applied DSGE models, the reduction of capital taxes had a positive impact on real GDP in both the short and long term in all scenarios. The impact varied from 0.03 to 0.08% in the long run. Reducing labour taxes also had a positive effect on the economy, but the results were not so indisputable. The impact of the tax reduction on consumption in different scenarios did not show much clarity. In general, tax cuts mean positive profits for the Lithuanian economy in the long run. The conclusion on the government expenditure multiplier is less stable, the sign varies and depends on the source of financing the deficit.

Bulgaria is an interesting example of research on quantifying the effect of fiscal policy on aggregate output, as it is not only a small open developing economy, but also faces the challenge of how to promote growth while maintaining a currency board arrangement. The report of Muir et al. (2013) is one of the few attempts to estimate the fiscal multipliers for Bulgaria for the period 1999-2011. They use SVAR model that assesses the historical relationship between fiscal policy and output, given that multipliers may differ during expansion and during the recession. They then calibrate the IMF's GIMF model for Bulgaria to give an idea of the likely effects of future fiscal consolidation on the economy.

As it might be expected for a small open economy, their results show that the impact of fiscal policy on aggregate output was modest in the past. However, empirical results show that the effect of fiscal policy on output does not depend on the underlying state of the economy, as fiscal multipliers are larger in a recession than in an expansion. This is logical, because, during a decline in the output, the share of households and companies with limited liquidity that limit their expenditures in response to a change in disposable income is higher.

The authors establish a clear ranking of fiscal instruments in terms of their impact on growth. On the expenditure side, capital expenditures have the largest multiplier, followed by government consumption and transfers. In terms of revenue, corporate income taxes have the greatest impact on the output, followed by income taxes and consumption taxes.

The GIMF analysis also shows that multipliers have a much greater or lasting effect if they are consolidations that are not immediately and completely plausible to economic agents. Therefore, policy changes work best when they are transparent and carried out in a policy framework with a reputation for upholding previously announced plans. The fact that the multipliers differ significantly according to the tool is important for drawing up an optimal budget. The obtained results show that the Bulgarian budget is favourable for growth in terms of revenues; the amount of direct taxes is low and most revenues are collected through indirect taxes. However, the tradition of lagging capital costs is clearly undesirable. From the perspective of future plans, the analysis suggests a reluctance to increase government consumption, and on the other hand, the strategy of higher capital expenditures financed by increasing the collection of indirect taxes, expanding their base, has significant growth effects in the medium and long term plan.

Karagyozova-Markova et al. (2013) analyze the impact of fiscal policy on real economic activity in Bulgaria and provide a set of estimates for tax and expenditure multipliers. They compare the results of SVAR models with a recursive approach and the structural approach applied by Blanchard et al. (2002) with the results obtained using base simulations to calculate VAR models with time-varying coefficients, the so-called Bayesian VAR, in order to study the changes in the effectiveness of fiscal shocks in Bulgaria in the period 1999 – 2011.

The study presents the results of the application of linear VAR models, which show that the effectiveness of fiscal policy to stimulate economic activity is usually low, as the cost multipliers for the first year do not exceed 0.4. The results concerning tax multipliers are characterized by great inconsistency, as indicated by the data obtained by applying VAR models with different identification techniques, but in general, the effect of tax measures on economic activity seems small and short-lived. These findings are in line with most surveys of EU Member States in Central and Eastern Europe and support the general view that fiscal multipliers are usually small in small open economies.

The results that Karagyozova-Markova et al. (2013) obtain from linear VAR models are fully confirmed by the result of using base simulations to calculate VAR models with time-varying coefficients, all emphasizing the very limited effect of the application of government spending shocks on economic activity. However, the TVP-VAR model reveals important information about changes in the budget expenditure multiplier over time. The size of the expenditure multiplier gradually decreases from levels of about 0.3 in 1999 to a level close

to 0.15 in 2007. With the beginning of the global financial crisis, the size of the multiplier doubled in less than two years before shrinking again to pre-crisis levels, along with a period of economic recovery (2010-2011). These results show that the underlying state of the economy appears to be a determining factor for the nonlinear effects of fiscal policy on economic growth in Bulgaria, although further research is needed to support this view.

In terms of political implications, the results of the study by Karagyozova-Markova et al. (2013) suggest that the effect of discretionary fiscal expansion on real economic activity in Bulgaria appears to be relatively small and short-lived, even during an economic downturn. Similarly, in case of need, fiscal contractions are not expected to put significant pressure on economic activity, even in the short term. Therefore, they believe it is reasonable to take into account the size of fiscal multipliers when developing fiscal consolidation or expansionary strategies. Although the appropriate pace and effectiveness of fiscal adjustment depends on a number of other factors, the small size of fiscal multipliers in Bulgaria suggests that fiscal consolidation with a focus on the tax burden at the beginning of the process would in most cases be preferable to fiscal consolidation with a focus on taxation burden at the end of the process, given the limited effects on output and the favourable impact on government debt dynamics, interest payments and fiscal sustainability. They argue that the increase in the tax burden at the end of fiscal consolidation is often motivated by the expectation of lower fiscal multipliers in the future associated with improved economic prospects. However, such a strategy carries certain risks, as fiscal multipliers are an inconspicuous variable and there is great uncertainty about their size. This uncertainty is strengthened by the fact that the estimate of the size of fiscal multipliers is based primarily on forecasts. In addition to their reasoning, imposing a tax burden at the end of the fiscal consolidation process requires much greater efforts for cumulative consolidation in the medium term, which in turn leads to a high level of public debt and correspondingly higher interest costs. Moreover, the postponement of the consolidation process is usually accompanied by significant implementation risks related to the uncertainty about the materialization of the expected economic recovery, as well as to greater political risks related to the postponement of consolidation measures for the next election cycle.

In conclusion, their results are rather unconvincing in terms of the composition of the preferred consolidation strategy, but at least in terms of impact, it seems that spending restraints would have less of a negative effect on growth than tax increases. However, more research is needed to establish the size of the multipliers of the various sub-components of government spending and their dependence on the state of the economy. It is reasonable to assume that a discretionary increase or decrease in some sub-components of budget expenditures may yield greater results than a discretionary increase or decrease in others.

Nevertheless, the conclusions made in the study by Karagyozova-Markova et al. (2013) have an important political impact on the desired fiscal policy throughout the cycle in the case of Bulgaria. In general, the results of empirical models suggest that very little (almost nothing) can be gained in terms of the economic outcome of active fiscal policy, even in times of economic downturn.

In his report on the study and evaluation of fiscal multipliers in Bulgaria, Yotzov (2018) made calculations of the fiscal multiplier for a relatively long period of time (1996-2017), applying both the standard approach and the approach based on internal absorption. The

results of the study of the dynamics of the fiscal multiplier show that its values throughout the period are positive and remarkably high and, using the internal absorption approach, they even register values above 1 during most of the study period. The obtained results meet the theoretical expectations and are generally in line with other similar studies.

Based on the calculations made, the author concludes that there is a clear tendency to reduce the size of the fiscal multiplier in Bulgaria. According to the author, this trend is unfavourable, as in the conditions of a currency board fiscal policy is the only tool for influencing economic processes. This brings to the fore the question of the efficiency of public spending, as it is impossible and economically impractical to seek an impact on macroeconomic variables only with their continuous growth.

Ignatov (2016) calculated empirical values of the fiscal multiplier for Bulgaria for the period 2000-2015 by considering only the Keynesian cost multiplier. The author's motives for this are related to the fact that often in the empirical literature, the conclusions about tax multipliers are hesitant and very heterogeneous. The obtained results confirm the theory of the Keynesian multiplier, which exceeds 1. The results report a decreasing trend of the multiplier in the period 2000-2008. The reasons for these dynamics are reduced to the strong increase in imports and the more modest increase in gross national savings. The multiplier reached its minimum of 1.12 in 2008, followed by a significant increase of 25.4% to 1.41 in the following 2009. This jump in the multiplier is due to the shrinking imports as a result of the crisis for Bulgaria. In 2010-2011, imports began their path of recovery to pre-crisis levels, and the multiplier again adopted a downward trend. In the last 2013-15 years of the study period, the multiplier stabilized and restored its pre-crisis levels. Characteristic of the entire period of this study was that gross national savings had a predominantly negative effect on the cost multiplier.

The author applies an exemplary decomposition of the already calculated cost multiplier by analyzing the relative importance of various factors (current account, seizures, cash effect, business cycle, trade openness and real cash flow rate) related to the value of the multiplier. There are two subperiods in which the multiplier shows a downward trend (before and after 2009), and the dividing line between them is the beginning of the crisis. An attempt is made to establish the cumulative effect of each constituent factor determining the size of the multiplier for each subperiod.

The investigations made by Ignatov (2016) indicate that during the first sub-period, the greatest influence is exerted by the structural component speed of real money circulation. The degree of economic openness, which, together with the current account, reflect the outflow of expenditures from the economy, has almost as strong an impact. The growth of the money supply and the increase of the real absorption cause a positive effect on the multiplier. The study emphasizes the relatively insignificant effect of the economic cycle on the multiplier, which, to some extent contradicts the results of other empirical works, giving a significant influence to this factor.

The results studied during the second subperiod show again that the trend of the multiplier is negative, but there is a certain change in the degree of influence of various factors. Although the three most influential factors remain the same, the difference in this sub-period is that the economic openness acquired leading meaning for the multiplier. The monetary effect

remains with the same diminishing effect, while the velocity of money loses more than half of its weight. The upward dynamics of exports explains the positive impact of the current account, but also of the allowance-withdrawal factor. The business cycle during this period shows a negligible cumulative effect.

The economic effects of fiscal policy are of great importance for both economic theory and economic practice, and much research has been devoted to this issue. Accurate evaluation of fiscal multipliers is essential for the development and implementation of fiscal policies. Despite the abundance of publications on the subject, there is no theoretical consensus on the size and even the impact of fiscal multipliers. This is largely due to the peculiarities of neoclassical and Keynesian macroeconomic models, which provide for various changes in personal consumption, employment and real incomes after a fiscal shock. Numerous studies published since the onset of the global crisis do not strongly support any of the theoretical models.

Regarding the importance and size of fiscal multipliers in Central and Eastern Europe, there is a small amount of research on the subject. From a theoretical point of view, it is not entirely clear whether their multipliers should be expected to be higher or lower than in other European countries. Based on the above, **Error! Reference source not found.** summarizes the factors causing an increase and the factors causing a decrease in fiscal multipliers in the countries of Central and Eastern Europe.

Table 1

Determining factors of fiscal multiplicators in Central and Eastern European countries

Factors increasing multipliers in Central and Eastern European countries	Factors decreasing multipliers in Central and Eastern European countries
There are fewer stimuli for consumption because: 1) liquidity constraints arise in less developed financial markets; and 2) agents look less into the future if there is too much instability.	Precautionary saving may be larger in a more uncertain environment.
	Economies are smaller and more open.
Monetary policy response is less effective.	Inefficiencies in public expenditure management and revenue administration.
Automatic stabilizers are lower.	Some Central and Eastern European countries may sustain lasting positive output gaps due to supply constraints.
Government debt tends to be lower.	With higher interest spreads there is more room for credibility and confidence effects.

Source: Batini et al., (2014). A Simple Method to Compute Fiscal Multipliers, Authors' calculations.

2. Dynamic effects of the budget expenditure shocks and tax revenue shocks on the economic activity in Bulgaria, Estonia and Lithuania for the period 1995-2018

2.1. General characteristics of the data used and the applied methodology for conducting the empirical analysis

2.1.1. Data description

For the purposes of this study, quarterly fiscal data are analyzed (based on the definition of the European System of National and Regional Accounts 2010), as it allows us to compare the results obtained with the results of other surveys of fiscal multipliers for European economies, most of which are based on ESA 95 and ESA 2010 data. In addition, these fiscal data take into account the lagging of tax revenues in the state budget, offer better processing of data on EU transfers and take into account the accumulation of public arrears. The data for all fiscal variables cover a relatively long period from 01.01.1995 to 31.12.2018, taking into account the impact of the global financial crisis of 2008 and are taken or calculated on the basis of the quarterly non-financial reports of the general government[6]. We use quarterly fiscal data for Bulgaria, Estonia and Lithuania. We chose to study these countries for two reasons: a) They are all part of the former COMECON (Union for Mutual Economic Assistance) and have similar economic characteristics (openness of the economy, lack of active monetary policy, fixed exchange rate[7]); and (b) they joined the European Union relatively soon and at the same time (Estonia and Lithuania joined in 2004 and Bulgaria in 2007). In an attempt to achieve a more in-depth and comprehensive analysis, the studied variables are presented in a regression equation, divided for each of the analyzed countries separately. We believe that this division will give us answers to the questions: Do and to what extent direct budget expenditures and tax revenues affect the values of the gross domestic product of the investigated countries?; Is there a coincidence between the results for Bulgaria and the results of the other countries and is there a deviation from the general trend?.

Of particular importance in the research of fiscal multipliers is that the specific definition of cost and revenue aggregates should be included in the models. To determine the fiscal variables in our study, we refer to the approach applied in the fundamental study of Blanchard et al. (2002), where government expenditures are defined as the sum of the value of government consumption and government investment, and net tax revenues are presented as the difference between total tax revenues and social transfers (including interest payments). A similar approach was used by Karagyozova-Markova (2013) when calculating the fiscal multipliers for Bulgaria.

Further details on the data, including the identification of the variables, their sources and processing, are presented in Table 2.

[6] Quarterly Non-Financial Accounts for General Government - QNFAGG

[7] A currency board was introduced in Bulgaria in 1997, Lithuania and Estonia introduced a currency board in 1992 and 1994, respectively, which lasted until 1999, when the countries practically left the currency board and began to issue national currency. They maintain their fixed exchange rate until their entry into the Eurozone (Estonia (2011), Lithuania (2015)).

Table 2

Data description

Variable	Code	Description and calculations	Measure	Treatment	Source
Output	GDP	GDP – expenditure approach Output (ESA code B.1GQ)	Millions of domestic currency	Seasonal adjustment	National Statistical Institute – Quarterly Non-Financial Accounts of the General Government
Government expenditure	GE	Compensation of employees (ESA code D.1) + Intermediate consumption (ESA code P.2) + Gross fixed capital formation (ESA code P.51)	Millions of domestic currency	Seasonal adjustment	National Statistical Institute – Quarterly Non-Financial Accounts of the General Government
Tax revenues (net)	NT	Indirect taxes (ESA code D.2) + Direct Taxes (ESA code D.5) + Social Security Contributions (ESA code D.611) + Capital taxes (ESA code D.91) – Social payments (ESA code D.60) – Subsidies (ESA code D.3)	Millions of domestic currency	Seasonal adjustment	National Statistical Institute – Quarterly Non-Financial Accounts of the General Government

Source: Eurostat, Autors' calculation

2.1.2. Details on the econometric methodology

The calculation of the government expenditure multiplier and the tax multiplier for Bulgaria, Estonia and Lithuania goes through three stages.

On the first stage, we calculate the impact of the government expenditure multiplier and the tax multiplier on the gross domestic product, applying a linear vector autoregressive (VAR) model based on the Cholesky decomposition of innovations, which allows the identification of shocks of fiscal policy. The model includes three endogenous in real terms: government expenditure, net taxes and GDP. The application of this model specification is one of the most widely used approaches in the scientific literature for measuring fiscal multipliers. It was used in the studies of Fatás et al. (2001), Mirdala (2009), Karagyozova-Markova et al. (2013), etc.

We chose this approach for several reasons: First, VAR-based techniques do not require as many calculations as structural models for capturing the nonlinear nature of the multiplier

size. Second, among the available techniques, the use of VAR models to estimate time-varying parameters offers significant advantages, as they allow greater flexibility in modelling nonlinearity and heterogeneity over time (Pereira et al., 2010). This approach allows us to test for non-linear effects on fiscal policy in Bulgaria, Estonia and Lithuania, which may be caused by structural changes that, on the one hand, cannot be easily identified and, on the other hand, can take the form of processes that last several years (Kirchner, 2010). For the time being, we refrain from applying other models, largely due to the limitations on data availability or reservations regarding the assumptions they require.

In the second stage of the study, we apply the standard concept for calculating the government expenditure multiplier, applied by Yotzov (2018) and Ignatov (2016), so that we can provide estimates of the absolute change in the gross domestic product after a single change in the fiscal variables of government expenditures in a longer-term dynamics covering the period under review.

In the third stage, we analyze the impact of some key factors such as private sector debt, consolidated government debt, economic openness and output gap whose role explains the dynamics of fiscal multipliers during key stages of the study period.

Details on the methodology for calculating, evaluating and validating standard VAR models and the Impulse response function are provided below.

As Box et al. (1994) recommend, before calculating VAR models, it is necessary to eliminate and adjust the seasonality of the data. For this purpose, in our study, we apply the Tramo / Seats method, which is applied only for quarterly and monthly series. The procedure requires at least 3 full years of data and can correct up to 600 observations. In our case, these requirements are met in terms of data, which makes its application possible.

The next procedure in the econometric survey is the stationary check. It requires testing for the presence of a unit root in the time series of data. An analyzable process can be defined as stationary when a segment of it has a mean, standard deviation and correlation equal to the mean, standard deviation and correlation of any other segment of this process. We can assume that a process is non-stationary, when in its change it does not seek to return to some constant value, i.e., there is no process of return to the average value.

One of the most commonly used tests to detect the presence of a unit root is the extended test of Dickey et al. (1979), the so-called ADF (Augmented Dickey-Fuller Test). It is based on the assumption that the time series has the characteristics of an autoregressive process of order ρ. The economic evaluation of this test is performed by using an auxiliary equation, including the differences of ρ– past values, also known as lag values of the dependent variable. From what has been mentioned, the following equation can be derived:

$$\Delta Y_t = \alpha_1 + \alpha_2 + \delta Y_{t-1} + \beta_1 \Delta Y_{t-1} + \beta_2 \Delta Y_{t-2} + \beta_\rho \Delta Y_{t-\rho} + \mathcal{V}_t, \quad (1)$$

where

$\mathcal{V}_t$ is white noise,

$\Delta Y_{t-1} = (Y_{t-1} - Y_{t-2})$, $\Delta Y_{t-2} = (Y_{t-2} - Y_{t-3})$...;

$\delta = (\rho - 1)$;

The null hypothesis of the ADF test states that when δ=0, H_0: δ=0, the time series has a single root, i.e. it is nonstationary. Accordingly, the alternative hypothesis states that the time series of data is stationary at H_1: δ<0. To test the null hypothesis t-distribution for δ is used (i.e. the estimate of δ to the standard error), where t_δ=δ⁄s e (δ) applying here the simulated critical values of Davidson et al. (1989) and not the Student's t-distribution.

Provided that it is proved that there is a single root, it is necessary to convert the rows by logarithmizing or calculating the growth rate, first or second difference, respectively. The allowable level of first-order errors is 5%. The length of the lags of the dependent variable that are included in the test is determined based on the minimization of the Schwartz information criterion. When a dependence is found in which the presence of a unit root is not observed, it is possible to proceed to a procedure for applying a linear regression method. The calculations related to establishing the presence of a single root were performed with econometric software EViews.

The results for all analyzed variables (government expenditure, tax revenue and GDP) for all countries show the presence of a unit root (i.e. the data are non-stationary) (Table 3).

Table 3

Unit root test

Indicators/ Countries	GDP		GE		NT	
	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.
Bulgaria	-0.172681	0.9327	0.032770	0.9586	-1.548583	0.5048
Estonia	0.495230	0.9857	0.049615	0.9601	-0.504719	0.8846
Lithuania	0.330769	0.9788	-0.354259	0.9114	-1.484533	0.5372

Source: Eurostat, Authors' calculation

For this purpose, we use first differences. When using first differences instead of levels calculations show that all data are stationary (Table 4).

Table 4

Unit root test 1st difference

Indicators/ Countries	GDP		GE		NT	
	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.
Bulgaria	-6.980828	0.0000	-9.245969	0.0000	-12.47720	0.0001
Estonia	-3.591612	0.0077	-5.962826	0.0000	-12.18285	0.0001
Lithuania	-6.319025	0.0000	-4.247807	0.0009	-10.99492	0.0000

Source: Eurostat, Authors' calculation.

After the unit root testing procedure, the regression equation is modelled. To quantify the studied variables, we apply the popular in recent years empirical approach the Vector Autoregressive Model (VAR). This methodology is appropriate because the variables are considered throughout the system and are not divided into endogenous and exogenous, which is typical of structural econometrics. In the VAR model, each of the variables is represented as a linear function of its past values and the past values of the other variables, characterized by non-random behaviour such as constant and time trend.

In order to set the optimal number of lags in the VAR model, it is necessary to check for the optimal lag structure of the model. We perform this check using the Lag Length Criterion function. The table with the results of the inspection shows different information criteria for information for all lags up to the specified maximum (If there are no exogenous variables in the VAR model, the lag starts at 1; otherwise the lag starts at 0). The table shows the selected lag of the criterion (its smallest value) on each column with an "*" sign (asterisk). The most appropriate is the lag to which the lowest value with the sign "*" corresponds.

According to the theory, when using quarterly data, which we use in our study, it is recommended that the optimal number of lags be between 1 and 8, so as not to lose the degrees of freedom. Checking our data shows that the most appropriate number of lags to be set in the VAR model is four (Table 5).

Table 5

VAR Lag Order Selection Criteria – endogenous variables (GDP GE NT)

Countries	Bulgaria		Estonia		Lithuania	
Coefficients	Lag	Coefficient	Lag	Coefficient	Lag	Coefficient
LR	1	683.9302*	1	624.6861*	1	814.8128*
FPE	2	97430421*	3	97983070*	4	98357431*
AIC	4	42.47138*	4	33.87281*	4	34.74344*
SC	1	42.86389*	1	34.44050*	2	35.73184*
HQ	2	42.57305*	2	33.99072*	4	35.18576*

** indicates lag order selected by the criterion*
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion
Source: Eurostat, Authors calculation

To determine whether there are logical causal relationships between the variables in our VAR model, we apply the so-called Granger causality test. The data from our study show that for all countries there is an alternative hypothesis, according to which the data are stationary and there is a Granger causality between government spending and tax revenues and GDP (Table 6).

Table 6

Granger Causality Test – dependent variable (GDP)

Countries	Bulgaria			Estonia			Lithuania		
Indicator	Chi-sq	df	Prob.	Chi-sq	df	Prob.	Chi-sq	df	Prob.
GE	877.9233	4	0.0000	40.79399	4	0.0000	15.51618	4	0.0037
NT	15.45627	4	0.0038	13.43830	4	0.0093	28.10487	4	0.0000

Source: Eurostat, Authors calculation

The standard formula for the Vector Autoregressive Model (VAR) econometric model used is as follows:

$$y_t = A_1 y_{t-1} + ... + A_p y_{y-p} + Bx_t + \varepsilon_t \quad (2)$$

where:

y_t – vector of endogenous variable;

x_t – vector of exogenous variable;

$A_1 \dots A_p$ and B – matrices of the calculated coefficients;

ε_t – vector of residuals;

Since only the lag values of the endogenous variables appear on the right side of the equations, simultaneity is not a problem and the least-squares method gives consistent estimates (Table 7).

Table 7

VAR models calculations

Countries Variables	*GDP – Bulgaria*			*GDP – Estonia*			*GDP – Lithuania*		
	Coeff.	Standard errors	t-Stat.	Coeff.	Standard errors	t-Stat.	Coeff.	Standard errors	t-Stat.
GE(-1)	0.996183	0.03858	25.8199*	0.184237	0.11221	1.64194*	0.289181	0.17401	1.66190*
GE(-2)	-0.800883	0.10633	-7.53203*	-0.207163	0.13058	-1.58643*	-0.147468	0.26114	-0.56471
GE(-3)	-0.312464	0.07665	-4.07633*	-0.112466	0.13157	-0.85482	0.074675	0.25234	0.29593
GE(-4)	0.342366	0.05915	5.78807*	0.032386	0.09096	0.35604	-0.206137	0.14788	-1.39398
NT(-1)	-0.003679	0.03794	-0.0967	-0.015955	0.03111	-0.51284	-0.090698	0.03038	-2.98509*
NT(-2)	-0.086747	0.04172	-2.07948*	-0.011354	0.03478	0.32649	0.027079	0.03199	0.84644
NT(-3)	0.050389	0.04208	1.19741	0.026828	0.03475	0.77204	0.061725	0.03386	1.82298*
NT(-4)	-0.031866	0.03463	-0.92008	0.016796	0.03120	0.53842	-0.017721	0.02632	-0.67328

** Statistically significant values at 5%, 10% and 15% critical values*
Source: Eurostat, Authors' calculation

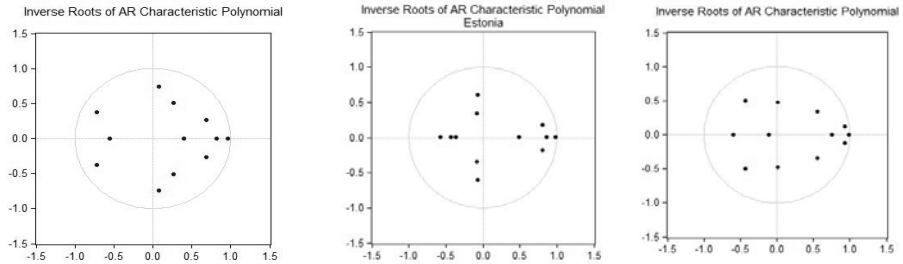
In order to verify the appropriateness of the calculated VAR model, the lag structure of the obtained calculations is checked. This test takes into account the opposite roots of the characteristic autoregressive polynomial (Inverse Roots for AR characteristic polynominal) (Lütkepohl, 1991). The calculated values of the VAR model are stable (stationary) if all roots have a modulus up to one and are located inside the single circle. If the test shows that the VAR model is not stable, it means that the calculated results (such as standard impulse response errors) are not valid. This indicates the presence of *κp* roots, where *k* is the number of endogenous variables and *p* is the largest lag.

The calculations in our example show that all roots have a modulus to unity and are inside the unit circle (Figure 1).

Figure 1

Check for stability of VAR model – Inverse Roots of AR

Bulgaria Estonia Lithuania



Source: Eurostat, Authors' calculation

After calculating the VAR models and checking its appropriateness using the diagnostic test Inverse Roots for AR characteristic polynominal, we calculate the Impulse response function (Figures 2 and 3), which monitors the effect that causes a single shock in a selected variable on the current and future values of other endogenous variables. If the changes ϵ_t are simultaneously uncorrelated, the interpretation of the impulse response is clear. The shock in the variable $\epsilon_{i,t}$ causes a change in the homogeneous variable $y_{i,t}$. Changes are usually related and can be considered as having a common component that cannot be related to a specific variable. In order to interpret the impulses, it is appropriate to apply the transformation P to the changes so that they become uncorrelated:

$$\nu_t = P_{\epsilon t} \sim (0, D) \quad (3)$$

where D is където е diagonal covariance matrix.

2.2. Analysis of GDP reactions after fiscal shocks

This chapter presents numerically and graphically the results obtained from the calculation of standard VAR models – the main VAR model with three endogenous variables – gross domestic product, budget expenditures and tax revenues for Bulgaria, Estonia and Lithuania for the period 1995-2018. In addition, by applying a standard approach, the absolute value of the government expenditure multiplier was calculated, since the impulse responses obtained from the application of the Impulse response function do not directly reveal its size. An attempt is made to interpret and analyze the results, taking into account the factors that help explain the dynamics of the size of fiscal multipliers in different periods of economic development, which go through the studied countries – from the transition from a planned economy to a market economy, the period the introduction of a fixed exchange rate, the great global crisis of 2008 and the recovery period thereafter.

2.2.1. GDP reaction after fiscal shocks

Table 8 and Table 99 summarize basic information on the data and results of the calculation of the VAR models, reflecting the effects of government expenditures and tax revenues on the gross domestic product for Bulgaria, Estonia and Lithuania for the period 1995-2018. Detailed information is available in the previous section 2.1 "General characteristics of the data used and the applied methodology for conducting the empirical analysis " (Table 7).

The results of the applied standard VAR model regarding the impact of the government expenditure multiplier on the GDP for the three analyzed countries indicate that the most significant is the impact for Bulgaria, where the highest statistically significant values were registered in the four quarters. Data for Estonia show statistically significant multiplier values in the first two quarters, and for Lithuania only for the first quarter. The reaction of the gross domestic product to the shocks in government expenditures is similar for all three housekeepers. In the first quarter it is positive, in the second it immediately becomes negative, decreasing in the third and fourth quarters.

Table 8

VAR model – Effects of government expenditure on GDP

Countries	Period	Quarters				Numer of observations
		1st	2nd	3rd	4th	
Bulgaria	1995 Q1-2018 Q4	1,00*	-0,80*	-0,31*	0,34*	92
Estonia	1995 Q1-2018 Q4	0,18*	-0,21*	-0,11	0,03	92
Lithuania	1995 Q1-2018 Q4	0,29*	-0,15	0,07	-0,21	92

** Statistically significant values*
Source: Eurostat, Authors' calculation

The results from Table 9, presenting the values of the VAR model concerning the impact of tax revenues on GDP show that the values are low for all countries. For Bulgaria, a close to zero negative statistically significant value was registered in the second quarter. There is no statistically significant value for Estonia. Statistically significant values were registered for Lithuania in the first and third quarters.

Table 9

VAR model – Effects of tax revenues on GDP

Countries	Period	Quarters				Numer of observations
		1st	2nd	3rd	4th	
Bulgaria	1995 Q1-2018 Q4	0,00	-0,09*	0,05	0,03	92
Estonia	1995 Q1-2018 Q4	-0,02	-0,01	0,03	0,02	92
Lithuania	1995 Q1-2018 Q4	-0,09*	0,03	0,06*	-0,02	92

** Statistically significant values*
Source: Eurostat, Authors' calculation

The summaries that can be made on the basis of the results of the VAR analysis are that the values of the government expenditure multiplier for all countries are significantly higher than the values of the tax revenue multiplier. The reaction of GDP to the shock in government expenditures is displayed in the first quarter for all countries, while the reaction of GDP to

the shock in taxes is displayed with a delay for Bulgaria (second quarter) and Lithuania (third quarter).

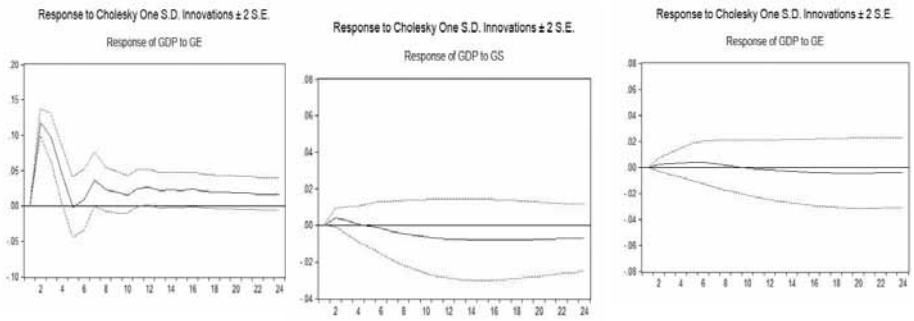
- ***Reaction of GDP after the government expenditure shock***

The results of the Impulse response function, which show the response of the gross domestic product to the shocks in the budget expenditures for Bulgaria, Estonia and Lithuania (Cholesky identification scheme) are presented in The results need to be looked at with caution, as countries often borrow from international creditors during a crisis, which can distort the results to some extent.

Figure 2

GDP reaction after government expenditure shock

Bulgaria Estonia Lithuania



Source: Eurostat, Authors' calculation

The results for Bulgaria show that the strongest reaction of the gross domestic product (0.12) is manifested in the second quarter after the shock in the government expenditures and takes the form of a peak. There follows a period of weakening of the influence as the size of the multiplier reaches its bottom with negative values (-0.002) in the fifth quarter. Then there was again an increase and a slight retention in the seventh and eighth trimesters (0.4), but already to lower values than those recorded immediately after the shock. After the fourth quarter, i.e. after the second year, there is a slowdown in the response of GDP as the results are positive, but do not differ significantly from zero.

With regard to Estonia, the impulse responses show a weak reaction to GDP as a result of the shock to government expenditures. The positive shock is almost insignificant and extremely short-lived – in the second and third quarters. The values then become negative, increasing from -0.002 to -0.008 and retaining their value until the end of the study period.

In all quarters after the shock expenditures, there was no significant response of the gross domestic product to the shock in the budget expenditures in relation to the results for Lithuania. Fiscal multiplier values gradually increased until the fifth quarter (0.005) and after

this fall. The positive GDP response, although insignificant, persists for a relatively long period of just over two years, after which the multiplier persists until the end of the period.

Comparing the results concerning the reaction of the gross domestic product caused by the shock in the government expenditures for the three surveyed countries – Bulgaria, Estonia and Lithuania, we can make the following summaries: The highest and most significant values of the government expenditure multiplier – (0.12) are registered in the results for Bulgaria, and the lowest in the results for Estonia (-0.008). In the results for Bulgaria, the values of the government expenditure multiplier are entirely positive, and in the results of Estonia and Lithuania, the negative values prevail.

The increase in government spending in all three countries – Bulgaria, Estonia and Lithuania – has a positive impact on GDP immediately after the shock, but it is short-lived (especially for Estonia and Lithuania). One of the reasons for the short-term effect of spending shocks on GDP is that the process of integration of Bulgaria, Estonia and Lithuania into the EU single market significantly increases the openness of economies, which expands the so-called "import outflow" of the fiscal stimulus. This "leakage" stems from the fact that in this way, part of the positive impact on GDP due to the stimulus is offset by the increase in imported goods and services. Usually, the greater the openness of the economy, the greater the outflow.

Another point that is important in the analysis of the impact of government expenditure multipliers on GDP is the issue of expenditure-effectiveness. Guided by the understanding that government expenditures are a burden on the economy rather than a stimulus, countries are more likely to rely on limited government expenditures. According to Minasian (2018) the unconditional treatment of this understanding doesn't correspond to modern trends. What is crucial here is not the amount of government expenditure, but the way in which the latter is used. The fiscal regulatory strategies should focus on increasing public investment, which stimulates economic growth and cuts inefficient current government spending.

The results need to be looked at with caution, as countries often borrow from international creditors during a crisis, which can distort the results to some extent.

- ***GDP reaction after-tax revenues shock***

The data for Bulgaria (Figure 3) show that the positive reaction of GDP after the tax shock is short-lived and weak. The peak of the positive reaction occurs in the third quarter (0.03), after which the values decrease and after the fourth quarter they are completely negative, with the highest negative value being -0.04.

In terms of the response of GDP to the shock in tax revenues, the results for Estonia show a weak but predominantly positive response, which starts after the third quarter. The highest value of 0.012 is maintained in four quarters, after which it decreases.

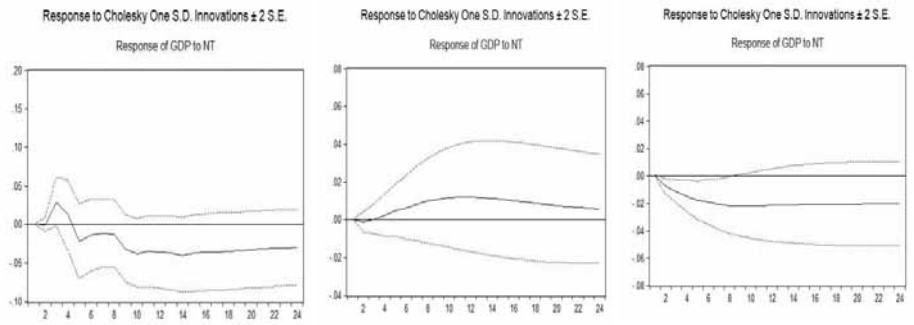
The reaction of the GDP to the tax shock in the results for Lithuania is completely negative for the whole analyzed period. The values decrease gradually until the seventh quarter and then the reaction remains constant until the end of the period.

In summary, we can conclude that the results are identical to some other empirical studies based on emerging economies on the response of GDP to tax shocks, which show lower values of tax multipliers compared to government expenditure multipliers. Low,

predominantly negative values of the tax multiplier are registered in the values for Bulgaria and Lithuania, and only in Estonia they are entirely positive. Nevertheless, the positive reaction in the results for Bulgaria, although short-lived, shows the highest results for all three countries. Reactions for Bulgaria suggest that the shock from tax revenues leads to greater collection of tax revenues only in the short run, while in the long run revenues are declining due to lower tax bases. The relatively low sensitivity of GDP to tax shocks in the three countries can be explained by a more balanced fiscal policy and a more stable environment of the tax system, as well as structural and cultural differences. For Bulgaria, the low tax rate on direct taxes is also essential, which at the governmental level is seen as a prerequisite for increasing the country's competitiveness (Beleva, 2019) and attracting foreign investors (Tasev et al., 2017), as well as way to fight the grey economy, which will reflect on the expansion of the tax base. However, there are a number of problems in the tax system of Bulgaria, among which is the weak redistributive function of the budget (Yotsov et al., 2020). These phenomena require additional research, which involves the study of individual components of tax revenues (direct and indirect taxes).

Figure 3

GDP reaction after-tax revenues shock



Source: Eurostat, Authors' calculation.

2.2.2. Cumulative fiscal multiplier

The direct values of the fiscal multipliers are revealed by the VAR model, and the impulse responses show us the dynamic response of GDP. For greater certainty and to provide estimates of the absolute change in the gross domestic product after a single change in fiscal variables of budget expenditures, we use the standard concept for calculating the multiplier of budget expenditures, applied by Yotzov (2018) and Ignatov (2016). In the current study, the direction of dynamic development of the effect of expenditure and tax multipliers is of leading importance. It is important to determine whether the trend of change of the multiplier calculated by the VAR model and the trend of change of the fiscal model calculated by the standard approach have the same trend.

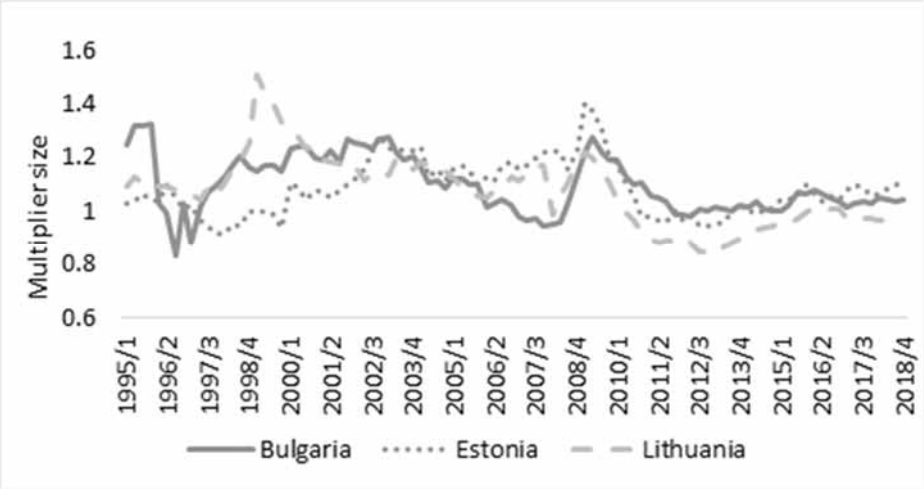
In a simplified model of an open economy, in which consumption and imports are accepted as an integral part of income ($c = \frac{C}{Y}$ и $m = \frac{M}{Y}$), where *c* and *m* are the marginal propensity to consume and the marginal propensity to import, respectively, the fiscal multiplier can be calculated as:

$$M = \frac{1}{1-c+m} \quad (4)$$

The obtained absolute values of the cumulative fiscal multiplier are summarized on Figure 4.

Figure 4

Cumulative fiscal multiplier (1995-2018)



Source: Eurostat, Authors' calculation

The results of the calculation of the absolute values of the cumulative multiplier of budget expenditures show that its size for the studied period is in the range from 0.83 to 1.51. The values largely correspond to the findings of Pusch et al. (2011), Yotzov (2018), Ignatov (2016) and others and are comparable to most studies on the periphery of the EU. They support the argument that the low values of the fiscal multiplier are explained by the size of their economy, its openness[8], the conditions of a currency board, as well as cyclical effects. They share the thesis that these economies are usually characterized by small fiscal multipliers, as for Bulgaria and other developing EU countries they are close to and below 1. However, these values are significantly lower than the established expenditure multipliers in

[8] Rangelova (2014) examines the relationship between foreign trade and economic growth for 179 countries (according to the IMF data) and within the EU-27 (according to Eurostat data), focusing on the global financial and economic crisis.

the US and more the large (less open) economies in the euro area, which are usually found to be well above 1 (Burriel et al., 2009).

The results in Figure 4 show that the cumulative multiplier of government expenditures in Bulgaria realizes its peak value in the period before the introduction of the currency board (1.33) and to some extent, the same trend continues in the years after its introduction. In Lithuania and Estonia, values above 1 are again registered at the beginning of the analyzed period, which can be explained by the fact that a currency board is also adopted in these countries (Estonia – 1992; Lithuania – 1994). Similar peaks were observed again in 1999-2000, when the countries practically left the currency board and began to issue national currency freely, managing to maintain their fixed exchange rate until their entry into the Eurozone in 2014-2015.

The response to the aggregate output of budget expenditure shocks became weaker and shorter during the period 2000-2007. The multiplier values in all three countries are quite stable (both in terms of size and duration) and vary about 1.

With the beginning of the global crisis, the size of the multiplier rapidly increased back to levels above 1 since the beginning of the study, with the highest value reported for Estonia – 1.37, followed by Bulgaria – 1.20 and Lithuania – 1.19. Immediately after the crisis subsided, along with the economic recovery, the values of the budget expenditure multiplier shrank significantly to 0.8.

It is noteworthy that the values of the fiscal multipliers obtained by applying the VAR models and the values of the cumulative multiplier of budget expenditures calculated using the standard concept differ. The reason why this difference is observed is related to the fact that the way of calculation using VAR models is much more accurate, as a result, the values are more accurate. Leading, in this case, is the fact, that the trend of change of the multiplier calculated by the VAR model and the trend of change of the fiscal model calculated by the standard approach coincide.

2.2.3. Determinants/factors influencing the fiscal multiplier

Similar to the approach applied by Karagyozova-Markova et al. (2013), we analyze some factors such as private sector debt, consolidated government debt, economic openness and the gap between real and potential GDP, whose role explains the dynamics in the size of fiscal multipliers during key stages of the study period.

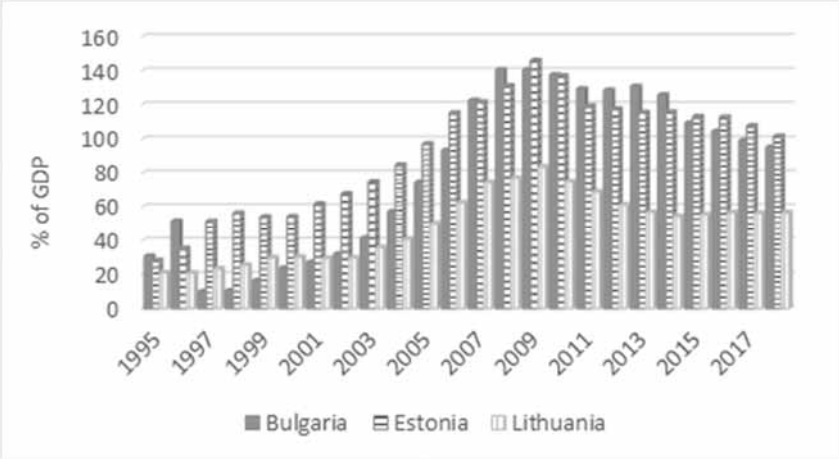
First, in the period 2000-2008, the economies of the three countries experienced high economic growth, accompanied by rapid changes in the economy. Consumption and investment are growing rapidly, aided by rapid credit growth and extremely low or even negative real interest rates. This significantly deepens the financial sector. Competition from foreign-owned financial institutions in an effort to expand market share led to a rapid and significant increase in the supply of low-interest loans (Figure). External indebtedness of the private sector was also growing steadily due to the good investment opportunities offered by both financial and non-financial corporations. The peak of lending is 2008-2009, when the size of private-sector loans (households, non-financial corporations and non-profit

institutions) reached huge levels of 146% of GDP for Estonia, 140% of GDP for Bulgaria and 83% of GDP for Estonia.

The mitigation of the credit constraints is among the factors that could explain the decline in the effectiveness of government spending to stimulate economic activity, as Perotti (2002) argues. According to Karagyozova-Markova et al. (2013), this leads to a gradual decrease in the share of households and companies that are liquid and credit constrained. Kirchner et al. (2010) also provide evidence that household access to credit is among the most important determinants of the size of fiscal multipliers. In particular, the authors conclude that increasing household credit as a percentage of GDP leads to lower multipliers.

Figure 5

Private sector debt (1995-2018)



Source: Eurostat, Authors' calculation.

Secondly, it is generally accepted that the effect of the fiscal multiplier is greater if the country's fiscal position remains stable after the stimulus. This is confirmed by the fact that in the years after the introduction of the currency board in Bulgaria, the conducted fiscal policy is restrictive, i.e. the effects are neo-Keynesian, as this is a period of economic recovery and a return to confidence in the fiscal framework. In addition, the high level of government debt at the beginning of the sampling period would make expansionary fiscal stimuli intolerable. However, sovereign debt sustainability problems have been successfully mitigated over the last fifteen years, with the government debt / GDP ratio for Bulgaria declining from almost 100% of GDP in 1997 to below 20% of GDP in 2012 (Figure 6), which is largely due to budget surpluses in the years before the recent crisis (Figure 7). For Estonia and Lithuania (and for Bulgaria after 2002) the rule in the economic literature is confirmed that in the periods when the debt is below 60% of GDP[9], the impact multiplier is about 1 and

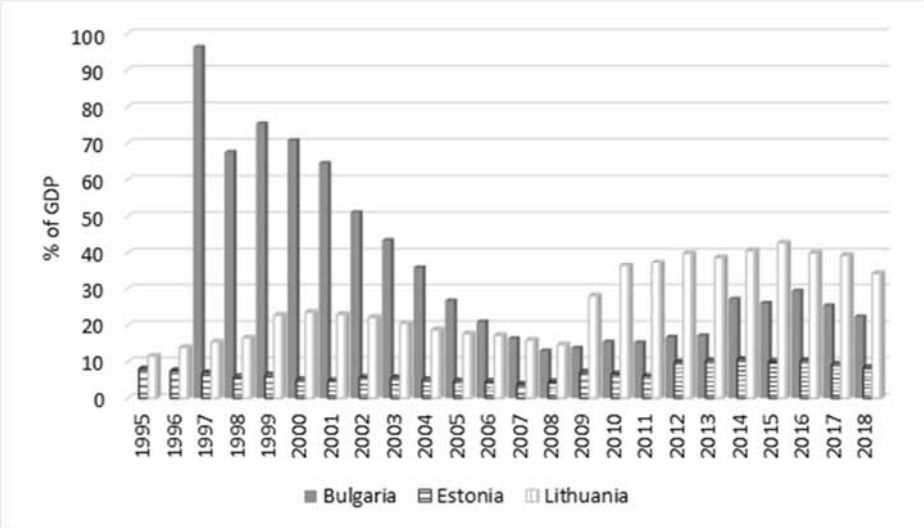
[9] The coincidence of the used debt-to-GDP benchmark with the well-known Maastricht convergence criterion is striking.

has positive values in the longer term. Higher debt levels are associated with low and even negative values of the multipliers (Yotzov, 2018);

As widely discussed in the literature, debt sustainability issues are among the important factors in determining the effect of budget expenditures on aggregate income. Perotti (2002) argues that high debt levels act as a signal for the necessary future fiscal adjustment as a result of current increases in government spending. Expecting a future fiscal tightening (i.e. an increase in taxation) would cause a decline in private consumption today, thus offsetting the widening impact of government consumption. There are numerous economic studies Ilzetzki et al. (2013), Koh (2017), Hory (2016), and Deskar-Škrbić et al. (2017), that support the theory that the level of public debt affects the size of the fiscal multiplier inversely, as countries with higher public debt have difficulty in securing financial support for stimulating fiscal policy due to rising interest rates. As a result, public finances are often under pressure.

Figure 6

Consolidated government debt (1995-2018)

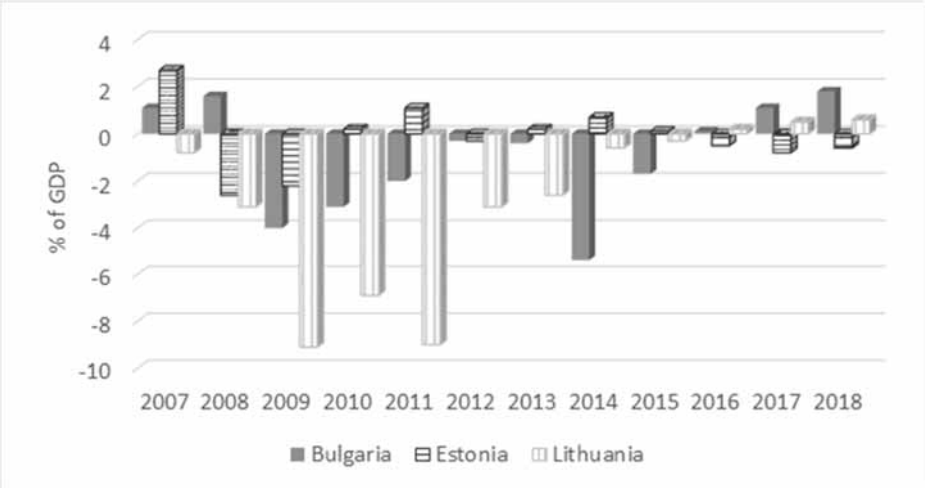


Source: Eurostat, Authors' calculation.

The increased share of public expenditure on interest payments can significantly reduce the financial potential for stimulating the use of fiscal instruments. The problem of high government indebtedness was exposed during the Great Recession, especially in the EU, where many member states encountered problems managing growing public debt. As a result, some member states were unable to implement counter-cyclical fiscal policies and were instead forced to pursue painful fiscal tightening. Therefore, member states should release public budgets in relatively stable times, but in times of economic downturn, they must boost aggregate demand to stimulate economic growth.

Figure 7

Government deficit (-)/surplus (+)



Source: Eurostat, Authors' calculation.

Third, the process of integration of the three countries into the EU single market (Bulgaria (2007), Estonia and Lithuania (2004)) significantly increases the openness of their economies (Figure 8), which in turn expands the so-called "leakage" of the fiscal stimulus (Figure 9). This "leakage" results from the fact that part of the fiscal stimulus is spent on the consumption of foreign goods and services and thus part of the positive impact on GDP due to the stimulus is offset by the increase in imports. Usually, the greater the openness of the economy, the greater this outflow and the smaller the size of the fiscal multiplier. These statements are confirmed in the example of the countries in our study. The lowest values of the indicator were registered in 2009 (Estonia – 58% of GDP, Lithuania – 54% of GDP and Bulgaria – 47% of GDP), when the values of the fiscal multiplier were the highest.

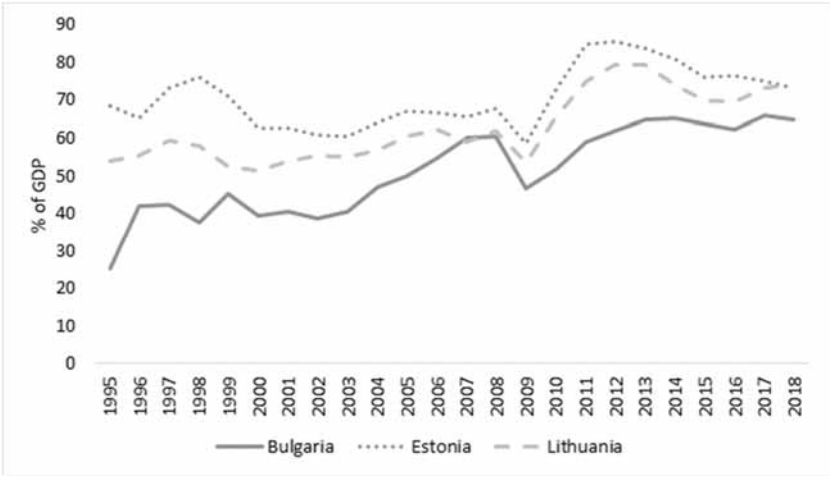
Economic theory also confirms the existence of higher fiscal multipliers in more closed economies, as the larger share of initial fiscal stimuli remains within countries due to lower import outflows. A significant number of researchers, such as Yotozv (2018), Karagyozova-Markova et al. (2013), Ilzetzki et al. (2013), Silva (2014) and Hory (2016), found a higher values of multipliers in more closed economies, than in open ones.

Another important factor that has a significant impact on the size of the fiscal multiplier is the so-called in the economic literature, "output gap" or gap between the actual and potential GDP. The size of the "output gap" helps to determine the phase of the business cycle, i.e., whether the economy is in expansion or recession. The difference in production is the measure most often used to identify economic cycles, as it is considered not only as a reliable indicator for subsequent assessment of the state of the economy, but also as a reliable indicator in real time for fiscal policy-makers. It is extremely important here that a decisive argument for fiscal policy to be more effective in a recession than in an expansion is that in

the event of a negative difference in production (production decline), there is unoccupied production capacity in the economy, which pushes out private investment lower. This situation continues as long as the output gap values are negative, which is difficult to catch from low or negative growth rates.

Figure 8

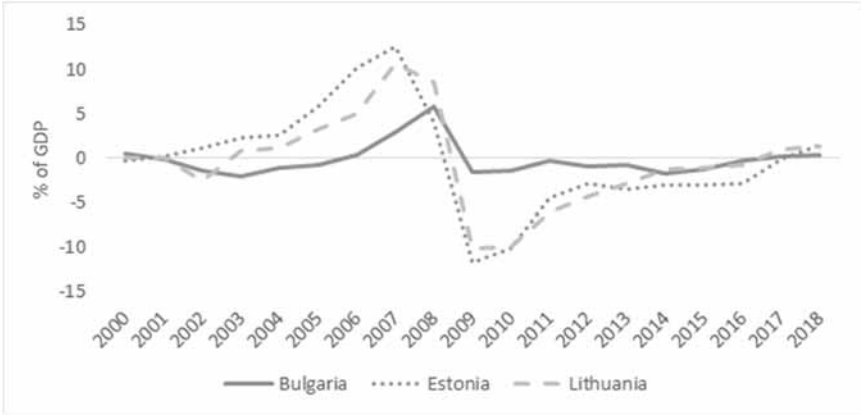
Import penetration* (1995-2018)



** Note: The index "import penetration" is calculated by the formula: Imports / (GDP-exports + imports) * 100. All series are seasonally adjusted.*
Source: Eurostat, Authors' calculation

Figure 9

Output gap (2000-2018*)



Source: OECD[10], Authors' calculation.

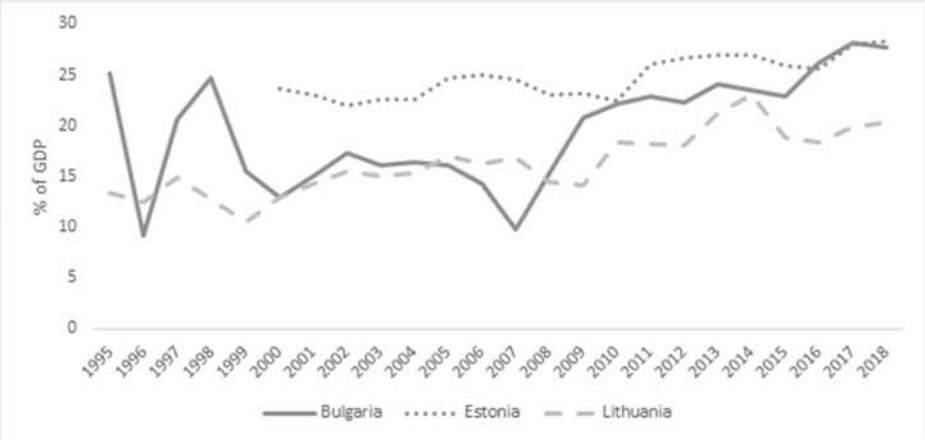
[10] Organisation for Economic Cooperation and Development

Figure 9 shows that with the onset of the global financial crisis, the output gap is rapidly declining for all three countries, consumer and corporate credit growth is declining (Figure 5 and 6), and import is shrinking (Figure 8). These developments explain the fact that the size of fiscal multipliers reaches their maximum values in the midst of the crisis (Karagyozova-Markova et al. (2013)). In the period of economic recovery after the crisis, the values of the "output gap" return to levels around zero and, accordingly, the values of the fiscal multiplier also return to lower levels.

The significant increase in the level of domestic savings is an important factor limiting the size of the fiscal multiplier (Karagyozova-Markova, 2011). Probably a significant increase in the level of domestic savings immediately after the introduction of the currency board and the global financial crisis for Bulgaria (in relation to Estonia and Lithuania this factor does not have such a strong influence), caused mainly as a result of protective incentives, is an important factor in limiting the increase in the size of the multiplier (Figure 10). Much of the fiscal stimulus to mitigate the negative effects of the crisis on the economy comes in the form of savings. As shown by Galí (2007), Corsetti et al. (2012) and (Karagyozova-Markova (2011)), the shock of budget expenditures may have a smaller effect on aggregate consumption as the financial crisis increases the share of liquidated households and firms.

Figure 10

Gross savings (1995-2018*)



** Data for Estonia are available from 2001.*
Source: Eurostat, Authors' calculations

3. Conclusion

The results of this study confirm that fiscal policy is an important determinant of growth in the region of Central and Eastern Europe and is particularly important for countries whose monetary policy is limited and in which the government influences much of the economy, such as the case of the countries included in our study.

The calculated values of fiscal multipliers for Bulgaria and Lithuania are in line with some other empirical studies based on economies in Central and Eastern Europe, where fiscal multipliers are usually small and cost multipliers are larger and therefore more efficient than tax multipliers, as the increase in government consumption has a positive, relatively strong and lasting effect on gross domestic product. However, the results for Estonia show a positive impact of the tax multiplier and a negative impact of the government expenditure multiplier. Which on the one hand could be due to the fact that many countries were forced to implement restrictive fiscal policy and most of the fiscal consolidation measures were related to reducing spending in the public sector and this was an option for effective policy. On the other hand, the negative reaction of GDP to the positive shock of government spending may be due to a combination of a negative current expenditure multiplier and a positive investment multiplier.

The first reason to consider that government expenditures are more efficient than tax measures in terms of stimulating economic activity is that very often in economies there is an "outflow" of the fiscal stimulus, which manifests itself both by increasing demand of imported goods, as well as in terms of increasing private savings (the so-called Ricardian model). The other reason is related to the contradictory results obtained in the scientific literature when calculating tax multipliers using linear VAR models. As Karagyozova-Markova (2013) note in their study, as a whole in the empirical literature there is less division in terms of the results obtained for the size of the expenditure multipliers, while the results for the tax multiplier cover a much wider range. Estimates for tax multipliers also prove to be much more sensitive to the choice of technique for identifying fiscal shock. To some extent, this is due to the problem of fiscal forecasting and the inability of VAR models to properly take into account the fact that changes in tax rates, for example, are often expected and known before the actual change in legislation (Caldara et al, 2008; Leeper, 2008).

In addition, the results of the study confirm the theoretical assumptions about the impact of various factors on the efficiency of fiscal consumption. Specifically, our analysis showed that countries facing a recession, having a fixed exchange rate or being a member of a monetary union tend to have larger multipliers. On the other hand, the effectiveness of fiscal policy is limited in highly open economies, economies with a high level of private and public debt and economies with a high share of gross savings.

The fiscal policy of the countries of Central and Eastern Europe would be successful if its formulation and implementation are subject to firm, sustainable and predictable rules and principles (Minassian, 2010). This means following not only theoretical statements, but also practical requirements and rules that lead to objective decision-making based on evidence and results. Taking into account the objectives of fiscal sustainability and combined with compliance with fiscal rules, countercyclical fiscal policy would have an undeniable positive effect in the long run on the economic development of emerging economies in Central and Eastern Europe, aimed at promoting economic growth (Yotzov, 2013). Otherwise, this would lead to an increase in social tensions with difficult consequences due to the poor quality of public services provided. Therefore, the priority of the fiscal authorities should be to focus on activities such as defining, managing and evaluating the policy in accordance with proven international practices and national requirements.

The performed estimates of the size and dynamics of the fiscal multipliers allow to make some recommendations to the conducted fiscal policy. It is clear that large fiscal packages aimed at stabilizing the economy can easily be "wasted" if countries are influenced by factors that significantly reduce the size of fiscal multipliers. In this case, managers need to look beyond the traditional cost-benefit analysis and take into account fiscal multipliers. On the other hand, in a number of cases, governments face strong opposition when offering a particular fiscal stimulus, or are under pressure to introduce another. In these cases, the decision must be based not on conjunctural effects, but on long-term ones, which implies precisely estimated multipliers. Last but not least, all discussions related to changes in fiscal policy and its highlights should be based on a systematic analysis and not on "fiscal alchemy" and conjunctural political interests.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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Petya Ivanova[1]

EVENT TOURISM DEVELOPMENT IN BULGARIA: KEY FACTORS AND MAIN GOALS

The focus of research interest is on examination the specific features of event tourism and the opportunities it offers for the development of destinations. Global trends in tourist demand and the state of tourism supply are indicative of the relevance of developing event tourism. Special events, especially those that are hallmark events, and tourism that is based on them, are recognised as an opportunity to achieve a range of goals. They can also have an impact on the image, attract tourists and emotionally influence them, which makes them a particularly suitable instrument of the development of destinations.

This study aims to identify the main goals of the development of event tourism, as well as to outline the key factors in their achievement. An expert survey was conducted on the basis of a structured model, including process and result objectives. The results of the study permit identification of key determinants of successful event tourism policy: efficient use of identified event tourism resources; strategic measures at a national level to support and promote event tourism, including building a portfolio of distinctive events for the destination; the implementation of marketing strategies for the distribution and advertising of event tourism, professional organisation; building knowledge on event tourism demand and tourist satisfaction. Today's event tourism management exists via utilising the potential of digital technologies in the design and distribution of the event tourism product.

JEL: L83; L84; M11

1. Introduction

The substantial characteristics of event tourism reflect the lifestyles of modern society, oriented towards demanding a unique experience. In the conditions of increasing competition in the tourism market and the prominent orientation of tourists towards the consumption of unique experiences, it is appropriate for destination Bulgaria to emphasise the emotional value that its distinctive events have to attract tourists.

As a result of changing public values, as well as new dimensions in the use of leisure time, the popularity and the significance of such events are constantly increasing. This, together

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with the presence of events in the country, which are tourist attractions, determines the relevance of the article's thesis and the author's interest in it.

In present days, when the world is affected by the pandemic of COVID-19 and measures related to social exclusion and restriction of tourist trips and public events, the event tourism has been affected and transformed. Its specific characteristics to meet concrete tourist interests and needs, to offer creative and unique experiences, to bring people with similar interests together in one place pose challenges to their management. The need for physical and social isolation to deal with the pandemic has a significant impact on event tourism.

Event tourism as a scientific area is the result of the intersection of two scientific fields – tourism and event management. Although, there are studies dedicated to each of these areas individually, as well as to the cross-over field – event tourism – no similar study of the possibilities for the strategic management of event tourism in Bulgaria has been made.

In addition to the relevance of the survey, we can point out that leisure and recreation organisations are seen as carriers of social transformation. At the same time, they operate in a dynamic, complex and globalised environment. Tourism preferences for the entertainment industry shape certain trends that providers need to take into account. They are mainly related to: the thematisation of routes (destinations); virtualisation; enhancing the role of innovation; integration between travel and other activities.

All this is largely in line with the characteristics and specifics of event tourism, which explains its widespread entry into tourism practice, the scientific interest in the topic, and the need for this research. This study is the first of its kind dedicated to the identification of the factors and significant goals of event tourism for the development of destination Bulgaria. An expert study was conducted on the basis of a model for the assessment of factors and objectives of Bulgarian event tourism. *The research purpose* is to identify the main factors and essential goals in the context of strategic destination management.

The research framework requires the application of a documentary and expert approach to systematise and explain the meaning of the exploitation of distinctive events for tourism purposes. Structurally, this study consists of the following sections: (i) introduction, (ii) literature review, (iii) research methodology, (iv) analysis and results and (v) conclusions.

2. Literature Review

2.1. Theoretical foundations of the categories of special events and event tourism

In the context of the COVID-19 pandemic and in the high-tech and digital era, the need for social events is increasingly emerging in order to capture local and global details in life.

The term "special events" has found a place in the vocabulary to refer to specific rituals, presentations, performances or celebrations that are deliberately planned and created to commemorate an occasion or to achieve social, cultural or corporate goals (Allen J., 2011, p. 11). *To this we can add that events are often organised to attract tourists. When organised by public authorities, they are set not only economically but also to achieve public goals and benefits.*

Special events can be on the occasion of national holidays and celebrations, important civic occasions, unique cultural performances, major sporting events, corporate functions, and trade promotions. This wide range of special event occasions makes this industry so popular. At the same time, it is this latitude that makes it difficult to define special events in a single definition. Getz, one of the most reputable authors in this field, suggests that special events be defined in their particular context (Getz, 1997). However, he offers two broad definitions, one from the organisers' point of view and the other from the visitors' perspective (local or tourist):

- A special event is a one-off or periodic event outside the usual program and activities of the sponsor or organiser.
- For visitors, a special event is an opportunity to experience something beyond the normal range of possibilities or beyond daily experience (experiences).

The author considers that among the attributes that create the special atmosphere are a festival spirit, uniqueness, quality, authenticity, traditions, hospitality, themes and symbolism.

The events are current and a type of tourist attraction with increasing attractiveness. In the specialised literature, it is accepted that the attractions in the destination are formed by a combination of offered resources such as physical, geographical, and cultural. The combination of these elements constitutes the tourist experience and the strategy for positioning the destination. According to Swarbrook, "Tourist attractions are essential resources for the travel industry regarding interest and motive to visit the site (Swarbrooke, 1995, p. 23). The author classifies tourist attractions as four types:

- Natural environment;
- Not specifically designed to attract visitors;
- Designed specifically to attract visitors;
- Events.

In contrast to permanent tourist attractions, which are characterised by time concentration, the events are a flexible capital of definite duration and theme, easily subject to development, improvement and innovation. The distinctive events of a particular destination are related and specific to that particular destination, complement the destination product and, in this sense, are also characterised by spatial affiliation.

Special events are described as fixed-term happenings that allow for social interaction beyond everyday life (Jado, 1998, p. 3). In defining special events, Getz focuses on the uniqueness and differentiation of one place from another. More specifically, special events are defined as, "a short period of time filled with attractive and engaging activities concentrated in a limited geographical area to mark a present or historical fact" (Janiskee, 1980, p. 97). Goldblatt (Goldblatt, 2002, p. 34)summarises that these are, "exceptional festivities held at a specific place, at a particular time and time in order to meet specific needs".

The various definitions of special events can serve to systematise their characteristics. In particular, they are the following:

- Periodic – once a year or less;
- Time limited;
- Organised;
- Topical, while the program may include different activities independent of one another;
- Events occur within a certain perimeter;
- Attractiveness and unique experiences, multisensitivity, orientation to dialogue and interactivity;
- They are non-depreciable and easily adaptable to changes in demand;
- Have no permanent structure.

Getz excludes fairs and exhibitions that are associated with permanent facilities, such as exhibit areas, from the scope of special events. Also, the travelling circuses and stage performances, and conferences held more than once a year, are out of this scope. It is clear that not every event is a special event.

Essential elements of events such as tourist attractions are the spectacle, the ritual, the games, and the inclusion of visitors in the overall festive atmosphere. This atmosphere is one of the reasons for the tourist attraction type.

Events are often described by their visible, tangible components that the promoters create, but part of the mechanism of event tourism is created by visitors. There is a synergistic process involving the tangible and intangible elements that create the atmosphere.

Regarding the characteristics of special events, Jado and Shaw (Jado, 1998, p. 3) outline the following: the ability to attract tourists; the ability to support local development; a limited duration; they are rarely held; they raise citizens' awareness and image of the destination; offer social experience. In general, the review of definitions in specialised literature reveals two main approaches in the study of special events: first, in terms of the characteristics of the event itself, and second, in terms of the possibility of entertainment and recreation, the social and cultural experience of visitors. With regard to the latter, events can become a channel to meet the needs of culture, sports, local food and traditions, and participation in games and entertainment.

Event organisation is not always done primarily for tourism. Destination managers organise and offer events as part of the destination's entertainment mix. In order to be a sellable product and to provoke tourism, the event should be attractive to a specific target segment, with high quality and an accurate price (Hudson, 2003).

We can refer to event-based tourism as event tourism. In the tourist context and as part of the tourism system, events are a key element in both the generating territory (as an important motivator for tourism) and the visited site (as part of the tourism supply). Event management at a national level requires the inclusion of all planned events in a common approach to development and marketing. As with most types of tourism, event tourism is viewed in terms of supply and demand, whereby we have "special" interests for tourists who receive special

experiences (Getz & Page, 2016, pp. 593-631). A significant circumstance characterising the specificity of event tourism is the time constraint of the event – a tourist attraction, as opposed to the permanently existing resources in the destination in the other specialised forms of tourism (Venske, 2019), (Viol, et al., 2018) .

A review of the specialised literature allows us to systematise the following main distinguishing features of event tourism, which are largely related and derived from the characteristics of the event itself:

First. Special events are a tourist attraction for this type of tourism.

Second. It takes place over a period of time when the special event takes place.

Third. The special event is a motive to one degree or another for undertaking the tourist trip.

Fourth. This type of tourism offers unique, non-unified, authentic experiences.

Fifth. Utilises an existing infrastructure and is flexible and innovative.

Sixth. The attraction for this type of tourism (event) is not depreciated.

Seventh. In most cases, it involves the active participation of the tourist, where we have common, mutual creativity and co-creation of value.

It is clear that the systematisation of the specificity of event tourism is deterministic and is a consequence of the specificity of the special events that are its tourist attraction. At the same time, the variety of events makes the different types of event tourism quite different from one another. However, event tourism is one of the channels through which visitors satisfy their desires for entertainment, touching local culture, food, sports, etc. (Tang, et al., 2020)

It becomes clear that the opportunities offered by event tourism at the managerial level, as well as the increased demand as a result of offering specific experiences and atmosphere, are also engaging more and more authors in an analysis of their functions and dimensions. This is also the reason for different definitions in the scientific literature, analyses of event significance, their potential for application in different fields, as well as classification criteria.

For the purposes of this development, we adhere to the basic productions for grouping and typing events.

The review of the specialised literature shows that the events are categorised by different authors using different methods, the main criteria being purpose, scale and circumstances (Table 1).

Goldblatt uses objective criterion and groups events according to this into four main types: celebration, education, marketing and meetings. Festive events refer to personal events, the life of organisations and institutions, and the celebration of historical events. The importance of formal education is increasing and related events can be social or professional. Events are used to stimulate interest or increase sales of enterprise products. Meetings allow people to celebrate certain occasions.

Table 1

Type of events

Gets	**Goldblatt**	**Shone and Parry**
Culture Art Fun Sports Education Recreation Politics Personal Celebrations	Private events Exposures Fairs and festivals Hallmark events Hospitality Meetings and Conferences Trade Social life	Leisure (sports, recreation) Personal (weddings, birthdays, anniversaries) Cultural (ceremonial, sacred, art, cultural heritage) Organisational (commercial, political, charitable)
Bowdin et al.	**Hall.**	**Freyer**
Cultural Sports Business *** Mega-events Hallmark events Major events Local and municipal events	Religious and sacred celebrations Carnivals and cultural events Commercial (business) events Sports competitions Political meetings	Cultural events Sport events Economic events Socio-political events Natural events

Source: Author's research work.

Hall offers the following five main sectors: religious and sacred celebrations; carnivals and cultural events; trade (business) events; sports competitions and political meetings. Similarly, Frayer organises events by including natural events. However, political and natural events are beyond the scope of the concept of special events and are not the subject of research in this paper.

Bowdin distinguishes events by type – cultural, sporting and business, and by scale. In terms of size and scale of impact, the general categories are mega-events, hallmark events, big events and local (municipal) events, although the definitions are not precise and the differences may not be as noticeable. The scale of impact is measured by participation, media profile, infrastructure, costs and benefits.

Depending on the role of the event in a complex tourism product, two main types of events are distinguished: (i) self-sufficient or 'fundamental' events and (ii) additional or 'complementary' events. The former are a major component and act as a tourist attraction of the tourism product, having the primary purpose of attracting tourists and visitors, while the latter are a complementary element, a tourist attraction in the tourism product and their main purpose is the positive image of the destination as "a place where interesting things happen."

Demand for event tourism is on the rise, and tourists' expectations are rising, with the requirement for the complexity of experience increasing. At the same time, one important characteristic of event tourism is its flexibility, which, together with its other characteristics and importance, make it an appropriate management tool for achieving tourism goals. The

topic is under development and there have been current studies, that provide an agenda for future event tourism research (Getz & Page, 2016) (Wilson, et al., 2017) (Laing, 2018).

2.2. Significance and possible impacts of special events and event tourism

From the point of view of event tourism management, knowledge of its importance and potential for impact are essential. The importance and the role of event tourism are closely and significantly related to the noteworthiness of the event itself. Getz examines the economic and non-economic role of events and event tourism derived from these in his research (Getz & Page, 2016). With regard to tourism, he points out that events can attract tourists (and other interested parties such as sponsors, the media, etc.) who would not otherwise visit the place; the costs that tourists make generate economic benefits for the place, business and the local community; event tourism can be a leverage mechanism to reduce seasonality in demand, tackle geographical inequality, and support other forms of urban and economic development; a portfolio can be designed to maximise positive impact by attracting multiple target segments.

Freyer (Freyer, 1998) divides the effects of the events into visit-oriented and visit-oriented events and locally-relevant events (Table 2).

Table 2

Tourist goals and effects of events

Externally oriented	*Internally oriented*
• Attractiveness for visitors	• Attractiveness for the locals
• Increasing the number of visitors	• Promoting culture
• Increasing popularity	• Preserving the culture
• Creating an image	• Internal marketing
• Seasonal effects	• Economic effects

Source: Freyer, W. (1998).

The external effects, in general, are related to increasing the tourist attractiveness of the destination for tourists, attracting new target groups and thus increasing the number of tourists. The degree of popularity and good image contribute to the fuller utilisation of the existing infrastructure and superstructure, and increase employment. The timely positioning of events outside the active season contributes to a more even load and balances the distribution of visits.

Some of the key benefits and characteristics of event tourism are related to the following: it has higher returns and, as a rule, higher quality than recreational tourism; with less seasonality; uses the existing infrastructure for recreational tourism; it is resistant to economic downturns; stimulates future investments in the destination; creates jobs for event-related services and more.

In the context of changing tourist behaviour, event tourism is becoming a resource for enhancing the image and promoting the further development of tourism in the visited country. (Devine, 2017, p. 320). Following the most widely used significance of events, it creates a

positive image of the destination and to support the brand or repositioning. Well-organised events contribute to destination marketing, making the place more attractive (Higgins-Desbiolles, 2018), (Kelly & Fairlay, 2018), (Chibir & Shirko, 2015).

The events enliven places, resorts, parks, urban areas, making them more attractive to visit. Event tourism acts as a catalyst for other forms of desired development (urban regeneration, capacity building, volunteering, sophisticated marketing) and thus generates long-term or permanent effects. Following the most widely used significance of events is to create a positive image of the destination and to support the brand or repositioning. Well-organised events contribute to destination marketing, making the place more attractive. The vital role of community in event tourism is often overlooked and events may be imposed on them as event are harnessed for tourism growth agendas (Higgins-Desbiolles, 2018).

From a destination point of view, event tourism, in addition to marketing, brings economic and social benefits, and their ability to extend the life cycle of the destination is equally important (Getz, 1988, p. 25). Getz systematise plan and process goals and outputs of events. Some authors also add the effect of competency acquisition (knowledge, innovation is generated), and network effects (cooperation and links between partners). The growing importance of event tourism destination management is recognised and hallmark events are core components of destinations managed events (Todd, et al., 2017).

With the growing role of technology, destinations receive media coverage from the events. The events direct the tourists to the specific destination in which the event will take place and, depending on the level of satisfaction, they associate the destination with the event. It is sometimes a catalyst for the creation and renewal of infrastructure and superstructure, and of urban development in general.

In a summarised way, we can present the direct benefits of event tourism for the tourist destination as follows:

- Revenues for the economy, including outside the active tourist season on site;
- Increasing support for local businesses – hotel accommodation, food, restaurants, transportation, other business offerings.
- It may encourage tourists to stay longer in the destination.
- It has the potential to be a tool to reach both a narrow and a broad target market.
- Enhances the destination image and supports the advertising, positioning and branding of the destination.
- Is part of the communication strategy, awareness and brand building.

The main long-term and indirect effects for the destination can be attributed to: improving infrastructure; attractive investments from large companies; improved quality of life for locals; unique experiences for tourists; building a destination brand; adding value to place identity; presenting the distinctive character of the place.

Networked event quality is one of the reasons many cities around the world are increasingly interested in using events to achieve the desired cultural, social and economic outcomes

(Larsen & Berenhold, 2019). The reasons why more and more cultural and other events take place mainly gravitate toward the following:

- Events are more flexible than some types of fixed physical infrastructure;
- The events help differentiate the physical environment threatened by serial reproduction;
- Events are more likely to offer spectacle and atmosphere;
- The events satisfy the need for a shared presence and a sense of "being there" and gathering people with similar interests;
- They may not require many resources but have an impact in the short term.

On the other hand, there are certain negative impacts on event tourism destinations: some events divide rather than bring one community together; mega-events have high economic returns, but encourage individual ethnocentrism and competition between peoples rather than a worldview and a spirit of cooperation. There are also problems caused by noise, collision, increased risks, exceeding the carrying capacity of the destination. At the same time, however, some cultural events take place because of the differences between hosts and guests. They emphasise these differences and may cause this inequality to affect the host-guest relationship (Yu, et al., 2020) (Walters, et al., 2016).

It is crucial for the organisers of the event to be informed and involved. It is important to engage the local community, because if they are dissatisfied, these experiences reflect on the experiences and entertainment of the event's visitors. (Kim, et al., 2015). There are also examples of protests against certain events that undoubtedly have a negative impact. Event organisers evaluate this and develop strategies for engaging the local community in event planning, maintaining good community relationships, and monitoring the perception and attitude of the event. Social media like Facebook, Twitter, Flicker, YouTube allow you to reach the audience and get feedback from the local community (Laing, 2018).

Developing 'event' can make cities, tourists and residents more attractive. At the same time, they can strengthen the stakeholder network and organisation, which is very important for maintaining the creative potential of the site. They function as 'structural openings' in the social fabric of the city (Getz & Page, 2016, p. 598). Events attract attention and focus this attention on creating new opportunities.

The key to developing event tourism is to start with your own creative power and resources. In this sense, each place has different potential and challenges that require good knowledge and management.

3. Research methodology

The public register of tourist attractions created by the Ministry of Tourism of the Republic of Bulgaria, section "Festivals and Events" (Bulgaria, 2019), serves as an information base for the events in Bulgaria that have the potential to attract tourists. As of December 2019, 1868 festivals and events have been registered there and is available at

http://rta.tourism.government.bg/TFRegister.aspx. The National Strategy for Sustainable Tourism Development of the Republic of Bulgaria 2014-2030 states that 99% of the events and festivals are of international importance. Information about the numerous events is used by specialised portals: https://opoznai.bg/ in the events section and at https://fest-bg.com/.

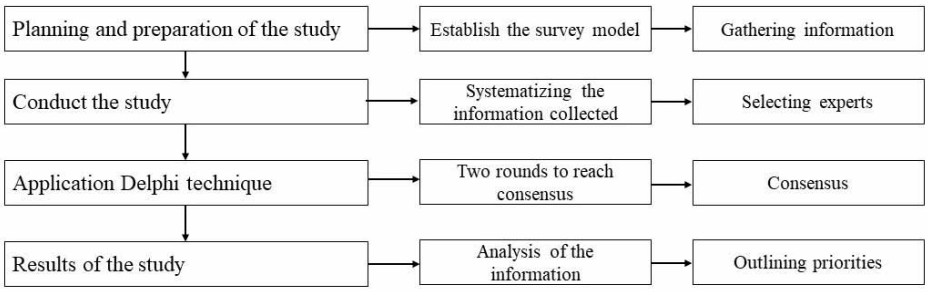
The documentary analysis also includes a study of the offers from tour operators and what is included in their organised tourist trips in the total cost, and events in Bulgaria with tourist potential. Within this stage, events that have both internal and external effects are examined. The results of the research conducted among experts are used as a basis for clarifying the possibilities for the strategic management of event tourism in Bulgaria.

The starting point in modelling the key factors, and the process and result goals of event tourism development is their identification. The results of published theoretical studies and available public information were used as a basis for this.

The study algorithm is presented in Figure 1.

Figure 1

Conceptual model of this study



Source: Author's systematisation.

The main stages of empirical research include the following algorithm of action:

Stage 1 – Planning and preparing the survey – refining the survey, gathering information;

Stage 2 – Conducting the study – systematising the information collected, selecting experts to participate in the study.

Stage 3 – Examination of expert opinion (Delphi method) on the factors and the goals of the development of event tourism in Bulgaria.

Stage 4 – Results of the study – analysis of the information received, outlining priorities, guidelines for development and reserves for improvement.

To perform the analysis, a set of techniques were applied, that are applicable to the relevant object of the study and in relation to the intended purpose.

The methods used in the study are well-established techniques such as: collecting, organising and analysing existing information – using official sources of information – sites by official public and private organisations, approved tourist portals, organisers and promoters of an event tourist product; observation; resource audit; website audit; social media audit; situational analysis; Delphy method, formal and informal meetings with experts; expert survey questionnaire.

The sequence of application of the methods is logically related to each other and complementary. The choice of methods is based on their applicability as well as their established strengths contributing to the objectives of the study. The methodology is based on secondary data supplemented with primary data. Expert judgment was chosen as the most appropriate method to collect primary information. The empirical study was conducted in two stages. The first stage involved the development of a model for the evaluation of the key factors and goals for the development of event tourism in the country. The second stage was related to conducting expert research and data analysis.

The purpose of the application of the Delphi technique in the study is to reach a consensus on the main factors and goals of event tourism. There are 16 participants in the research, forming four panels, each representing a relatively homogeneous group. A first, academic panel, consisting of key experts to study the problems of event tourism (6 experts). A second, political panel of experts to shape the tourism policies (3 experts). A third, institutional panel of department managers to manage tourism at a destination level (4 experts). And a fourth, panel of experts in the field of event management (3 experts). The toolkit consists of two polls, respectively for the first and second round. The task of the first round is informing and testing the completeness of the formulated key factors and goals. For this purpose, the experts are presented with a version of a list of key factors and goals of event tourism, which they can supplement or reduce. Based on the answers from the first round, a systematisation is made, as feedback to the participants, which combines the opinion of all participants from the Delphi group. The task of the second round is reaching a consensus among the participants on the degree of importance of the respective goal and a key factor, which the experts assess on a five-point scale: minimum score, 1- does not matter, and maximum score, 5 - very important. Due to the high degree of overlap of opinions after the first two rounds, a third round was not needed.

In conducting the Delphi study, the three principal advantages of the method as a consensus technique were observed, which ensured the reliability of this qualitative study. Anonymity was guaranteed the surveys being conducted individually. Repeatability was observed as the survey was conducted in two rounds and feedback was provided along with handing over of the second questionnaire and the consensus summaries that each Delphi expert received. The responsibility shown by the participating experts could also be included as a key factor in ensuring the reliability of the study.

The survey involved generating information on the use of event tourism opportunities in a portfolio approach to tourism development in Bulgaria. To this end, we applied an adapted system model. The model was validated through feedback from an expert opinion survey. The choice of a survey as a method of conducting a survey among experts gives comparability of the results by individual groups and the possibility of direct comparisons.

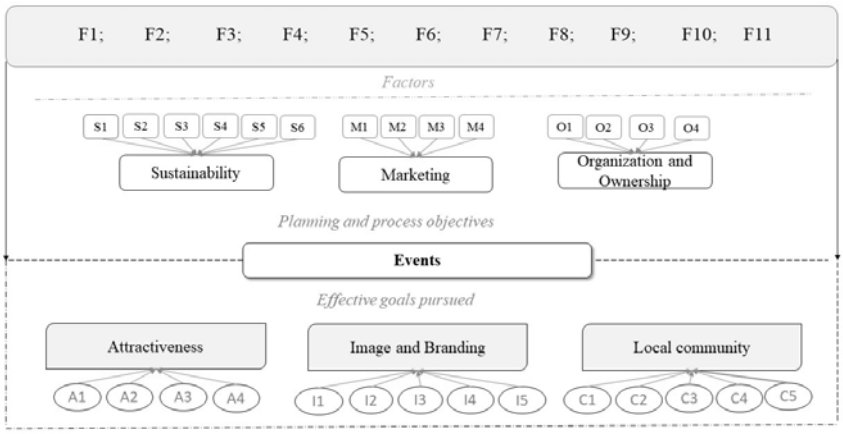
Thus, the priority areas for special events management are identified so that the most important and relevant goals for tourism development in the country are achieved.

The model presented also has the character of an event management and destination management tool to more precisely outline the directions for enhancing event effectiveness and making informed, expert-based decisions.

The model logic and structure is illustrated in Figure 2.

Figure 2

Structural model testing



Source: Adapted by the author on Ferdinang, N.P (2017); Getz, D. (2012).

The key factors in creating an event that can provoke tourism are (Ferdinand, 2017):

- F1 – Context: Develop a program that is appropriate at that moment. Each place is in a different phase of historical, cultural, social and economic development and this should be taken into account.
- F2 – Involvement of the local community: the engagement and the ownership of the local population need to be managed in an appropriate and effective manner.
- F3 – Partnership: developing partnerships between different stakeholders. This includes cultural institutions, local independent organisations and groups, business and tourism sectors and social organisations.
- F4 – Long-term planning: preliminary and subsequent planning.
- F5 – Clear goals: a clear definition of intentions and goals.
- F6 – Strong Content: The program must be unique and visible, balanced with different types of projects.

- F7 – Political independence and artistic autonomy: the program of the event should not be influenced by political interests and the operating structure should have artistic programmatic autonomy.
- F8 – Good communication and marketing: a clearly defined communication strategy.
- F9 – Sufficient capital: The approved budget should be available as early as possible in the preparation phase.
- F10 – Strong leadership and leadership team: An independent director with international vision and leadership skills.
- F11 – Political will: the project needs political support to provide the desired influence.

These factors are important for any event. Effectively unlocking its potential requires paying attention to three issues: involving local people, co-creating events with different partners and willingness to take risks.

Goals and the planning process are seen as success factors that organisers and supporters need to consider when planning and hosting an event. Their relative importance may vary. The goals and the process are sometimes highly interconnected or overlapping. The model captures the key features of distinctive events, not so much the nuances and the full explanation of each aspect, which makes it not only applicable to the purposes of this study.

The attractiveness is measured by the number of people who are attracted to the event, the geographical distribution of the issue market, or the attractiveness of the competition. The term "attractive force" is also used, which is related to the distance, travelled by people to engage in the attraction. This is related to the marketing concept of "unique sales offer" and, in relation to distinctive events, it is related to the topic of authenticity.

Distinctive events can help to create a positive image for the destination and provide co-branding. To do this, professionals recommend active and coordinated brand management; periodic image testing of all stakeholders – local residents, visitors, industry and elected officials managing the site; professional media management. Periodic events (such as the distinctive events under study), as compared to one-off events, have, of course, more opportunities for media coverage and, accordingly, more opportunities to enhance the image. Distinctive events play an additional role in on-site marketing to help attract residents and investors, leading to branding effects. Co-branding refers to the efforts of two or more partners to associate their individual brand with a common purpose.

A significant goal of these events is to provide multifaceted benefits to local people economically, and is mainly associated with those for the local tourism industry and to reduce the negative effects of seasonality in demand. The goal is also to make the event a tradition, such as participation and funding, and to become a kind of institution among the local community. That is why it is of utmost importance that the local population attends the event. Unlike distinctive events, mega events are large and with strong external and internal effects, but are usually one-offs and owned by external owners and stakeholders, with many set standards, making them less complex in terms of the destination and the local community.

Effective goals pursued with distinctive events

Attractiveness

A1 – Developing an attractive unique theme and program that attracts residents and targeted segments of tourists with special interests: identifying a key market or segment; marketing research at the planning and refinement stage of the event;

A2 – Producing a high-quality event, focusing on customer value and satisfaction: quality can be measured by bench-marking with other successful events; the topic and program are specified by experts; continuous monitoring of customer satisfaction with a purpose and positive future recommendations.

A3 – Developing appropriate event venues: involving the community in identifying suitable venues, identifying the need for new infrastructure and improvements; considering aesthetic and functional sites, design and capacity.

A4 – Developing high standards and accessibility in terms of services and supplies: offering basic services that meet visitor needs.

Image and branding

I1 – Generation and establishment of positive media coverage of the event and destination: integration of event and destination marketing; visual planning and messages in the concept of the event and integration in all aspects of design and production.

I2 – Developing and establishing a strong media partnership: getting media input when planning and evaluating; maximising the number and type of media sponsorship.

I3 – Developing and constantly monitoring the value of the brand: accepting the event as a brand with it's own value, co-branding with the destination; building brand value with the target segment jointly between the event and related experiences in the destination.

I4 – Maintaining a positive event image among all stakeholders: monitoring media coverage; audience impact studies.

I5 – Specifically promoting a strong reputation through media communication, quality, uniqueness and positive word-of-mouth recommendations: media management should include dealing with image issues; managing word-of-mouth attention regarding the product, co-creating experiences and rewards.

Local community

L1 – Creating specific benefits for the local community: creating better employment; improving infrastructure; new entertainment options; the revitalisation and better use of existing facilities; raising a sense of pride; new forms of social interaction and integration; new improvements and design (lighting, public art).

L2 – Creating attractive volunteering opportunities and other forms of participation: measuring the number of volunteers, participants; improving local development capacity; improving organisational and decision-making capacity; network cooperation; demonstrating innovation and vision.

L3 – Avoiding and, where necessary, alleviating negative impacts on the community: avoiding traffic and parking problems, noise and other threats; avoiding crowds, keeping the peace; avoiding negative environmental impacts – waste, recycling, and control of sensitive areas.

L4 – Maintaining political satisfaction and support for the event: ensuring regulatory approvals: lobbying to obtain funding and key votes; internationalising political support.

L5 – Implement full cost and benefit reporting, management and planning: consider monitoring and control transparent to residents and other stakeholders.

Analysing and considering distinctive events as a system requires clarification as to how elements of that system interact with the environment in order to achieve results.

Planning and process goals for special events

Sustainability

S1 – To be an environmentally friendly event in all activities and impacts: compliance with sustainable development standards

S2 – To be socially responsible for the event in all activities and influences: to conclude a contract with the local population – transparency and accountability.

S3 – Ensuring adequate resources are permanently available for the development and growth of the event: generation of additional contingencies and investment capital, periodic financial crises should be foreseen including how to deal with them, adopt business planning and budgeting, monitoring performance and generating additional revenue.

S4 – Risk Assessment – Initial and Annual: observing and forecasting factors and trends influencing demand, including competitive events and attractions; conducting a financially sensitive analysis; conducting risk prediction for the public, users, participants, the environment, staff and volunteers.

S5 – Impact control, through a three-pronged approach: environmental, social, cultural and economic measures.

S6 – Organization and networking to adapt to changing conditions and periodic updates: strategic planning; strategically oriented staff; rules for adapting the structure.

Marketing

M1 – Effective management of the marketing mix to achieve the goals. The external elements are: product, place, program and people; the facilitating elements are: price, packaging,

partnership and promotion/communication. The product is a unique quality experience for residents and tourists. It is advisable to offer a tourist package. A long-term strategic partnership is a key process objective. Keeping the event fresh is a constant challenge.

M2 – Implementation of a quality control system and continuous improvement. Covering the quality of management, staff, program, services, communications. Adoption of management standards (ISO20121).

M3 – Building and establishing loyal audience relationships, positive recommendations, committed staff, volunteers and sponsors. Implementation of strategies for involving the local population. Permanent connection with the tourism industry.

M4 – Apply strong consumer orientation, especially in niche market segments. Utilisation of training and research organisations. Striving for continuous improvement.

Organisation and ownership

C1 – Ensuring adequate capital investment and other necessary resources: ensuring optimal balance between responsibilities of commercial (for profit), voluntary and public organisations; possible costs; conducting necessary risk agreement.

C2 – Maximising industrial and municipal investment (promoting a sense of ownership) and providing ongoing support from all key stakeholders: internationalisation of key stakeholders; continuous lobbying; ensuring full accountability to stakeholders.

C3 – Ensuring a high level of professionalism in all aspects of event planning and management: professional selection and a staff development system; implementation of a voluntary training system and "career" path.

C4 – Promoting and evaluating innovation in all aspects of event planning and management: innovation must follow the professionalism of the staff, volunteers and stakeholders; use of external experts and bench-marking; management promotion system; bench-marking with successful events reveal weaknesses and opportunities.

A clear interpretation of sustainability as a three-pronged approach to economic, environmental and social goals is essential for distinctive events to be a permanent institution. This includes demonstrating green ideas and corporate social responsibility, accountability and transparency in public spending, and demonstrating benefits to the local community.

The management of the entire marketing mix begins with a permanent and close relationship with the tourism sector. This sector requires the constant consideration of its product and should package it and market it with the event. Market and consumer orientation are required to be competitive regarding an event, especially when the target market is niche. Most events reflect the identity of the venue and must have a strong brand and one or more unique sales offers. There is a risk of tension between the event brand and site image if they are different and incompatible. Domestic destination marketing reflects on events and all stakeholders become ambassadors for the event.

In terms of organisation and ownership, most often, distinctive events are organised by the non-governmental sector with a certain level of support and control from public authorities. Organising them in the private sector is more problematic due to the fact that the community wants to feel that it is the owner of traditions and image, and that politicians and other stakeholders are involved in the support.

4. Analysis and results

As regards the importance of the factors for the development of event tourism, the average expert evaluation is given in Table 3. The need for partnership between all stakeholders is highest rated (average 4.82), followed by equal assessments of: involvement of the local community, strong program content and clear goals (rating 4.64 with a maximum of 5) and the destination for developing an event that has traditions associated with it (rating 4.63).

Table 3

Factors in the development of event tourism

Factor	Rank	Mean
Partnership between all stakeholders	1	4.82
Involvement of the local community	2	4.64
Strong program content	2	4.64
Clear goals	2	4.64
The destination must develop an event that has traditions associated with it	3	4.63
Leadership	4	4.60
Political independence and artistic autonomy	5	4.54
Adequate capital	5	4.54
Long-term planning	6	4.45
Communication Policy	6	4.45
The destination needs to develop an event that is right for it at that particular moment	7	4.09
Political will to realise the event	8	3.73

Source: Authors' calculations.

Knowledge of how experts prioritise the different guidelines to be applied in event tourism management is essential (Table 4). First of all, there is a need for a strategic approach to event tourism in the country (rating 4.73 with a maximum of 5). Next in importance are: harnessing the capabilities of digital technologies and security and safety strategies (rating 4.45).

The popularity of events held in the country and the positive image with which they are associated should be part of the tourism policies pursued and that are incorporated. The tourism potential of the events should be strategically placed as a priority when conducting that event. In order to maximise this potential, it is important that tourism influences are properly planned. The destination in which they take place must adopt a strategic approach to event tourism and its principles before putting it into practice. This strategic approach should be focused on building the desired image and branding of destination Bulgaria (Table 5).

Table 4

Directions for the development of event tourism in the country

Directions	Rank	Mean
Strategic approach to event tourism in the country	1	4.73
Harnessing the capabilities of digital technology	2	4.45
Security and safety strategies	2	4.45
Public financing of the events	3	4.36
Development of the event industry in the country	4	4.18

Source: Authors' calculations.

Table 5

Assessment of the importance of the main goals for the development of event tourism in Bulgaria

Goal	Rank	Mean
Image and branding of destination Bulgaria	1	4.82
Benefits for the local community	2	4.73
Attractiveness – increasing the number of tourists	3	4.45

Source: Authors' calculations.

This fact is confirmed by the assessment of the main positive impacts of event tourism in the context of destination management and marketing. The experts mostly appreciated the use of this potential for building image and branding (rating 4.82), followed by benefits for the local community (rating 4.73). To a lesser extent, priority is given to using event tourism to increase the number of tourists (estimate 4.45).

The attractiveness of the events is a measure of their ability to attract the number of visitors, their geographical distribution on the market, and the presence of advantages over competitors. When looking for a measure of attractiveness, reputation is paramount, so it must be maintained and promoted in the long term. Persistence and traditional local support are essential prerequisites, especially as some of these events use permanent facilities and the community is the setting and scene for the event.

The importance of building a reputation for providing a satisfying experience, and therefore, joint branding between a distinctive event and a destination, was appreciated. An event may not be successful if the visitors are not satisfied, which means that a customer-centric approach is vital. Placing the user in the centre provides guidance for planned and operational actions. The knowledge about real and potential users is a determining factor for success. Facilitating social interactions is one of the best ways to reach a wide audience, as social motivators often draw people to events. This is especially relevant when niche markets are targeted and the event is relevant to a particular social circle (Table 6).

In order to achieve attractiveness, the highest rank is obtained by the need to develop appropriate event venues (rating 4.63), followed by the production of a high-quality event, and focusing on consumer value and satisfaction (rating 4.54).

Table 6

Assessment of the importance of major activities for achieving attractiveness for the events

Activities to achieve attractiveness	Rank	Mean
Developing appropriate venues for events	1	4.63
Producing a high-quality event, focusing on customer value and satisfaction	2	4.54
Developing an attractive unique theme and program that attracts residents and a targeted segment of special interest tourists	3	4.45
Developing high standards and accessibility in terms of services and supplies	3	4.45

Source: Authors' calculations.

Table 7

Objective activities – benefits for the local community

Activities to the purpose benefit the local community	Rank	Mean
Avoiding and where necessary mitigating negative impacts on the community	1	4.82
Creating specific benefits for the local community	2	4.45
Implementing complete cost and benefit reporting, management and planning	3	4.09
Creating attractive opportunities for volunteering and other forms of participation	4	4.00
Maintaining political satisfaction and support for the event; ensuring regulatory approval	5	3.55

Source: Authors' calculations.

In order for the local community to benefit from the development of event tourism, experts consider the most significant activity to be avoidance and, where necessary, mitigating the negative impacts on the community for which they have rated 4.82 (Table 7). It is noted that maintaining political satisfaction, supporting the event and securing regulatory approvals are activities of the lowest importance regarding benefiting the local community (3.55 at maximum 5).

Table 8

Objective activities – image and branding

Activities for the purpose of image and branding	Rank	Mean
Maintaining a positive event image among all stakeholders	1	4.82
Developing and establishing a strong media partnership	2	4.73
Generating and establishing positive media coverage of the event and destination	2	4.73
Specifically promoting a strong reputation through media communication, quality, uniqueness and positive word-of-mouth recommendations	3	4.45
Developing and constantly monitoring brand value	4	4.09

Source: Authors' calculations.

One of the most commonly pursued goals is to help create a positive image for the destination/community and to become recognisable synonymously with it (Table 8). Therefore, active and coordinated brand management is required at the event, community and destination level. The image of the event should be reviewed periodically by all stakeholders, including residents, visitors, elected officials and industry representatives. The role of the media is crucial; it requires the development of strong media partners.

It is widely accepted that major events strongly influence the image of the host community or country, leading to a positive perception of the place as a potential travel destination. With global media attention focused on the host city, even in a relatively short period of time, huge publicity will be gained.

According to expert estimations, image and branding activities are the most important in the scope of the goal: maintaining a positive event image among all stakeholders (average score 4.82); developing and establishing a strong media partnership (average score 4.73).

By their very nature, planning and process goals are a complex system composed of many elements. Those that are significant for event tourism in Bulgaria are included in the model and researched for the purposes of development.

Sustainability is essential to the realisation of events. For them to exist periodically, they must be economically viable. Due to their affiliation with sponsorships, society, partners, media, it is advantageous to associate events with an environmental focus and corporate social responsibility. Transparency and accountability of the use of public funds are linked to the demonstration and a clear demonstration of benefits for the local community (Table 9).

Table 9

Assessment of the importance of the main activities for sustainability

Activities to achieve sustainability	Rank	Mean
To be an environmental event in all activities and influences	1	4.45
Impact control through a three-pronged approach – economic, social and environmental	1	4.45
Make the event socially responsible in all activities and influences	2	4.36
Ensuring adequate resources are permanently available for the development and growth of the event; Generation of additional revenue for unforeseen expenses and capital for investing	3	4.18
Risk assessment – initial and annual	4	4.09
Organisation and a network to adapt to changing conditions and periodic updates	5	3.90

Source: Authors' calculations.

Among the sustainability activities, experts place the event being environmental in all activities and impacts first (average rating 4.45) and the control of impacts through a three-pronged approach – economic, social and environmental (average 4.45). The least significant, with an average score of 3.9, is creating an organisation and a network to adapt to changing conditions and periodic updates.

Managing the marketing mix implies close links with the tourism sector, which over time will require changes to the product itself - pricing, services and the overall distribution of the event. Market and consumer orientation is required to keep the event competitive in attracting and satisfying tourists, especially when niche markets are targeted. Quality and value for the consumer are a must.

The event should reflect the values and identity of the community and have a strong brand. Staff, volunteers, suppliers, sponsors and other stakeholders are ambassadors of the event

and its organisation. Keeping in touch with the community can be essential in maintaining support (Table 10).

Table 10

Assessment of the importance of the core activities to achieve the goal of event marketing

Event marketing activities	Rank	Mean
Apply strong consumer orientation, especially in niche market segments.	1	4.7
Effective management of the marketing mix to achieve the goals. The external elements are: product, place, program and people; the facilitating elements are: price, packaging, partnership and promotion/communication.	2	4.6
Building and establishing loyal audience relationships, positive recommendations, engaged staff, volunteers and sponsors.	3	4.4
Implementation of a quality control system and continuous improvement.	4	4.3

Source: Authors' calculations.

In support of event marketing, experts consider the strong implementation of a strong consumer orientation as important (average 4.7), followed by effective management of the marketing mix to achieve goals and build loyal audience relationships, positive recommendations, engaged staff, volunteers and sponsors.

Most events are part of the non-profit sector and use public funds, public ownership and are subject to control. This is due to the fact that the community needs to feel they have ownership of their traditions and image, and for politicians to support it.

Event management requires a high level of professionalism. Events require adequate planning, resources and funding (Table 11).

Table 11

Assessment of the importance of the main activities in terms of organisation and ownership of the event

Activities – organisation and ownership of the event	Rank	Mean
Ensuring adequate capital investment and other necessary resources	1	4.8
Maximising business and municipal investment (promoting a sense of ownership) and providing ongoing support from all key stakeholders	2	4.6
Ensuring a high level of professionalism in all aspects of event planning and management	3	4.5
Promoting and evaluating innovation in all aspects of event planning and management	4	4.2

Source: Authors' calculations.

The results of the study show that providing adequate capital investment and other necessary resources (average score 4.8) together with maximising business and municipal investment (promoting a sense of ownership) and providing permanent support from all key stakeholders (average rating 4.7) are measurements of paramount importance for the organisation of events.

5. Conclusions

The results of the empirical study identified four key determinants of a successful event tourism policy:

- Identification, provision and efficient use of event tourism resources.
- Strategic measures at national level to support and promote event tourism, including building a portfolio of distinctive events for the destination.
- Implementation of marketing strategies for the distribution and advertising of event tourism, and professional organisation.
- Building knowledge regarding event tourism demand and tourist satisfaction.

The main statement in this paper is the argumentation of the framework set out in the introduction regarding the object under study. From the literature review, it was concluded that special events also play an important role as part of the development of the destination in host communities. Property, type, theme or size are not definitive characteristics.

The strategic management of event tourism involves the determination of the main goals and their realisation in terms of the resources available. In this sense, the research results which are presented can serve as a framework for managing the overall process of planning and implementing event tourism. It summarises the main factors and goals of the events and proposes certain aspects of their design and planning.

The model is useful for assessing and auditing existing events as well as for building an event portfolio. The study aims to help management more accurately outline directions for improving the performance of events so as to increase destination effects and make informed decisions.

Based on what has been said here, we can point out certain trajectories for better use of the opportunities of event tourism.

First. Event tourism is first and foremost a by-product of an event and in the long run it will only have a future if a reputation for quality is developed. The event and tourism industries need to be supported to invest in expertise, competencies and professionalism.

Second. Within the marketing of destination in Bulgaria, it is appropriate to develop a balanced portfolio of events – different types, scale and timing. As a strategic approach, apart from the diversification of the tourism product, it is a tool for a more even distribution and streamlining of tourist flows across time and geographical space.

Third. Establishing funding programs to support special events with full transparency of spending. Funding should be linked to the creation of a portfolio of events that are temporally and spatially selected for the distribution of tourist flows and the extension of the tourist season.

Fourth. Utilising the potential of digital technologies in the design and distribution of the event tourism product.

Cohesion, changes in the economy and, in general, changes to public life as a result of the invasion of technology, again raise a number of questions and challenges that need to be answered and addressed.

Digitization also affects topics with a significant social and cultural dimension and, in general, on the even more global issue of sustainable development. The pursuit of sustainable development is based on the search and acquisition of methods, tools and working solutions with a trinity of economic, environmental and socio-cultural goals, which we hope to offer with this study.

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SUMMARIES

Dimitris Kallioras
George Petrakos
Maria Tsiapa

THE GEOGRAPHY OF TRADE AMONG THE EUROPEAN UNION AND THE EUROPEAN NEIGHBORHOOD POLICY COUNTRIES

The paper analyzes empirically the geography of trade flows among the European Union countries and the European Neighborhood Policy countries. Focusing on the period 2000-2010 and utilizing trade data derived from COMTRADE Database, the paper draws conclusions with respect to the European Neighborhood Policy undertaking. The empirical analysis of the paper highlights that the European Neighborhood Policy countries are engaged in an asymmetric, inter-industry, type of trade activity with the European Union countries, facing serious difficulties in restructuring and diversifying their productive bases. Hence, the trade component of the European Neighborhood Policy does not provide a solid stimulus in the process of "neighbourhood Europeanization". The findings of the paper provide valuable insight to both economic integration theory and policy-making, and, albeit specific to the European Neighborhood Policy countries, may be relevant also to other countries currently deepening their integration with the EU.
JEL: F12; F14; F15

Irena Zareva

(RE) INTEGRATION OF RETURNING MIGRANTS INTO THE ECONOMIC LIFE IN BULGARIA

The paper addresses issues related to the impact of external migration on the labour market in Bulgaria, with a focus on returning migrants and their participation in the labour market in the country. The study is based on data from a representative national survey conducted in 2017. Characteristic of the labour status of migrants as a whole and by separate groups is made. A comparative assessment of the employment status before the first departure and after the last return is done. Main problems for the participation of migrants in the labour market in Bulgaria and the need to support their reintegration into the economic life in the country are identified.
JEL: J62; J24

Nevena Byanova

EFFECTS OF THE EU ELECTRICITY MARKETS OPENING ON COMPETITION AND PRICES

The paper studies the ongoing regulatory, institutional and organisational developments in EU energy sector during the last two decades that change the way electricity markets operate. In particular, it addresses the EU efforts in creating competitive and sustainable electricity markets. Its aim is to explore the effects of the reform on market competition and electricity price evolution. The paper firstly presents the specific aspects of the electricity market, which helps to understand its overall functioning. The

current electricity market structure, participants behaviour and market performance are discussed. The analysis presents the contradictions between the EU energy and climate targets and their adverse impact on end-consumers, who are stated as the main beneficiaries of the reform. The study comes to the conclusion that the persistence of shortcomings in the electricity market defined by policy deficiencies at an EU level and diverging energy policies at a Member State level requires further efforts to make national markets work as a single European energy market with common rules and prices.
JEL: D40; Q20; Q41; Q42

Spartak Keremidchiev

THEORETICAL FOUNDATIONS OF STAKEHOLDER THEORY

The article seeks to answer the question: on what foundations is the theory of stakeholders built. The contributions and achievements of economic, political and legal theories and concepts used in this theory, such as strategic management, systems analysis, motivational theories, industrial relations, etc. are revealed. The active implication of stakeholder theory in various recent policy initiatives might shed light on a new road for the development of corporations and society.
JEL: G3; M2

Vladia Borissova

DIGITAL TRANSFORMATION FOR DIGITAL COMPETITIVENESS AT A MICRO LEVEL

The development of digital technologies turned into the fourth industrial revolution – Industry 4.0, which is associated with the digitalisation of processes, big data, the Internet of Things, additive technologies – 3D printing, robotics, artificial intelligence. The digital transformation in business relations led to economic reformatting of logistical, production and trade processes in the global value chain and especially with regards to cross-border payments, production and trade. The present research fills the research gap concerning the relation between the preconditions for the digital transformation of industry, the economic effects from the reformatting of the global value chain and the related digital competitiveness of enterprises. The establishing of the relation and the identification of trends in the development of digital technologies and the global value chains is an indicator for the beginning of the transition from Industry 4.0 to the industry of artificial intelligence – 5.0.
JEL: A20; L1; O1; O14; O3; O33

Tsvetomir Tsvetkov
Sonya Georgieva

ANTI-CRISIS MACROECONOMIC POLICY IN THE CONDITIONS OF COVID-19 IN BULGARIA

Any anti-crisis macroeconomic policy includes monetary and fiscal policy. The construction of anti-crisis macroeconomic policy in the conditions of a small open economy in a currency board and a virus pandemic raises the question of which measures should be the foundation and which measures should play a complementary macroeconomic role. This issue is extremely important because it predetermines both the efficiency and effectiveness of counter-cyclical policy. This study deals with the structuring of the main and complementary role of the fiscal and monetary policy in the general anti-crisis policy

of Bulgaria. The focus is on 2020, looking at the impact of aggregate fiscal multiplier and monetary measures on GDP, based on extrapolation. A mathematical analysis is realized, which leads to quantitative results that illustrate the impact of fiscal and monetary policy on GDP development in a predictable short-term period which covers 2020 on a quarterly basis.
JEL: E6; E62; E52

Sonya Georgieva

FISCAL MULTIPLIERS IN BULGARIA AND CENTRAL AND EASTERN EUROPE COUNTRIES

The importance and possibilities of fiscal policy have been neglected by academics and politicians for decades after the macroeconomic revolution of 1970-1980. However, the Great Recession, the crisis in the European Union and the prolonged recession in many European economies have once again put fiscal policy, and especially its stabilizing role, at the centre of expert and public discussions. In countries with a high share of the public sector in the economy and whose monetary policy is constrained by various structural features of the economy and the financial system, the role of fiscal policy is particularly important, and it is a key lever of economic policy. These features characterize most countries in Central and Eastern Europe (CEE), which makes this region convenient for analyzing the effectiveness of the fiscal policy. The study empirically establishes the effects of shocks in budget expenditures and tax revenues on GDP in Bulgaria, Estonia and Lithuania for the period 1995-2018, applying the vector autoregression technique known as the Vector Autoregressive Model (VAR) as well as other, non-econometric valuation methods. Key factors that affect the dynamics in the size of fiscal multipliers are presented numerically and graphically.
JEL: C32; E01; E62

Petya Ivanova

EVENT TOURISM DEVELOPMENT IN BULGARIA: KEY FACTORS AND MAIN GOALS

The focus of research interest is on examination the specific features of event tourism and the opportunities it offers for the development of destinations. Global trends in tourist demand and the state of tourism supply are indicative of the relevance of developing event tourism. Special events, especially those that are hallmark events, and tourism that is based on them, are recognised as an opportunity to achieve a range of goals. They can also have an impact on the image, attract tourists and emotionally influence them, which makes them a particularly suitable instrument of the development of destinations.
This study aims to identify the main goals of the development of event tourism, as well as to outline the key factors in their achievement. An expert survey was conducted on the basis of a structured model, including process and result objectives. The results of the study permit identification of key determinants of successful event tourism policy: efficient use of identified event tourism resources; strategic measures at a national level to support and promote event tourism, including building a portfolio of distinctive events for the destination; the implementation of marketing strategies for the distribution and advertising of event tourism, professional organisation; building knowledge on event tourism demand and tourist satisfaction. Today's event tourism management exists via utilising the potential of digital technologies in the design and distribution of the event tourism product.
JEL: L83; L84; M11