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Comparative Studies of National Business Cultures in the Countries of Central and Eastern Europe: the Basics for Improving International Entrepreneurship in Poland and Ukraine

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Abstract

Based on the work of Hofstede, Trompenaars, Lewis, and Rapaille, the founders of the theory of national business cultures and comparative economic studies, the characteristics of corresponding scientific areas are identified: cross-cultural management, cross-cultural communications, and cross-cultural marketing, including their methodological and practical aspects. Using the classic measuring parameters of national business cultures ("Individualism," "Power Distance," "Masculinity," "Uncertainty Avoidance," "Long-Term Orientation," "Indulgence"), a comparative analysis is carried out on the example of Poland, Ukraine, Germany, France, and Hungary; the results of the authors' own development of this interdisciplinary problem are presented. On this basis, new approaches are proposed in establishing mutually beneficial international cooperation between Polish and Ukrainian enterprises, not only in Europe but also in other regions of the world.

Keywords: comparative studies, national business culture, measuring parameters of national business cultures, management, communications, marketing, internationalization, Poland, Ukraine

JEL: O57, F23

Introduction

The analysis of economic facts and development trends of individual countries, gives grounds to note that modern management problems are largely predetermined by the nature and properties of the national business cultures of these countries. So far the problems of different national business cultures have not been sufficiently explored. The initial stage of issues related to national business cultures is typical of Ukraine and also of Poland. In the context of the entry into the European Union in this regard, Polish researchers presented a number of new and practical studies (Glinkowska, Kaczmarek 2016; Listwan, Stor 2008; Pocztowski 2002; Sitko-Lutek 2004).

This studies are particularly relevant to Ukraine. However, this is not fully recognized, either by the scientific community, business circles by the political establishment. Corresponding theoretical and applied developments (including those of a scientific and pedagogical nature) in Ukrainian economics are quite rare (Бондаренко[1], Тодорова 2008; Glinkowska, Є. Чеботарьов, В. Чеботарьов 2018).

The first joint Polish-Ukrainian developments on this important both in the theoretical and practical aspects of the problem appeared (Glinkowska, Chebotarov 2018).

It should be noted that for Ukraine the problem of different national business cultures increases immeasurably in the context of the need to realize its high potential advantages in the system of the international division of labor and the practical problems of integration with the European Union.

The purpose of the article is to conduct a comparative study of national business cultures on the examples of Poland, Ukraine, Germany, France, and Hungary, and to substantiate the scientific and practical premises for the joint entry of Polish and Ukrainian business structures to the markets of Europe (and other regions of the world), that would be preceded by establishing effective forms of integrative cooperation.

The methodological basis of the research is formed by the works of Hofstede (1980a; 1994b; 2011c), Trompenaars (1993; Trompenaars, Woolliams 2003), Lewis (1999a; 2005b), and Rapaille (2004a; 2007b) the founders of the theory of national business cultures and modern economic comparativistics.

1 http://blogtrenera.ru/blog/pyat-kamnej-pretknoveniya-effektivnoj-kross-kulturnoj-kommunikacii.html (accessed: 20.08.2019).

The basis of the research is the personal developments of the authors within the framework of the Center for Research and Scientific Cooperation: Poland-Ukraine[2] (2016–2019), which is a detailed survey of managerial practitioners with in-depth interviews of business trainers, experts, analysts, andthe authorities of Poland, Ukraine, Germany, France, USA, and Spain. In addition, we used public materials from the Institute for Research on Intercultural Cooperation (IRIC, the Netherlands) and Hofstede Insights, the culture and strategy advisory and analytics organization which was estabilised by Geert Hofstede to cover the applicable aspects of his developments.[3]

The empirical basis of the research is our personal experience of entrepreneurial activity and the systematic analysis of theoretical and practical aspects of internationalization and globalization (Glinkowska 2018; Glinkowska, Kaczmarek 2016), as well as direct involvement in the implementation of projects of international charities from the USA, Germany, and Israel in Ukraine between 2015 and 2019 (Чеботарьов 2016; Чеботарьов, Колосов, Марков та ін. 2016).

The working hypothesis of the study – the national business culture reflects the system of phenomena, processes, and trends of economic, institutional and psychological nature, reproducible in space and time, characteristic of a certain country (or group of countries), which largely predetermine the formulation of goals, methods to achieve them, and the evaluation of the results of production and commercial activity of business entities and the functioning of non-profit organizations.

Research methods. In the context of modern epistemology, the methods that are most applicable in comparative economic studies were used: the grouping method (in identifying countries for comparing national business cultures); comparative analysis (in order to compare the characteristics of business cultures of a selected group of countries); the unity of induction and deduction (in the context of deriving the common characteristics of a given group of countries from the parameters of business cultures of individual countries and clarifying the relevant differences); and quantitative evaluation (for comparing the parameters of national business cultures).

Presentation of the main material of the article

There are three main areas in the study of the problems of national business cultures: managerial, communicative, and marketing, and studies in these areas have been carried out quite intensively. Therefore, the selected areas logically formed into relatively independent correspondent branches of knowledge, and then scientific (and also academic) disciplines.

2 http://zarzadzanie.uni.lodz.pl/Stronaglowna/Struktura/CentrumWsp%C3%B3%C5%82pracyBadawczoNaukowejPolskaUkrai/tabid/2704/Default.aspx (accessed: 20.08.2019).

3 https://www.hofstede-insights.com/about-us (accessed: 20.08.2019).

The managerial approach to the study of national business cultures is embodied in cross-cultural management, the communicative approach in cross-cultural communications, and the marketing approach in cross-cultural marketing, respectively.

A generalized reflection of the comparative analysis of the aforementioned approaches is given in Table 1 (due to not only the largest representation of researchers of managerial aspects, but also to a significant contribution to the development of this problematics, the managerial approach was reviewed on the example of two authors, Hofstede, and Trompenaars).

"National Business Culture" is defined as a system of basic postulates and provisions of entrepreneurial activity that are inherent, formed over time, and reproducible in space and time; value motives and behavioral norms; rules, canons and traditions of entrepreneurial activity, as well as stereotypes, attributes, and business ethics of doing business in general which are peculiar to a particular country (or a group of countries that are close in their parameters).

The system of parameters of national business cultures used in modern economic comparativistics (mainly in comparative management) includes the following: "Individualism," "Power Distance," "Masculinity," "Uncertainty Avoidance," "Long Term Orientation," "Indulgence."

These characteristics were introduced by the Institute for Research on Intercultural Cooperation (IRIC) for the scientific and practical analysis of national business cultures, with a quantitative assessment for each meter-parameter is carried out by awarding scores that range from low to high. The IRIC was founded in 1973 by Geert Hofstede, who was its first director. This also implies the similarity of these measuring parameters to those proposed by Hofstede; however, there is a noticeable influence of the concept of Trompenaars.

The essential characteristics of national business cultures (meters-parameters) in the understanding of the IRIC and Hofstede Insights are as follows.[4]

"Power distance" is a parameter that defines the extent of the concentration of power at the highest hierarchical levels of management in organizations (enterprises, institutions, etc.) of certain types of business cultures of different countries. In countries with a big power distance gap, middle-level managers, and especially lower-level managers, have no real power. The inequality of people in the organization (and in society as a whole) and the presence of this kind of distribution of power are seen as natural phenomena.

"Individualism" classifies the degree of independence which is established and constantly reproduced by the organization and society (and the country as a whole). In countries with a high rate of individualism, members of the organization (and society as a whole) take care of themselves. By contrast, in collectivist societies, people who are members of organizations "belong" to them in a certain way.

"Masculinity" represents the degree to which success is cultivated and an independent career is developed, as well as the general level of competitiveness of the business

4 https://www.hofstede-insights.com/models/national-culture/ (accessed: 20.08.2019).

environment of certain countries. The dominance of concern for the quality of one's life is classified as a sign of the femininity of the business culture as a whole. In countries with a high level of masculinity, people "live for work"; conflicts in organizations are usually resolved through struggle.

"Uncertainty avoidance" describes managers' desire to avoid uncertainty as such. Or vice versa – it is considered natural for business activities to be organized under conditions of uncertainty.

Table 1. Comparative analysis of methods and essential characteristics of approaches in the study of national business cultures

Approaches and Authors	Methodical tools	Summary of the theory
Managerial – Hofstede	The selection of two-dimensional meters of national business cultures with their consideration in the coordinate system "Family – School – Work" and the subsequent conducting of multiple large-scale surveys (mainly on the example of IBM).	Characteristics of national business cultures through the analysis of the meters "Individualism – collectivism," "Power distance," "Masculinity – femininity," "Uncertainty avoidance," "Confucian dynamism" and the clustering of national business cultures (for individual countries of the world).
Managerial – Trompenaars	The selection of two-dimensional meters of national business cultures followed by a large-scale survey (using the example of several leading companies in the world).	Characteristics of national business cultures through the analysis of the meters "Universalism – particularism," "Individualism – communitarianism," "Neutrality – emotionality," "Specific – diffuse," "Achievement – ascription," "External control – internal control," "Sequential time – synchronous time" and the clustering of national business cultures (by selected countries of the world).
Communicative – Lewis	The classification of two types of behavior (introverts – extraverts) and three-dimensional characteristics of national business cultures (linear activity, reactivity, multi activity) followed by a large-scale survey (using the example of a number of leading companies in the world).	The construction and description of triangles with the placement on its basis and the legs groups of 2–4 countries with their identification in the unity of the selected types of behavior and characteristics of national business cultures (for individual countries of the world).
Marketing – Rapaille	The selection of the most typical social strata in the frame of individual countries and conducting research using the focus group method to understand the root causes of the emotional state of consumers in the assessment of consumer goods.	Characteristics of national business cultures through the disclosure of the content of the triad "Logical Emotionality" – "Archetype" – "Cultural Code" and description of the cultural codes of the leading countries of the world.

Source: authors' own elaboration.

"Long-term orientation" assesses approaches to the use of time in business activities, i.e., the ability of managers to distribute their actions within a short, medium, or long-term perspective. A high score of this parameter indicates the ability of executives to quickly adapt to changing conditions and the acceptance of investing in long-term business projects.

"Indulgence" represents the condescending attitude towards the absolutization of the market values of selfishness and profitability in business, as well as the spread of these values into all spheres of society. The opposite of indulgence is self-restraint, i.e., a certain reservation and moderation in achieving commercial success, which sets the social orientation of a business and a corresponding focus on the development of society as a whole.

For comparative studies of national business cultures, a set of countries consisting of Poland, Ukraine, Germany, France, and Hungary was chosen. The selection of Poland and Ukraine was naturally determined by the nationality of the authors. Germany and France are among the most developed countries of the European Union and possess advanced management schools. The choice of Hungary is dictated by the proximity of its conditions to the conditions of Poland and Ukraine, as well as its rich managerial culture.

Quantitative expressions of the parameters of national business cultures, as noted, are given according to the data from Hofstede Insights.[5]

Figure 1 provides an illustration of the characteristics of the national business cultures of the selected group of countries by the parameters "Power distance," "Individualism" and "Masculinity," with their respective quantitative expressions.

According to the "Power distance" parameter, the national business cultures of the analyzed countries are characterized by a high degree of difference. Germany's indicator for this parameter (35) is one of the lowest in the world. By contrast, Ukraine (92) is characterized by the highest indicator. This is one of the highest rates in the world (and is similar to the indicators typical for all countries of the former USSR). It is noteworthy that in this parameter, Poland's indicator directly corresponds to that of France (68).

The business cultures of the selected countries are characterized by the "Individualism" parameter. The highest score (80) belongs to Hungary, which is more than three times higher than the characteristics of Ukraine (25). The score of individualism in Poland (60) is approaching that of Germany (67). France is in the middle (71), between Poland and Hungary.

Note that the above scores of the "Individualism" parameter are an example of the assessment of national business cultures from the standpoint of Western management. From the standpoint of a Western specialist, a low indicator of this parameter is interpreted as a lack of entrepreneurship (Deresky 2000). By contrast, in Eastern management, high individualism is considered to be one of the most vulnerable components of entrepreneurship (Lee, Kuan Yew 2000).

5 https://www.hofstede-insights.com/country-comparison/ (accessed: 20.08.2019).

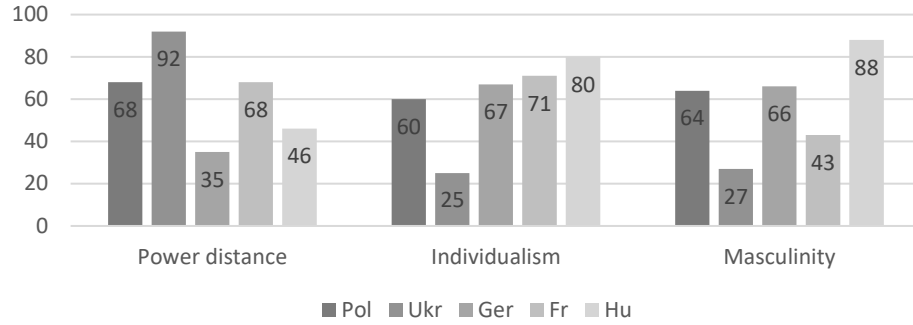

Figure 1. Comparative characteristics of the national business cultures of Poland, Ukraine, Germany, France, and Hungary of the "Power distance," "Individualism" and "Masculinity" parameters
Source: https://www.hofstede-insights.com/country-comparison/poland,ukraine,germany,france,hungary/ (accessed: 20.08.2019).

The assessment of the parameter "Masculinity" is also not entirely unambiguous from the standpoint of Western and Eastern management. According to Hofstede Insights, Hungary's index (88) is more than three times higher than that of Ukraine (27); it serves as a classic example of feminine business culture. The indicators of Germany and Poland are very close (66 and 64, respectively). France (43) can also be classified as a country with a relative inclination towards the feminine business culture.

Based on our research, we cannot fully agree with the estimates of Hofstede Insights on cooperation on this parameter. In particular, we recorded a higher appreciation of the characteristics of masculinity in the business environment of Poland and Ukraine (along with the high skills of the managers in finding a balance of interests in business).

Figure 2 illustrates the characteristics and assessments of the national business cultures of Poland, Ukraine, Germany, France, and Hungary, presenting the other three parameters adopted in modern economic comparativistics in a similar way.

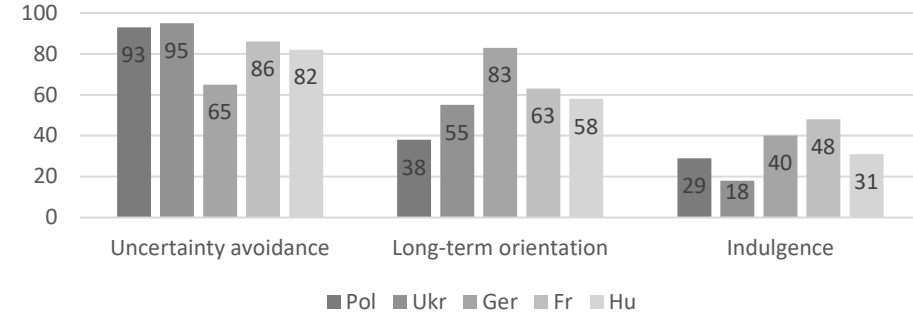

Figure 2. Comparative characteristics of the national business cultures of Poland, Ukraine, Germany, France and Hungary of the "Uncertainty avoidance," "Long-term orientation," and "Indulgence" parameters
Source: https://www.hofstede-insights.com/country-comparison/poland,ukraine,germany,france,hungary/ (accessed: 20.08.2019).

Regarding the "Uncertainty avoidance" parameter, the countries are distinguished by a small range of scores. Ukraine and Poland are close in terms of their performance (95 and 93 respectively), while Hungary is close to France (82 and 86, respectively). Germany (65) is the most different. However, we note that a fairly high level of independence (and also creativity) was recorded for Ukrainian and Polish managers.

For the "Long-term orientation" parameter, the countries analyzed fall into three groups. Poland quite distinctly has a short-term orientation in business (its score is 38). Germany is a classic country with a long-term orientation (83). Hungary, France, and Ukraine occupy the middle and do not differ much from each other (58, 63, and 55, respectively).

In terms of "Indulgence," the countries again fall into three groups. The most indulgent are France and Germany (their scores are 48 and 40, respectively). The scores of Hungary and Poland are very close (31 and 29). According to the estimates of Hofstede Insights, Ukraine's business culture (its score is 18) has the most pronounced characteristics of self-restraint and moderation in business.

However, our research does not confirm the high estimates for the social orientation of Ukrainian businesses. They showed that in modern conditions, its social orientation features have been largely lost. This is due, on the one hand, to the economic disability of the state as a supreme institutional entity, and on the other hand, to decades of rigid domination of the planned command economy and the suppression of every instance of entrepreneurship. The rich history of socially oriented business, in particular, the patronage movement in Ukraine (the dynasties of the largest entrepreneurs of that time, including Tereshchenko, Khanenko, Brodski, Alchevski) has yet to be revived.

The presented analysis of the national business cultures of Poland and Ukraine allows us to evaluate the course of their market reforms in a new way. More importantly, it allows us to substantiate the prospects, specific forms, and methods of their cooperation in world markets. With that, the following important considerations of institutional nature should be taken into account. Conducting a coordinated policy of Poland and Ukraine in the presence of sufficiently weighty natural and geographic, human, economic, investment, scientific and technical potentials gives all objective prerequisites to the economic entities of these two countries for the realization of effective and beneficial cooperation in the markets of goods and services not only in Europe, but in the whole world.

Our analysis allows us to state unequivocally that the national business culture of Poland fits the all-European business culture quite organically. It was, in many ways, a favorable basis for the success of market reforms in Poland in the late 1980s and early 1990s. In particular, it included implementing its European integration course, i.e., the relevant programs of the European Union (first, "Poland – Hungary: Assistance for the Reconstruction of the Economy," then "Instrument for Structural Policies for Pre-Accessions," and finally the sectoral programs), establishing cooperation with leading international organizations, and creating a favorable investment climate for foreign investors, among others.

We confirm this with the results of our research. Poland's figure for the "Power distance" parameter in Fig. 1 corresponds to that of France. Regarding "Individualism" and "Masculinity," Poland's scores are close to those of Germany, while the score for "Indulgence" is very close to Hungary's.

Regarding Ukraine, the analysis allows us to note the following. The longer period of the domination of the socialist economy (as well as the peculiarities of the functioning of such an economy in Ukraine) had led to a significant decrease in entrepreneurial features in its business culture by the early 1990s. This was manifested in the maximization of the indicator "Power distance" parameter and a significant decrease in "Individualism." For this reason, market forms of economic management (especially with distance from the western borders) have hardly taken root in Ukraine. It is precisely because of the the years of the rigid socialist system and the low score for the indulgence parameter (which would seem strange in such a system) that favorable "institutional grounds" for corruption and bureaucracy formed in Ukraine. This is also the main brake for the market reforms today.

At the same time, the comparative analysis in the context of substantiating the prospects for the development of foreign economic activity provides theoretical grounds for the following comment. In terms of Poland's national business culture, "Individualism" and "Masculinity" will cause a number of subjective difficulties in conquering the markets in the Middle East, Central Asia, and also Southeast Asia and, partly, the countries of the Black Sea region (the so-called "eastern vector"). Our questionnaires and in-depth interviews with managers of Polish companies that have penetrated the markets of these regions provide practical proof of the validity of our comments.

At the same time, we note that, according to these parameters, Ukraine's indicators, in contrast to Poland's, correspond to a greater degree with the indicators of business cultures of the countries of the "eastern vector." Therefore, for the least costly and quickest way to overcome similar cross-cultural barriers, Polish business structures would be wise to attract Ukrainian managers.

For the same reasons, it would make sense for Polish enterprises to attract Ukrainian executives and entrepreneurs to adapt their norms and canons to the "Eastern management." Such adaptation by modern world management science is considered to be the optimal direction of development not only in the medium, but also in the long-term perspective.

Our studies confirmed the evaluation of the proximity of business cultures in Poland and Ukraine in terms of "Uncertainty avoidance" and "Indulgence." At the same time, unlike the specialists of the Institute for Research on Intercultural Cooperation and Hofstede Insights, we did not record any fundamental differences between the business cultures of Poland and Ukraine in the "Individualism" parameter. In fact, they revealed their similarity.

In the context of the characteristics of business culture, Ukraine, unlike Poland, is closer to the Pan-European median for the "Long-term orientation" parameter. On this basis, it would be considered reasonable for Polish entities to attract Ukrain-

ian managers in order to more effectively advance to the markets of Western Europe, as well as the USA and Canada, in industries with a long production and commercial cycle, e.g., in the metallurgical, chemical, and mining industries, as well as in the implementation of large-scale infrastructure projects.

Conclusions

The problems of different national business cultures is a complex interdisciplinary problem. It covers all aspects of the economy (primarily, management and marketing), as well as a wide range of issues of a non-economic nature (e.g., the institutional sphere, communicative interaction, psychology, etc.).

The existing parameters of national business cultures in modern economic comparative studies are, in general, sufficient to reveal their characteristics. At the same time, the analysis of the business cultures of Poland, Ukraine, Germany, France, and Hungary indicated that the issues of understanding the general theoretical content of parameters with regard to the peculiarities of different countries are not sufficiently developed, e.g. the correspondence of parameters in business cultures of a number of countries; aspects of prognostic nature in the evolution of business cultures of individual countries (regions) and some others.

The analysis scientifically indicated that the national business cultures of Poland and Ukraine are not only close but also, to some extent, complementary to each other. This is a reliable basis for coordinating the economic policies of Poland and Ukraine, and implementing long-term mutually beneficial integration projects of business and public structures of these countries not only in Europe, but also in all other regions of the world.

Prospects for the further development of the problem under analysis

Future areas for research include deepening the content analysis of the parameters of national business cultures and undertaking a quantitative evaluation. Most importantly, future research should also investigate the corresponding linkages of these parameters in specific institutional and economic conditions applicable to specific countries and groups of countries.

At the same time, it is necessary to introduce appropriate components of sociology and innovations into the analysis, which would make it possible to investigate the problems of comparing national business cultures in the sphere of small and medium enterprises.

For Poland and Ukraine, the priority for further research into aspects of national business cultures is to explain the optimal forms of encouraging Polish and Ukrain-

ian managers to implement joint activities in different regions of the world, taking into account industry characteristics and dimensional parameters of business in the context of diverse projects.

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Streszczenie

Badania porównawcze krajowych kultur biznesowych w krajach Europy Środkowej i Wschodniej: przesłanki poprawy międzynarodowej przedsiębiorczości

Na podstawie badań i uogólnienia pracy twórców teorii narodowych kultur biznesu, a także na bazie ekonomicznych badań porównawczych przez G. Hofstede, F. Trompenaarsa, R. Lewisa i C. Rapaille, charakterystycznych dla odpowiednich dziedzin naukowych dokonano analizy takich zagadnień, jak: zarządzanie międzykulturowe, komunikacja międzykulturowa i marketing międzykulturowy – ich metodycznych i praktycznych aspektów. Korzystając z klasycznych parametrów pomiaru narodowych kultur biznesu („Indywidualizm", „Dystans władzy", „Męskość", „Unikanie niepewności", „Orientacja długoterminowa", „Pobłażliwość"), przeprowadzana jest analiza porównawcza na przykładzie Polski, Ukrainy, Niemiec, Francji i Węgier; w opracowaniu przedstawiono wyniki badań własnego opracowania tego interdyscyplinarnego problemu. Na tej podstawie proponowane są nowe podejścia do nawiązywania wzajemnie korzystnej współpracy międzynarodowej między polskimi i ukraińskimi przedsiębiorstwami nie tylko w Europie, ale także w innych regionach świata.

Słowa kluczowe: badania porównawcze, narodowa kultura biznesowa, pomiar parametrów narodowych kultur biznesowych, zarządzanie, komunikacja, marketing, internacjonalizacja, Polska, Ukraina

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The European Union's Screening Framework for Foreign Direct Investment: Consequences for External Relations

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Abstract

The Lisbon Treaty gives the European Union (EU) institutions new external competences, including foreign direct investment (FDI) in the common trade policy. Using these competences the European Commission formulated a proposal for a regulation establishing the screening framework for FDI, which entered into force in April 2019. The aim of this paper is to discuss the issue of FDI screening as an element of policies towards FDI applied by developed countries, to assess the justifications for its introduction, as well as the potential consequences of the screening framework for inflowing FDI into the EU. A need to protect the EU's strategic economic interests in relations with third countries was the reason for the introduction of the new tool at the EU level. The new system of screening FDI inflows into the EU is not centralized. The right to screen remains the sole responsibility of the Member States. The co-ordination mechanism at the level of the EU which has been constructed seems to give guarantees that common interests will be protected. The economic and political consequences of the EU's screening framework for FDI should be foreseen. Apart from administrative and compliance costs, as well as uncertainty and delays related to investment decision processes, two categories of potential consequences seem to be important. These are the expected reduced access to capital by some Member States, especially the 'new' ones, and the worsening of relations with external partners, especially China.

Keywords: Foreign direct investment (FDI), screening framework, the European Union, external relations, Chinese investment abroad

JEL: F21, F23, F42, K33

Introduction

Although the Lisbon Treaty gives European Union (EU) institutions new external competences, including foreign direct investment (FDI), in the common trade policy, the final form and scope of the EU's common investment policy are still not established. The common EU investment policy has some problems that still need to be solved, i.e., investment protection issues, pre- and post-establishment guarantees, and the EU's international investment agreements that require the acceptance of both the EU and the Member States (so-called 'mixed agreements'). Apart from that, the EU institutions face a new task in this field, namely, the establishment of a mechanism protecting key strategic industries and assets in the EU while maintaining a conducive investment climate for attracting foreign investors. A screening framework for FDI should serve as a new instrument of the EU common investment policy, making it possible to achieve this aim.

The issue of FDI screening was discussed in the context of developing countries' policies towards foreign investors in the past. Nowadays, the necessity of screening is crucial for developed countries, as well. The openness of the EU towards foreign investment inflows from third countries, confirmed by various Treaties, might have some negative consequences for the economies of the Member States, their security, and public order. Hence, the EU's institutions have agreed that some regulations related to screening incoming FDI should be introduced.

The aims of this paper are to discuss the issue of FDI screening in the case of developed countries and to assess some justifications for its introduction as well as potential consequences of the newly agreed screening framework for inflowing FDI into the EU. The more detailed research tasks of the paper are as follows:

- to review hitherto approaches towards foreign direct investment screening under FDI policies of countries at different levels of economic development,
- to analyze the FDI screening framework as an element of the common investment policy of the EU,
- to discuss potential economic and political consequences of the implementation of the FDI screening framework in the EU,
- to assess the potential consequences of FDI screening for external investment relations, with special reference to EU-China relations.

The official information on the EU policy towards foreign investment and the FDI screening framework, as well as independent analyses, are used as references in the paper.

Restrictions in recipient countries' policies towards foreign direct investment – A review

Nowadays, capital movements in the form of FDI flows are treated as generally beneficial for recipient countries if certain conditions are fulfilled. However, there are always disputes about the potentially negative impact of FDI on the economic de-

velopment of the host economies and their security and public order. Arguments for and against free FDI flows have given ground for the shaping of recipient countries' policies towards FDI. Important elements of these policies are some **restrictions** justified by **market and institutional failures.** The restrictions can be separated into two: those affecting market entry and post-entry operations. They include limitations on foreign ownership, management and operational restrictions, notification procedures, or **screening (**UNCTAD 2003, pp. 103–109; UNCTAD 2006, pp. 1–3). According to the definition applied in the new EU regulation, a **screening** mechanism means '*…an instrument of general application, such as a law or regulation, and accompanying administrative requirements, implementing rules or guidelines, setting out the terms, conditions and procedures to asses, investigate, authorise, condition, prohibit or unwind foreign direct investments on grounds of security or public order*' **(Article 2, OJEU 2019)**.

The arguments for the **pre-establishment restrictions** of free FDI flows are as follows: Foreign investors, using their ownership-specific-advantages, could harm a host economy by reducing infant domestic entrepreneurship, by deterring local technological deepening, or by transferring and exploiting new technology outside of the recipient countries. Furthermore, foreign investors could also be less involved in spillovers than domestic firms and more prone to footloose activity. Finally, the presence of foreign firms in a domestic economy could lead to the loss of economic control by the recipient countries since foreign investors are responsive to signals from international markets and pressures from home country economies. The above-presented arguments for restricting FDI are believed to have merit, although the evidence of their practical significance is mixed (UNCTAD 2003, pp. 103–109).

Acceptance of the **post-establishment restrictions** towards FDI is based on the same theoretical thinking as in the case of the pre-establishment requirements. Market and institutional imperfections could be used here as arguments to deny foreign investors national treatment. Foreign investors may need to be restricted because of the infant enterprise arguments, i.e., that they have an advantage over local firms, which may lead to further segmentation of financial and labor markets. Their privileges, in the form of access to sensitive strategic information and technologies, possible dominant positions in recipient countries, and the danger of abusing their market power in the host countries are further arguments for introducing restrictions. In practice, the use of all these discriminatory instruments is combined with instruments that encourage foreign investors to make the best possible contribution to the economic development of host countries (UNCTAD 2003, p. 107).

Historically, restrictions and some requirements towards foreign investors were especially popular in developing countries. However, developed countries also used such instruments. Some strong fears related to the possibility of dependent development occurred in the case of some **developing countries,** which were clearly expressed by the so-called '*dependency school of thought.*' It resulted in the creation of policies based on internal capital resources.

During the 1980s, a growing number of developing countries turned towards outward-oriented economic policies of growth through exports and turned away from inward-looking import substitution policies. This change in the policies was triggered by a variety of factors. Among others, the need for hard currency to service the foreign debt of developing countries, accumulated in the early 1980s, was one of the reasons for the re-orientation of their policies (UNCTAD 1992, pp. 12–13). The attitude of these countries towards FDI started changing from being heavily regulatory and quite strict to more liberal. In the 1990s, foreign capital played an important role in the development strategies of many developing countries. Nevertheless, different types of restrictions towards FDI remained in their policies (UNCTAD 2006, pp. 1–3).

There were both political and economic reasons for the parallel liberalization of FDI inflows and the maintaining of FDI restrictions by developing countries. On the one hand, less developed countries could perceive restrictions towards foreign investment as instruments that guaranteed their independent political existence and economic development as well as a way to limit any potentially negative economic consequences of FDI inflows. On the other hand, the need for capital for their economic development led not only to the further opening of their economies towards foreign investors but also to offering them generous packages of incentives.

At the beginning of the 1990s, the trends towards liberalizing FDI flows occurred in **economies in transition** as well. These countries liberalized, privatized, and deregulated their economies, and liberal policies towards foreign investors were the immanent feature of these processes. Countries from Central and Eastern Europe (CEE), which were undergoing a systemic transformation, aspired to be members of international and regional organizations, such as the EU and the OECD. This resulted in liberal adjustments to the requirements imposed by these organizations.

As for policies towards FDI, the CEE countries used several restrictive instruments that allowed them to limit or control FDI inflows into some sensitive sectors of their economy at the beginning of the transformation. This was the subject of much controversy between the partners in the negotiations on the membership of these countries in the EU and the OECD. The governments of the transition countries were also under pressure from different social groups that expressed fears related to the potential dominance of foreign capital in their countries.

A discussion on the 'optimal' policy towards FDI led to the formulation of recommendations that tried to combine liberal concepts with elements of FDI screening/monitoring. This was the case of Poland (Witkowska 2000; Pach 2001). **The screening framework**, by definition, gives an opportunity to check whether investment projects are suitable for the strategic aims of a recipient country. It also makes it possible to assess their particular impact on the economy. FDI screening seemed to be justified in Poland from the point of view of environmental protection, the assessment of the economic consequences of investment incentives offered to foreign investors, the impact of FDI projects on de-monopolization, and the competition processes at that time.

The need to control FDI flows has also occurred in **developed countries** because of national security concerns in strategic sectors. For example, restrictions on foreign investment in the energy infrastructure of some developed countries are quite common practices nowadays. Countries such as Australia, Canada, the USA, and Japan have introduced legal rules, including screening regimes and ownership restrictions that allow them to limit the presence of foreign capital in key sectors for domestic economies, including energy (EC 2018, pp. 42–53). It is worth noting that countries such as China and Russia have adopted strict restrictions related to foreign investment in certain energy sectors as well. Recently, the problem of introducing the FDI screening framework has proved to be urgent for **the EU as a whole** (EC 2018a).

To sum up, two contradictory trends are observed in national investment policies, i.e., liberalization, promotion, and facilitation measures versus restrictions and regulations. The former constituted about 70% of changes undertaken globally in 2018 (January–October), the latter 30% (UNCTAD 2018, p. 2). The ratio of restrictions/regulations to the total policy measures was the highest since 2010. New measures oriented on creating more favorable investment conditions in industries such as retail trade, banking services, mining, and transportation were mainly adopted by **developing and transition economies**. The main motives behind the introduction of new restrictive or regulatory policy measures in **developed countries** were national security concerns about foreign ownership of critical infrastructures, core technologies, sensitive assets, or residential property. For example, the UK and the USA expanded the scope or conditions for the application of national security-related review mechanisms, Canada blocked an acquisition proposal for Aecon Group Inc. by a Chinese state-owned company due to national security concerns, while Norway and Hungary introduced a national security screening mechanism for foreign investment (UNCTAD 2018, pp. 1–4).

The European Union's screening framework for foreign direct investment as an element of the common investment policy

The EU is in the process of introducing a new tool of the common investment policy, i.e., **a screening mechanism,** to be used in co-operation with Member States (EC 2017; 2018a: 2019). The European institutions see it as necessary to protect public interests and secure the EU as a whole in the context of challenges related to the expansion of foreign investors in the EU's strategic sectors. The differentiated FDI screening mechanisms undertaken by the Member States thus far on the national security grounds, combined with the scrutiny of M&A under the EU competition rules, are questioned as adequate regulatory tools to face these daunting new challenges (EPRS 2017, p. 1).

The hitherto legal basis for FDI screening at the EU level and some practices of the Member States

Free capital movements constitute one of the basic freedoms in the EU, which is confirmed by Article 63 of the Treaty on the Functioning of the European Union (TFEU). The objective of this freedom is to ensure openness towards the other Member States and non-EU countries. However, this openness is not unconditional. Some restrictions might be introduced in specific situations which are foreseen by Article 65.1(b). These include infringements of national laws and regulations in the field of taxation, needs for the prudential supervision of financial institutions, and public policy or public security concerns (Consolidated Version of TFEU 2012). These provisions are treated as a derogation from the fundamental principle of free capital movements and payments, but they cannot be used as a means of arbitrary discrimination or a disguised restriction of this freedom. The exceptions from the free capital movement rule have been interpreted narrowly by the Court of Justice of the European Union (CJEU) in its case law (EPRS 2017, p. 5).

The Member States can evoke the above-mentioned Article 65(1)b as the legal basis for the protection of their essential interests on the grounds of public policy and public security. The restrictions can also be justified by the general interest, i.e., environmental protection, urban and country planning, and consumer protection, as recognized by the CJEU. However, they cannot be applied for purely economic reasons. Apart from the above-mentioned cases, the Member States can undertake any measures that they perceive as necessary for their security by using the Article 346(1) of the TFEU, which excludes the national defense sector from the application of the Treaty (EPRS 2017, p. 5).

At the EU level, the legal basis for FDI scrutiny constituted thus far two articles of the TFEU related to **the EU competition rules**, i.e., Articles 101 and 102. These provisions prohibit cartels and anti-competitive agreements as well as the abuse of a dominant position. The aim of mergers and acquisitions (M&As) screening under these procedures is to ensure fair and undistorted competition on the internal market. However, the sources of funds used in M&A transactions are not reviewed under the competition regulations (EPRS 2017, p. 5). Security or public order issues fall largely outside the scope of these regulations, with the exception of Article 21(4) of the 2004 **EU Merger Regulation 139/2004** that allows for the protection of legitimate interests such as '*public security, plurality of the media and prudential rules*' (EPRS 2019, pp. 2, 12).

Under national legal regulations, there was no single centralized FDI screening mechanism at the EU level that allowed for the preventive assessment of FDI made through M&As by third-country investors. Under EU law, FDI screening was the exclusive responsibility of the EU Member States. Furthermore, no formal coordination was required among the Member States or between them and the European Commission (EPRS 2019, p. 2).

As the **practices of the EU Member States** show, 14 countries have national FDI screening mechanisms in place that differ widely in scope and design (EP 2019). This can be illustrated by the example of investments in electricity and gas infrastructures relevant to the security of the supply. The Member States in question use **screening law procedures** in which the nationality of the investor plays an important role. In six of the procedures, the screening can be applied to non-EU investors, with the exception of investors from the EEA and EFTA countries. In two procedures, the review can be applied to all foreign investors, including those from the other EU Member States. The rest of the screening procedures embrace all investors, including national ones (EC 2018, Preamble). Other methods of controlling foreign investment in this field are **ownership restrictions** (18 Member States) and the usage of so-called **Golden shares** (3 Member States) (EC 2018, p. 13).

Justifications for the introduction of the EU screening framework for foreign direct investment

The general reasons for creating the new instrument of the EU's common investment policy, i.e., a framework for FDI screening, are related to (EC 2107a; EPRS 2017; Sunesen and Hansen 2018, p. 11; Gerhard 2018, pp. 815–817):

- **long-term changes in shares of FDI stocks** in the EU by foreign investors which originated in developed and emerging economies,
- **changes in** the **sector distribution** of FDI located in the EU, and the specific characteristics of the assets that are subject to the investment,
- **entry modes** preferred by investors from emerging economies,
- **characteristics** of foreign investors according to ownership and relations with states of their origin,
- **lack of reciprocal access** for EU firms to the Chinese market.

The statistical data show that the shares of FDI stocks in the EU by developed countries, such as the **USA, Switzerland, and Japan,** have been decreasing over the last two decades while the shares of other countries, such as **Brazil, China, and Russia** increased over the same period. The USA remains the largest investor in the EU, with a share of 41.5% in the EU FDI stock in 2015. However, this share decreased by about ten percentage points in comparison to 1995. A similar change is observed in the share of Switzerland in the EU FDI stocks. It decreased from 19.7% in 1995 to 10.8% in 2015. It is worth noting that Japan's share in the EU FDI stocks fell from 7.7% to 2.9% in the same period. The shares in FDI stocks located in the EU by emerging economies are still not high in comparison with those by investors from developed countries. In the case of Brazil, China (including Hong Kong), and Russia, these shares increased from 0.3%, 0.2%, and 0.4%, respectively, in 1995 to 2.2%, 2%, and 1.1% in 2015. As a result of these processes, Brazil and China took fifth and sixth place on the list of the largest investors in the EU. Although non-EU investors control only 0.4% of EU companies,

they account for about 13% of the total turnover, 11% of value-added, and 6% of the total employment in the EU (EC 2017b, pp. 3–4).

Since the end of the global financial crisis, changes in the sectoral distribution of FDI located in the EU have been observed. Foreign investors are increasingly interested in investing in the high-tech and manufacturing sectors in the EU, with special reference to strategic technologies, infrastructure, inputs, or sensitive information (EC 2017b, p. 6).

Furthermore, the increase in inward EU FDI flows continued to take the form of M&As, while Greenfield projects were more than six times lower than all other types of FDI (EC 2017b, p. 5). The number of M&A transactions by third-country investors in the EU amounted to 27,736 between 2003 and 2016. The UK, Germany, and France accounted for 60% of the total number of M&As in that period. As for the sectoral distribution of M&As, they increasingly take place in sensitive sectors of the EU economy (Sunesen and Hansen 2018, pp. 5–6).

A small portion of the M&A transactions by third-country investors, i.e., 2%, was completed by state-owned enterprises (SOEs). M&As conducted by SOEs differ from the investment patterns of all non-EU investment. SOEs, although present in the economies of the UK, Germany, and France, invested more frequently in countries such as the Netherlands, Sweden, Italy, and Finland. They invested mainly in the utility sectors, natural resource extractions (electricity, gas, steam, and air conditioning; mining and quarrying), and transportation and storage. They invested less often in information and communication compared to private investors (Sunesen and Hansen 2018, p. 5).

Special attention is paid to Chinese FDI made in the EU in the form of M&As, which amounted to 3% of the total number of M&As by third-country investors (Sunesen and Hansen 2018, p. 5). The huge surge in Chinese acquisitions of EU companies, the considerable value of some of these transactions, as well as the sensitive/strategic sectors which were the target of these acquisitions, have aroused serious security concerns. In addition, the potential outflow of advanced technologies raised concerns about the future global competitiveness of the EU. The expansion of Chinese companies is perceived in terms of unfair competition since some of the transactions in question might be backed by Chinese state funding in pursuit of industrial policy (EPRS 2017, p. 4). Lack of reciprocity in the relations between the EU and China, as far as market access is concerned, provides the next argument for the introduction of screening mechanisms.

The idiosyncratic nature of Chinese FDI in the EU has also been pointed out (Knoerich, Miedtank 2018). The special characteristics of Chinese FDI in the EU distinguish them from other 'traditional' foreign direct investments. Apart from the above-presented characteristics of Chinese investment in the EU, some others are discussed, namely the fact that Chinese investors are latecomers with few firm-specific ownership advantages in the EU, some uncommon approaches that Chinese investors adopt when investing in Europe, and the controversial nature of some FDI projects (Knoerich, Miedtank 2018, pp. 7–8).

To sum up, foreign investors might acquire control of or influence strategic sectors in the EU by using M&As as the mode of entry into the EU market. In some cases, foreign investors owned or controlled by States of third countries could abuse their position through the acquired assets in order to damage the EU's interests. Such potential situations led to considerable public concerns about security and public order in the EU (EC 2017b, p. 6).

All the above-mentioned facts and phenomena could be treated as solid justification for the introduction of a common screening framework for FDI, especially in the context of relatively low FDI regulatory restrictiveness of the EU and its Member States in comparison with some third countries' regulations. However, the debate on political solutions related to the screening framework showed differentiated views and attitudes to this issue among the EU institutions, the EU Member States, and experts.

The legislative procedure and the main features of the FDI screening framework at the level of the European Union

The process of introducing the EU screening framework for FDI was initiated by a group of Members of the European Parliament (EP), who tabled a proposal for an EU act on the screening of foreign investment in strategic sectors of the EU, dated 24 March 2017 (EPRS 2019, p. 5). Then, three EU institutions were involved in the legislative procedure, aiming at the creation of such a framework. The first steps/stages in this process were (EPRS 2019, p. 5):

- the resolution of the European Parliament of 5 July 2017 on building an industrial strategy in which it called on the Commission and the Member States to screen third-country FDI in the EU's strategic industries, infrastructure, and key future technologies,
- two calls of the European Council (June, October 2017) to the Commission and the Council to deepen and take forward the debate on reciprocity in the fields of public procurement and investment,
- the initiative of the Commission of June 2017 to analyze investment from third countries in the EU's strategic sectors, while respecting the competences of the Member States in this area.

Thereafter, the proposal of the European Commission to create the EU screening framework for FDI was formulated in an official document published on 13 September 2017 (EC 2017c). This proposal was preceded by the Commission's reflection paper of 10 May 2017 on Harnessing Globalization, which recognized increasing concerns about foreign investors' acquisitions of European companies with key technologies (EC 2017). The EC President, Jean-Claude Juncker, clearly presented the position of the EU in his annual State of the Union address of 2017 in the context of the observed trends: '*Let me say once and for all: we are not naïve traders. Europe must always defend its strategic interests. This is why today we are proposing a new EU framework for investment screening*' (EC 2017).

Then, talks with the two co-legislators, i.e., the European Parliament and Council, started in mid-2018, and at the end of the same year, the agreement was reached on the screening of FDI for the EU's security (EP 2018). In a vote on 14 February 2019 (EP 2019), **the European Parliament** accepted the setting up of **an EU–level tool** to screen FDI on the grounds of security to protect strategic sectors. **The Council** of the EU approved a framework for the screening of foreign direct investments into the Union on 5 March 2019 and this was the final stage of the legislative process (EC 2019). **Regulation (EU) 2019/452 of 19 March 2019** was published in the Official Journal of the European Union and the new law entered into force in April 2019 (OJEU 2019).

According to the accepted regulation, the FDI screening framework in the EU consists of **two components**, i.e., the newly created mechanism at the level of the EU and screening mechanisms used by the Member States. The regulation creates **a cooperation mechanism** involving both the Commission and the Member States, which should enable them to **exchange information** and raise concerns related to specific investment projects. This seems to be the essence of the new regulatory solution.

The Member States may maintain, amend, or adopt mechanisms to screen foreign direct investments in their territory on the grounds of security or public order (Article 3.1 OJEU 2019). Hence, the regulation does not limit the Member States' right to set up a screening mechanism or to screen particular foreign direct investment projects, which are treated as the sole responsibility of the Member States. At the same time, the regulation does not require Member States which do not screen FDI to introduce any investment screening mechanisms.

However, some key requirements towards the national screening mechanisms have been formulated in the regulation. These are the transparency of rules and procedures, non-discrimination among investors, the confidentiality of information exchanged, the possibility of recourse against screening decisions of the national authorities, and undertaking measures to identify and prevent the circumvention of the screening mechanisms and screening decisions (Article 3.2 OJEU 2019).

The criteria for determining whether FDI is likely to affect security or public order are defined in the form of an indicative list in the regulation (Article 4 OJEU 2019). The Commission and Member States may take into consideration the potential effects of FDI on:

- **critical infrastructure** defined in a broad sense; it includes both physical and virtual infrastructure, i.e., energy, transport, water, health, communications, media, data processing or storage, aerospace, defense, electoral or financial infrastructure, and sensitive facilities, as well as land and real estate crucial for the use of this infrastructure,
- **critical technologies and dual-use items**, including, among others, artificial intelligence robotics, semiconductors, cyber-security, quantum and nuclear technologies, and nanotechnologies,
- the supply of **critical inputs**, including energy or raw materials, as well as food security,

– **access to sensitive information,** including personal data,
– **the freedom and plurality of the media**.

In addition, the Commission and Member States may consider other sensitive aspects of the planned FDI project. These could be the direct or indirect control of a foreign investor by the government of a third country, the previous involvement of a foreign investor in activities affecting security or public order in a host country, as well as the risks that a foreign investor engages in illegal or criminal activities.

The regulation also lists projects and programs of Union interest that could be affected by FDI on the grounds of security or public order and which deserve special attention from the Commission. These are the projects and programs which involve a substantial amount or a significant share of Union funding, or which are covered by Union law regarding critical infrastructure, critical technologies, or critical inputs and which are essential for security or public order. The list includes European GNSS programs (Galileo & EGNOS), Copernicus, Horizon 2020, Trans-European Networks for Transport (TENT-T), Trans-European Networks for Energy (TEN-E), Trans-European Networks for Telecommunications, European Defence Industrial Development Programme, and Permanent structured cooperation (PESCO) (Annex OJEU 2019).

The regulation foresees the establishment of **two tracks** of **the cooperation mechanism** between the Commission and the Member States, i.e., **in relation to FDI undergoing and not undergoing screening** (Articles 6 and 7 OJEU 2019). The obligations and entitlements of the parties included in these mechanisms are defined by the regulation as well as the timeframe of the procedure.

The first stage of the cooperation process concerning **FDI undergoing screening** starts when a Member State, where the FDI takes place, **notifies** both the Commission and other Member States of cases which are undergoing national screening. The Member State in question is obliged to **provide information** (Article 9 OJEU 2019) on the investment, which includes basic data on the FDI, i.e., the ownership structure of the foreign investor and of the undertaking in which the FDI is planned or has been completed, the approximate value of the FDI project and sources of the funding of the investment, sectors in which the foreign investors operate and in which the undertaking is planned or has been completed, the Member States in which the foreign investor and the undertaking in question conduct relevant business operations, as well as the date when the FDI is planned to be completed or was completed.

Furthermore, the Member State **may request** that the Commission **issues an opinion** or that other Member States **provide comments** when it duly considers that an FDI in its territory is likely to affect its security or public order.

At **the second stage** of the cooperation process, both the other Member States and the Commission can request additional information from the Member State initiating the screening. The Member States may provide comments, and the Commission may issue an opinion addressed to the Member State undertaking the screening. This opinion is issued when the Commission considers that the FDI undergoing screening is likely to affect security or public order **in more than one** Member State, or has rele-

vant information concerning that FDI project. The Commission may issue an opinion, following comments from other Member States or irrespective of whether they provided comments. However, the Commission **shall issue** such an opinion where justified, after **at least one-third** of Member States consider that the FDI is likely to affect their security or public order.

In addition, the regulation stipulates that the Commission may issue an opinion addressed to the Member States where FDI is planned or has been completed if it is likely to affect projects or programs of Union interest mentioned above.

The third stage embraces actions undertaken by the Member State initiating the screening of the FDI. Namely, the Member State shall give **due consideration** to the comments of other Member States and to the opinion of the Commission. If the Member State does not follow the EU's opinion, it should provide an explanation, in line with its duty of sincere cooperation under Article 4(3) TFEU. The final screening decision belongs to the Member States undertaking the screening, however. The whole procedure under the cooperation mechanism concerning an FDI undergoing screening usually lasts 35 days.

The cooperation process regarding an **FDI not undergoing screening** is similar to that described above. It foresees other Member States providing comments to a country in which an FDI is planned or completed if they consider that this investment is likely to affect **its** security or public order, or if they have relevant information to that investment. The Commission may issue a non-binding opinion following comments from other Member States, or it shall issue such an opinion where justified after at least one-third of Member States consider that FDI is likely to affect their security or public order. The difference between the two tracks can be attributed to the timeframe, which is up to 15 months after the completion of the investment.

The potential consequences of the EU framework for FDI screening

The proposal to introduce the new EU tool provoked differentiated opinions and controversy during the obligatory consultations. The opinions varied from accepting the regulation's proposal, including the entitlement of the Commission to screen an FDI (e.g., the opinion of the EESC), to opposing views expressed by some academics (EPRS 2019, pp. 7–9). Some proposals were unacceptable for the stakeholders, especially those authorizing the Commission to play a decisive role in screening processes.

There might be **potential consequences** of the new EU regulation for the EU as a whole, its Member States, and third countries. In addition, they might be intertwined and bring mirror effects.

The first assessments, taking into account the different scenarios of sensitive sectors being scrutinized, show potential implications related to: '*…1) the administrative resources required to conduct the screening, 2) the compliance costs, uncertainty and*

delays experienced by the acquiring firm, and 3) FDI inflows and access to capital for domestic firms' (Sunesen and Hansen 2018, p. 42).

The administrative costs are caused by the need to identify cases, the number of files, the complexity of the screening procedure, as well as the willingness of the potential investor to cooperate and disclose the required information. It is estimated that the number of files at the level of the EU might increase 1.5–2.5 times in comparison to the pre-regulation period. The administrative costs include personnel costs as well as the costs of experts, which constitutes a financial burden for the EU and its Member States. The practice of some of the Member States thus far shows that the cost of screening can be borne by an applicant or a notifying party (Sunesen and Hansen 2018, p. 42).

Compliance costs, uncertainty, and delays may occur in the process of screening. These costs, which are connected with foreign investors adjusting to EU requirements, or delays in investment projects, will be borne by the firms applying. If it is the case, these costs could negatively influence their long-term competitiveness. This causes a potential burden for foreign investors. The cooperation mechanism between the Commission and the Member States is expected to extend the decision period. As the final decision might be negative, it gives rise to uncertainty on the investor's side. The occurrence of the above-mentioned costs might negatively influence potential investors' decisions on investing in the EU Member States. This could result in **some Member States having reduced access to capital**, especially the smaller and 'new' ones (Sunesen and Hansen 2018, pp. 43–44).

The last aspect requires special attention because the Member States show differentiated attitudes towards third countries' investment, especially Chinese investment. The new EU Member States from CEE and China seem to be interested in cooperation under the '*One Belt, One Road'* (OBOR) initiative, which was not explicitly approved by the 'old' Member States. The new EU Member States experience a shortage of capital for infrastructure projects. The economic interests of the 'old' Member States are related to protecting strategic sectors and key technologies in the context of security and public order. In turn, the new EU framework might be perceived by these new Member States as an effective instrument of controlling FDI inflows from other third countries, e.g., Russia. These discrepancies in economic and political interests could lead to tensions within the EU.

Furthermore, the new EU screening mechanism could be perceived by **investors from third countries as discriminatory and disproportionate,** and it could trigger a negative reaction in third countries (Sunesen and Hansen, 2018, pp. 43–44). The new regulation does not officially target Chinese investment flows into the EU, and the Chinese authorities do not react officially against it. However, it is believed that Chinese FDI in the EU is a major reason for the legislation. Some fears are expressed that: '*…Chinese FDI coming into the EU might be subject to disproportionate scrutiny, even discrimination in the coming years*' (Weihua 2019). In this context, there is an opinion that the EU, as a whole integration grouping, will be less open to FDI while Chi-

na further opens up its economy (Weihua 2019). China has adopted the new *Foreign Investment Law,* which will enter into force on 1 January 2020. It includes provisions addressing issues of crucial importance for foreign investors, i.e., pre-establishment national treatment, the protection of foreign investors' intellectual property rights, and improved investment protection in comparison to the previous law (China adopted the Foreign Investment Law 2019).

The analyses and assessments confirm that the new EU screening mechanism could particularly impact Chinese investors since the criteria formulated in the regulation encourage the Member States to specifically screen state-supported investment projects in sensitive technologies and critical infrastructure. According to estimations of the Rhodium Group and the Mercator Institute for China Studies, 82–83% of Chinese M&A transactions in Europe in 2018 would fall under at least one of those criteria (Hanemann, Huotari, Kratz 2019, pp. 7, 18). Although the impact of the new regulation on Chinese investment might not automatically be negative, the strengthening of the screening mechanism in the Member States has already impacted Chinese investment in the EU. The Chinese FDI inflows into the EU continued to decline in 2018, which could be attributed to the stricter control and screening carried out by the Member States on the basis of hitherto national mechanisms. Meanwhile, transactions worth 15 billion EUR were pending at the beginning of 2019 (Hanemann, Huotari, Kratz 2019, pp. 7, 18, 20). It has also been noticed that the introduction of the EU screening framework could cause a short-term decrease in Chinese investors' activities because they might be checking the effectiveness of the new system (Szczudlik, Wnukowski 2019, p. 2). As these analyses show, the new regulation is bound to influence economic and even political relations between the EU and third countries.

The debate on risks from economic engagement with China is expected to extend far beyond FDI screening, and the broader scrutiny of Chinese commercial presence in Europe might happen in the future (Hanemann, Huotari, Kratz 2019, pp. 7, 20–21).

Finally, the impact of the new EU framework for FDI should be discussed in the context of the development of **the EU's common investment policy.** Although some doubt has been raised about whether the new EU screening system can be treated as a solution or a problem (Esplugues 2019), regulation in this field might be perceived as the first step in achieving progress in establishing a new instrument of the EU's common investment policy. Some provisions of the new regulation confirm that the EU's common interests in this field have to be taken into account. They are the provisions related to the cooperation mechanisms between the Member States and the EC, including the obligatory exchange of information between parties, the obligation to explain why EC opinions are not taken into account, and the establishment by all the Member States and the EC of contact points for the implementation of the regulation.

Conclusions

Two contradictory trends have occurred in national investment policies over time, i.e., liberalization, promotion, and facilitation measures versus restrictions and regulations on FDI.

The change in perception of FDI restrictions has been observed in the longer term. The screening mechanism was treated as an instrument of restrictive policy towards FDI in developing countries and economies in transition two to three decades ago. Nowadays, developed countries introduce this instrument as a fully justified component of their policies towards FDI in their strategic sectors. In general, FDI screening might be perceived as a soft instrument substituting more restrictive policy instruments, such as 'negative lists.'

The EU common investment policy, established by the Lisbon Treaty, gives EU institutions new external competences including foreign direct investment (FDI) into the common trade policy, and it confirms the delimitation of competences between the Union and the Member States. This legal basis was used for the establishment of the EU screening framework for FDI. The justification for the introduction of the new tool was the need to protect the EU's economic interests in relations with third countries.

The new system of screening FDI inflows into the EU from third countries is not centralized. The right to screen remains the sole responsibility of the Member States; hence, their hitherto competences are not limited. This feature of the new system is criticized by the proponents of the leading role of the EU institutions in this area. However, the co-ordination mechanism which has been constructed at the level of the EU seems to give guarantees that common interests will be protected.

The consequences of the EU screening framework for FDI might have economic and political dimensions. Apart from administrative and compliance costs, as well as uncertainty and delays related to investment decision processes, two categories of potential consequences seem to be important: the expected reduced access to capital by some Member States and the worsening of the relations with external partners, especially China.

All potential consequences of the FDI screening framework, foreseen for the whole EU, may occur in the case of the new EU Member States from Central and Eastern Europe. Additional costs, uncertainty, and delays connected with screening processes may negatively influence the scale of FDI inflows into their economies. The EU screening framework for FDI may also have adverse effects on future cooperation between the new EU Member States and China in the field of infrastructure projects as well as some activities in other sectors. Nevertheless, the new EU Member States from Central and Eastern Europe may be interested in using the new instrument to control FDI inflows from the third countries, e.g., from Russia.

Dilemmas arise regarding whether the new regulation constitutes a solution or a problem, and whether it will be used to discriminate against foreign investors.

The effectiveness of the new EU mechanism will be checked in practice. The achievement of the main EU goals related to the protection of public interests and security might encounter official or unofficial counter-measures undertaken by third-country partners.

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Streszczenie

Screening bezpośrednich inwestycji zagranicznych w Unii Europejskiej: konsekwencje dla stosunków zewnętrznych

Traktat Lizboński nadał instytucjom Unii Europejskiej (UE) nowe kompetencje w stosunkach zewnętrznych, włączając bezpośrednie inwestycje zagraniczne (BIZ) do wspólnej polityki handlowej. Wykorzystując te kompetencje Komisja Europejska sformułowała propozycję regulacji ustanawiającej ramy dla screeningu BIZ, która weszła w życie w kwietniu 2019 r. Celem niniejszego artykułu jest dyskusja nad kwestią screeningu jako elementu polityki wobec inwestorów zagranicznych, prowadzonej przez kraje rozwinięte, ocena uzasadnienia wprowadzenia screeningu oraz jego potencjalnych konsekwencji dla napływu BIZ do UE. Przyczyną wprowadzenia nowego instrumentu na poziomie UE była potrzeba ochrony strategicznych ekonomicznych interesów UE w stosunkach z krajami trzecimi. Nowy system screeningu BIZ napływających do UE nie jest scentralizowany. Prawo do screeningu pozostaje w wyłącznej kompetencji krajów członkowskich. Jednak mechanizm koordynacji na szczeblu UE wydaje się dawać gwarancję, że wspólne interesy będą chronione. Należy spodziewać się, że nowa regulacja przyniesie ekonomiczne i polityczne konsekwencje. Oprócz kosztów administracyjnych, a także związanych z procesami dostosowawczymi, niepewnością i opóźnieniami projektów inwestycyjnych, dwie kategorie skutków wydają się być szczególnie istotne. Są to: ograniczenia w napływie BIZ do niektórych krajów członkowskich UE, w szczególności tzw. 'nowych' oraz pogorszenie się relacji z krajami trzecimi, w szczególności z Chinami.

Słowa kluczowe: Bezpośrednie inwestycje zagraniczne (BIZ), screening, Unia Europejska (EU), stosunki zewnętrzne, chińskie inwestycje zagraniczne

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Eco-innovation and International Competitiveness of Enterprises Results for European Union Member States

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Abstract

Intensive global warming, declining natural resources, and pollution are the factors influencing the wider debate about what creates a "green economy." Taking the above into account, the purpose of this paper is to present an overview of the eco-innovation performance of European Union members and, at the same time, their overall level of innovativeness. The paper also provides insights into the role of eco-innovation as the driving force for the international competitiveness of enterprises from European Union countries. The results at the macro level show that there is a strong interdependence between the level of innovativeness and the level of eco-innovation implementation in the EU Member States. In turn, the micro-analysis conducted for EU enterprises shows that there is an interdependence between the introduction of eco-innovation with benefits for the end-user and the level of international competitiveness measured by the intensity of exports. Enterprises from countries with a higher overall Innovation Union Scoreboard (IUS) and Eco-Innovation Scoreboard (Eco-IS) are simultaneously characterized by a higher intensity of eco-innovation, introducing benefits for the end-user, and an intensive presence with sales on foreign markets. Enterprises from countries with low IUS and Eco-IS rankings, including the countries of Central and Eastern Europe, are characterized by a relatively low intensity of introducing eco-innovation accompanied by a relatively low export intensity.

Keywords: Eco-innovation, International competitiveness, Innovation Union Scoreboard, Eco-Innovation Scoreboard, Community Innovation Survey (CIS)

JEL: F64, O32, O44

Introduction

Recent decades of economic growth have been accompanied by growing global environmental problems, such as global warming and the increasing scarcity of natural resources. In this context, the concept of sustainable development (SD) and eco-innovation (E-I) have become a hot issue for both the economy and business, as they are at the center of the discussion on possible ways to transition to a low carbon economy.

The essence of the debates conducted on this subject is based on the concept of eco-innovation, defined as:

"The introduction of a new or significantly improved product (product or service), process, organizational or marketing method that allows limiting the use of natural resources (including materials and raw materials, energy, water and land) and reduces the emission of harmful substances throughout the product's life cycle" (Environmental Investment Organization – EIO 2010). This indicates the extension of the concept of eco-innovation from areas related to environmental protection to any processing activity.

In the literature, the links between innovativeness, including that related to eco-innovation and international competitiveness, are widely discussed, both at the macro level (WEF 2013–2014, pp. 4–7), and in the microeconomic literature (Brusoni, Cefis & Orsenigo 2006; Halpern 2007).

In turn, analysis of the competitive strategy on the international market of enterprises from Central and Eastern Europe, including Poland, suggests that although they still have high cost and price advantages, the role of factors related to the differentiation of the offer increases significantly (Stojcic, Hashi & Telhaj 2011), also based on ecology-related solutions.

The purpose of this study, taking into account the definition and scope of its application, is to present a review of the issues related to eco-innovation in the EU Member States, and to examine whether and to what extent there is a connection between the introduction of eco-innovation (innovations whose effects are environmentally friendly) and the sales orientation to international markets.

Those issues lead us to two research questions, at both the macro and micro level:

1. Is there a relationship between the level of overall innovation performance, measured by the Innovation Index, and the level of innovativeness related to eco-innovation measured by the Eco-Innovation Index of European Union Member States?
2. Is there an interrelation between the intensity of introducing eco-innovation with the benefits for the end-user and international competitiveness measured by the export of enterprises from European Union Member States?

Statistical analysis of the above issues is based on data from the Innovation Union Scoreboard (IUS) 2018, the Eco-Innovation Scoreboard (Eco-IS) survey from 2013–2017, and data from the Community Innovation Survey 2010–2012, for enterprises from the European Union countries in the part concerning eco-innovation and firms' market orientation.

Defining eco-innovation

Green, sustainable, or eco-innovation is defined as the production, application, or exploration of goods, services, production process, organizational or management structures, or methods of business that are new to the company or user. The results are the reduction of environmental impact, less pollution, or fewer negative impacts from the utilization of resources compared with corresponding alternatives (Gerlach 2003; Arundel & Kemp 2009).

The OECD defines eco-innovation as "the implementation of new, or significantly improved, products (goods and services), processes, marketing methods, organizational structures and institutional arrangements which, with or without intent, lead to environmental improvements compared to relevant alternatives" (OECD 2009, p. 40).

Eco-innovation affects, directly or indirectly, various groups of stakeholders who expect tangible benefits. This means a holistic approach to managing eco-innovations, which seems to be much more difficult than in the case of "conventional" innovation, due to the growing public awareness of sustainable development.

The above definition reflects the principles contained in the concept of Corporate Social Responsibility (CSR) being consistent with the definition of sustainable development (SD), in which the integration of social, economic and ecological issues, with the awareness of bearing their consequences and responsibility before the current and future generations, is emphasized (Dorożyński & Kuna-Marszałek 2016; Wysokińska & Witkowska 2016).

Comparing the "traditional" innovation with sustainable/eco-innovation, one can notice the existence of significant differences (Yarahmadi & Higgins 2012). First of all, eco-innovation cannot be based on an open, fluid concept because it refers to innovation, which explicitly emphasize the need to reduce emissions to the environment, regardless of whether these effects were or were not previously defined (OECD 2009).

Secondly, eco-innovation is not narrowed by the definition referring to the type of innovation – product, process, marketing, or organizational – as it causes additional changes to be made concerning social norms, cultural values, and institutional structures, regardless of which areas of the company's operations a change has been made in. The scope of eco-innovation goes beyond the conventional organizational boundaries of the company to cover a wider social environment. That is why – and this is the third difference – the total environmental impact of an eco-innovation is very difficult to assess (Horbach et al. 2013).

Scientists studying the issues of eco-innovation believe that it requires more intensive, closer cooperation in the field of R&D than is the case with "conventional" innovation (de Marchi 2012).

Much attention is also paid to the significance of eco-innovation determinants, in particular, technological stimulators (technology push) and the pressure exerted

by demand-factors on rationalizing the innovative activity of the company (the demand-pull factors). In the initial phase of developing a new product, factors related to technology requirements are particularly important, whereas the demand factors become important in its diffusion phase (Pavitt 1984).

It is important and worth emphasizing that eco-innovation can bring positive side effects in both phases of the life cycle, the initial phase and the diffusion phase, which further increases the need for investment. The problem of "double externality" does not encourage investing in eco-innovations and is treated as an additional key feature of eco-regulation (Kemp 2000).

Expenses related to environmental protection are often treated as an additional cost imposed on enterprises, which results in the obligation to allocate certain resources to reduce pollution and, consequently, it lowers management efficiency. Many researchers, especially Michael Porter and Claas van der Linde (Porter & van der Linde 1995b), began to call into question such an approach. They indicate that the overlapping regulations are more demanding, although when they are properly applied, they can encourage innovation and even more than fully compensate for the incurred costs (Porter & van der Linde 1995a).

Eco-innovation and the idea of sustainable development in European Union Member States

Europe 2020, the European Union's plan outlining the development directions of the member countries, defines three mutually-related priorities: intelligent development, sustainable development, and inclusive growth. The program envisages a definite shift of the current resource management model towards a low-emission economy (EC 2010; Wysokińska 2013, 2014).

Planned projects under the Eco-Innovation Action Plan-EcoAP, which was adopted in December 2011, should facilitate the introduction and diffusion of eco-innovation. Implementing the Action Plan should bring environmental benefits, create favorable conditions for economic development, enable the creation of new jobs, and ensure the more efficient use of resources whose supply is limited. The emphasis is on eliminating development blockades, coping with challenges, and using the possibilities of achieving environmental objectives created by technological and non-technological innovations (Lewandowska 2016).

As part of the next long-term EU budget 2021–2027, a new LIFE program for the Environment and Climate Action was adopted. It focuses on protecting the environment and mitigating climate change, and supporting a clean energy transition with increased energy efficiency and a higher share of renewables in the energy mix.

As for future challenges, the European Commission adopted a long-term strategic vision for a modern, competitive, and climate neutral economy by 2050 – A Clean Planet for all. "The strategy shows how Europe can lead the way to climate

neutrality by investing into realistic technological solutions, empowering citizens, and aligning action in key areas such as industrial policy, finance, or research – while ensuring social fairness for a just transition" (European Commission, Press Release Database).

Since monitoring the ecological situation in the Member States is one of the key tasks of the Union, a special tool for assessing and observing eco-innovation in individual member states has been built for its implementation (Eco-Innovation Scoreboard – Eco-IS).

The indicators used in the Eco-Innovation Scoreboard to assess the eco-innovation situation are divided into five groups, including: (1) eco-innovation inputs (including expenditure related to the early stage of investment in clean technology); (2) eco-innovation activities; (3) eco-innovation results (e.g., relevant patents); (4) resource efficiency; (5) socio-economic results (such as turnover resulting from the implementation of eco-innovation, employment related to eco-innovation, and exports resulting from eco-innovation).

The indicators created to reflect the turnover and employment associated with eco-innovation include information on waste, recovery and recycling (re-use), and for the first time, repairs, maintenance, and rental services.

Table 1 presents the results of the analysis of data based on Eco-IS for the years 2013–2017.

The results, which are based on Eco-IS data that refers to the period 2013–2017, indicate the existence of huge differences between the EU-15 group and the new members of the Union when it comes to comparing the overall situation in the field of eco-innovation.

At the head of the ranking of countries classified in the field of eco-innovation were Sweden, Finland, Germany, Luxembourg, Denmark, and Slovenia (only one representative of new member states), which obtained significantly higher relative results than the average for the EU 28. This group of countries is referred to as "Eco-Innovation Leaders."

Countries such as Austria, Italy, Spain, Portugal, the United Kingdom, France, Ireland, the Netherlands, and Malta are considered "Average Eco-Innovation Performers", whose synthetic index fluctuated around the average EU indicator.

The remaining countries are included in the group of "Catching up Eco-Innovation Performers."

Considering the value of the Eco-IS index, it should be noted that the countries located in the north and west of the Union are significantly ahead of countries located in the east and south east.

Clustering the data from the latest Innovation Union Scoreboard and from the Eco-Innovation Scoreboard, one can observe that there are three main groups of countries: those that have high scores in both sets of data (they are marked with a rhombus), those where both scores are medium (marked with a circle), and those where both scores are low (marked with a triangle) (see Chart 1 for more details).

Table 1. Ranking of EU member states based on the Eco-Innovation Scoreboard, data for the period 2013–2017

Country	2017	2016	2015	2014	2013
Sweden	144	128	121	121	140
Finland	141	133	131	129	133
Germany	139	135	132	135	138
Luxembourg	139	140	125	139	114
Denmark	120	129	131	131	129
Slovenia	117	102	93	93	71
Austria	113	109	105	103	107
Italy	113	110	104	100	97
Spain	112	99	109	111	120
Portugal	105	96	92	92	81
United Kingdom	105	113	113	104	130
Average for the EU	100	100	100	100	100
France	99	106	113	112	113
Ireland	99	95	94	98	96
Netherlands	88	92	100	99	96
Malta	86	65	59	50	68
Belgium	83	82	90	90	98
Czech Republic	82	80	87	84	66
Lithuania	82	82	66	66	63
Greece	77	78	66	65	61
Slovakia	74	79	61	61	42
Latvia	73	86	65	65	43
Romania	65	67	71	68	55
Hungary	63	61	73	74	58
Estonia	62	65	59	58	56
Poland	**59**	**56**	**44**	**53**	**30**
Cyprus	45	56	43	44	33
Bulgaria	38	29	29	31	20

Note: for the standardization of the indicator, the "Distance from reference data" method was used, taking into account the EU average, defined as a reference and a set of 100. A population-based weighting was assigned to the national data referring to the individual indicators in order to estimate the EU average, correcting deviations resulting from including the smallest EU countries in the calculations.
The table does not include data for Croatia as they were incomplete.
Source: own elaboration based on Eco-Innovation Scoreboard data 2013–2017.

Table 2. Detailed Eco-Innovation Scoreboard indicators for European Union Member States for 2017

Country	EI inputs	EI activity	EI results	REP	SER
Sweden	166	148	182	154	77
Finland	200	155	202	49	102
Germany	178	151	130	121	113
Luxembourg	104	124	220	183	72

Country	EI inputs	EI activity	EI results	REP	SER
Denmark	178	58	154	139	70
Slovenia	141	124	153	66	130
Austria	91	142	115	128	89
Italy	66	111	112	180	101
Spain	75	106	139	162	72
Portugal	104	134	100	107	81
United Kingdom	102	87	65	160	82
France	118	10	107	110	89
Ireland	113	58	69	174	55
Netherlands	88	38	91	111	77
Malta	23	116	77	163	7
Belgium	94	11	93	95	75
Czech Republic	81	126	49	44	111
Lithuania	29	94	93	91	106
Greece	57	96	142	50	63
Slovakia	27	90	33	87	124
Latvia	41	41	105	75	110
Romania	53	37	55	60	113
Hungary	39	47	13	76	125
Estonia	50	76	90	2	109
Poland	**43**	**17**	**53**	**38**	**145**
Cyprus	4	39	113	62	6
Bulgaria	30	37	33	4	92

REP – Resource Efficiency performance; SER - Socio-Economic Results.
Source: own elaboration based on Eco-Innovation Observatory Thematic Report on Water (2018).

According to the data from the Eco-IS 2017 edition, Poland was in third place (before Cyprus and Bulgaria), achieving a result significantly lower than the EU average (59 vs 100) and a significantly lower result than the one obtained by Sweden (144 vs 100), an EU leader in eco-innovation. Poland is low in all indicators calculated in the Eco-IS, with a particularly low level in R&D spending and investments in innovation (indicator 43), innovative activity (indicator 17), as well as the economic performance of the implemented Eco-IS innovation (index 53) (Details Table 2). It is worth emphasizing, however, that while the results from the "hard" components of the indicator are consistent with the ranking and the synthetic index, the results in the three groups of countries, taking into account the socio-economic results, are very diverse. In this case, Poland, Hungary, and Slovakia (145, 125 and 124, respectively) had better scores than many countries – even the Eco-Innovation Leaders. In terms of this variable, Poland was the best performing EU country, in particular, in the indicators for employment in the ecological and circular economy sectors, while Slovakia achieved the best results in terms of the revenue ratio in the ecological and circular economy sectors (as a percentage of total revenues in all companies). In this respect, Sweden, Luxembourg, and Denmark obtained results well below the EU average.

In the context of these results, it should be underlined that the strategic goal of the sustainable growth of the Polish economy should refer to reducing the existing imbalance between economic and social growth, as well as between socio-economic development and the natural environment (Kasztelan 2010).

The innovativeness and international competitiveness of enterprises – theoretical issues and results of empirical research

The interdependence between innovation and international competitiveness is the subject of research in many countries. The international competitiveness of enterprises may be based on distinguishing the product offer (differentiation) or the cost advantage. The results of research conducted at the macro and meso level indicate that, in the long term, innovations that bring a competitive advantage resulting from differentiation bring better results than innovations resulting in a cost advantage (Verspagen & Wakelin 1997; Fagerberg 2002; Montobbio 2003).

For the purposes of this study, we assume that the international competitiveness of an enterprise is its ability to achieve and maintain a competitive advantage on a foreign market, or on a domestic market surrounded by foreign competitors, resulting from the resources it owns. Due to the type of data used in the study, this measure will be the entity's declaration regarding sales on foreign markets (exports).

One of the main factors that build the international competitiveness of enterprises is product innovation. The differentiation of the offer has become a more important success factor for exporters in many industries than the cost advantage, while in cost competition it is increasingly important to maintain a competitive level of product quality (Calantone & Knight 2000).

In research on British enterprises, it was found that innovation performance increases the likelihood of firms starting to export (Bleaney & Wakelin 2002). In this vein, research on Spanish companies showed that the involvement of companies in the introduction of product innovations increases the probability of penetrating new markets (Cassiman & Martinez-Ros 2007).

Becker and Egger (2007), in their study on German enterprises, proved that product innovation is the leading factor in strengthening the propensity to develop exports.

It has to be underlined that empirical studies rarely confirm such an unequivocal influence of process innovations on exports, as in the case of product innovations (Becker & Egger 2007). Research of Norwegian, Swedish, and Finnish enterprises found a significant positive impact of product innovations on both the propensity to export and the intensity, while the impact of process innovations is insignificant in these companies (Clausen & Pohjola 2009).

While research on the relationship between SD/CSR and innovations and their impact on enterprises' results do not give clear conclusions (Marin 2014), many empirical studies conducted, mainly in mature economies, show a positive relationship between CSR and innovations in the context of companies' competitiveness (Surroca et al. 2010; Gonzalez-Ramos et al. 2014).

Some authors even say that eco-innovation is more important than "conventional" innovation in determining the company's performance (Doran & Ryan 2012).

Companies that use the SD concept have to introduce various types of innovations (including product, process, marketing, and organizational innovations) with a positive environmental (and social) impact that can be a source of competitive advantage (Bansal 2005).

It should be emphasized that, in most cases, environmental innovations/eco-innovations have a typical business goal aimed at reducing the costs of the production process or product characteristics. Alternatively, they are designed to improve product quality and thus improve the competitive situation of the company while reducing the environmental impact. This type of eco-innovation is no different from other innovations regarding products or processes that are also aimed at increasing process efficiency or gaining market (Buczkowski et al. 2016).

Carillo-Hermosilla et al. (2009, p. 199) list the following E-I implications for a company's competitiveness: increasing the efficiency of raw materials and energy use; cost reduction; improving the functionality of products (better adaptation to the needs of buyers); creating new markets; increasing sales revenues; improving profitability.

Involvement in E-I is more likely when achieving a positive environmental impact can be combined with savings and improved efficiency (Horbach et al. 2013).

E-I can give an enterprise a cost competitive advantage thanks to the development of technology, new production processes, logistics, and innovative organizational solutions that mean that less use of materials and energy, and a reduction of emissions, production, and logistics, etc. (Gonzalez-Ramos et al. 2014).

Businesses that focus on cost-cutting innovations can also achieve environmental benefits through innovations in organic products, for example, by redesigning a product to reduce production costs (by reducing product functionality), which can also bring environmental benefits such as lower consumption of materials and energy, or lower emissions in production processes.

Although most E-I research focuses on building cost competitiveness, it should be noted that different types of E-I can also be a source of competitive advantage based on differentiation (McWilliams & Siegel 2001; Bansal 2005). This type of advantage can be built by improving the product design and its functionality or by using product components that meet ecological standards, by increasing product durability, easy servicing, ecological recycling of the product and its packaging, etc.

In addition, the product/brand and/or offering differentiation can strengthen the company's reputation regarding the environment, which increases the value that stakeholders perceive and strengthens customer loyalty (Bhattacharya, Sen 2004). Building

such a reputation may, however, require innovative marketing communication (like brand change/labeling, modified advertising, or PR), which will raise the awareness of SD/CSR sensitive customers (Boehe & Cruz 2010).

A reputation based on sustainability increases the value perceived by customers and increases customer loyalty. Consumers, however, are inclined to prefer (and pay) for an eco-innovative product if it provides measurable, easy to estimate value-added (Doran & Ryan 2012). Enterprises also introduce eco-innovations that serve only to reduce the impact on the environment. However, this is mainly the case when regulations interfere with the economy and somehow enforce innovations. On the other hand, some studies show that regulation is one of the most important factors that determine the transfer and diffusion of eco-innovation (Cetindamar 2001).

Many studies also describe the reverse relationship (reverse causality), that is, the coupling between export and innovation. The authors of the studies point to the learning process following sales to foreign markets (learning by exporting – LBE), which results in increased productivity, scale of sales, investments in R&D, but also in new solutions in the products that are offered (Kafouros et al. 2008; Mińska-Struzik 2012). For example the research of Slovenian enterprises shows that past exportong increases the likehood (for medium and large companies) of introducting process innovation (Damijan, Kostevc, Polanec 2008). There is also a recent study (Hojnik, Ruzzier, Manolova 2018) exploring the relationship between internationalization and firm economic performance by investigating the mediating effect of eco-innovation. Based on data from 151 Slovenian internationalized companies with the SEM method, the authors discovered that internationalization is significantly and positively associated with the economic performance of the investigated enterprises, and that eco-innovation mediates this effect. The results show that introducing eco-innovation cannot be neglected when entering foreign markets.

Despite this positive relationship, the majority studies on the relationship between exports and innovations point to the lower effectiveness of "learning by exporting" and the stronger impact of innovation on exports (Monreal-Pérez, Aragón-Sánchez, Sánchez-Marín 2012).

For the purpose of this study, in order to examine the relationship between the introduction of eco-innovation and its presence with an innovative product on international markets, data from the Community Innovation Survey questionnaire are used.

In the CIS 2010–2012 questionnaire, a question regarding eco-innovation was added following the model of the 2006–2008 questionnaire. The questionnaire included an optional, one-page package of 15 questions about innovations that bring environmental benefits (eco-innovations), covering the types of eco-innovations potentially introduced by the surveyed companies, as well as questions about eco-innovation stimulators.

One of the questions from the eco-innovation block indicates the implementation of innovations with environmental benefits obtained by the end-user. At the same

time, the questionnaire has a standard question regarding the market orientation of the enterprises. The question for enterprises whose largest market in terms of turnover was other EU, EFTA, and/or EU-candidate countries, was selected for the comparison.

Using data from both questions available for the entire and representative population of enterprises in EU countries, a graph showing the coexistence of two variables was constructed. Chart 2 illustrates this interdependence.

The results of the analysis are not completely unambiguous; however, they indicate that enterprises from countries with a higher overall Eco-IS index (higher than the EU average, i.e., Finland, Sweden, Germany, Slovenia, Luxembourg, Austria) are characterized by higher intensity of introducing eco-innovations that bring benefit to the final user and, at the same time, they are leaders of sales on foreign markets.

Enterprises from countries at the bottom of the Eco-IS ranking, including the countries of Central and Eastern Europe, are characterized by a relatively low intensity of introducing eco-innovations that bring benefits to the final user, and there is also a relatively low intensity of exports. The exceptions are enterprises from Slovenia and the Czech Republic. However, it should be emphasized that Slovenia has occupied a very high position in the Eco-IS ranking for many years, belonging to the Group of Eco-Innovation Leaders, while the Czech Republic, although its synthetic index is lower than the EU average, is the leader of the so-called eco-innovation catching-up countries.

Conclusion

In light of the Strategy for the European Union, eco-innovations will definitely play one of the most important roles in stimulating the development of the economies of the Member States. The proper implementation of the eco-innovation policy should, in this context, become one of the most important tasks for the Polish government (Grodzka & Zygierewicz 2008).

The results of analysis, in particular, concerning the macro-level, indicate that the Polish economy has a long way to go in terms of the ecological solutions used, and the process itself is long-lasting and requires huge financial outlays.

It should be underlined, however, that the interrelation between the overall level of innovativeness and the overall level of eco-innovativeness was proven, although it does not indicate causality.

It seems that accelerating the implementation of eco-innovation should be accompanied by improving environmental standards, while the approach to increasing innovation should be left to industry, and not to standard-setting organizations. Environmental standards should promote continuous improvement and should leave as small a margin of uncertainty as possible at every stage of the eco-innovation implementation process (Porter & van der Linde 1995a, 1995b).

The Government's efforts should be directed not only to changing the current environmental policy, but also to building the basis for the creation of a legal and institutional environment to promote changes in education, the behavioral attitudes of citizens, and the objectives of the companies (Kassenberg 2011; Miedziński 2013). This concerns not only eco-innovation but also "conventional" innovation, due to its proven interrelation. This requires increased spending on innovation and, simultaneously, an increase in the awareness of enterprises regarding the benefits of introducing different types of innovation as well as eco-innovations for building their market position, measured in a more holistic and long term perspective.

An important difficulty in the case of eco-innovation is the fact that the return on R&D investments incurred for technologies related to the environment is lower than the social effects of expenditures incurred; hence, companies are not strongly determined to invest in this type of innovation.

Polish companies, which in many cases are focused on achieving the earliest possible profit, without taking into account the long-term development perspective, should recognize that investing both in conventional innovation and eco-innovation will bring benefits in the long run. These benefits will be in the form of achieving a competitive advantage in an area that would be impossible to achieve in a traditionally run economy and building an international competitive advantage (Klima 2017, 2018).

Based on Community Innovation Survey data, significant shortcomings regarding the international competitive advantage are shown in the results of the analysis of the export activities of European Union enterprises (including Poland) in terms of innovations aimed at environmental protection, with particular emphasis on the needs of the final buyer.

It looks like Polish enterprises are somehow "stuck in the middle" – they do not have a serious competitive advantage concerning product-related eco-innovation, and at the same time, there is no significant international sales intensity of these products.

There is long way to go before they can achieve a satisfactory level of international sales of innovation related to ecological issues. This is probably the result of the still low level of awareness of the role of eco-innovation in building a long-term international competitive advantage; on the other hand, it also results from significant financial constraints.

Eco-expenditres can be enhanced by public financial support. Thus the applications to EU progmrammes, like Horizon Europe, which promote projects aimed at eco-innovation, should significanlty increse (Ziółko & Mróz 2015).

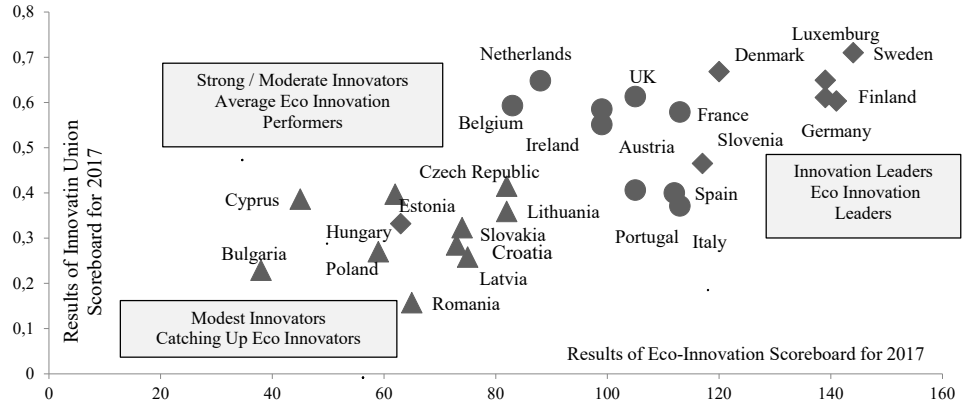

Chart 1. The interrelation between the level of overall innovativeness and the level of eco-innovation performance of the European Union member states, data for 2017
Source: own elaboration based on data from the Innovation Union Scoreboard 2017 and Eco-Innovation Scoreboard 2017.

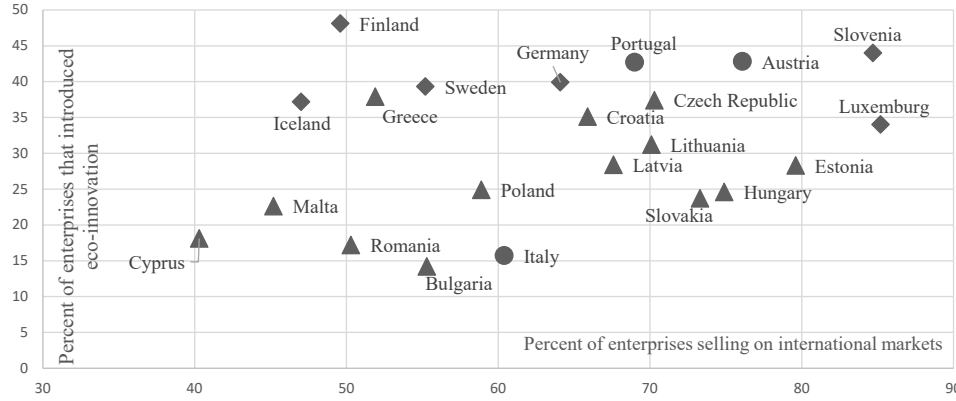

Chart 2. Coexistence of the introduction of eco-innovation with benefits for the end-user and sales on international markets
Source: own elaboration based on data from Eurostat Community Innovation Survey 2010–2012. http://epp.eurostat.ec.europa.eu/portal/page/portal/science_technology_innovation/data/database (accessed: 1.03.2019)

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Streszczenie

Eko-innowacje a międzynarodowa konkurencyjność przedsiębiorstw. Wyniki dla państw członkowskich Unii Europejskiej

Intensywne globalne ocieplenie, kurczące się zasoby naturalne, zanieczyszczenie środowiska to czynniki wpływające na intensywność debaty na temat tego, co tworzy „zdrową gospodarkę". Biorąc powyższe pod uwagę, celem niniejszego artykułu jest przedstawienie przeglądu wyników w zakresie eko-innowacji dla państw – członków Unii Europejskiej, w kontekście ich ogólnego poziomu innowacyjności. Artykuł dostarcza również wiedzy na temat roli innowacji ekologicznych jako siły napędowej międzynarodowej konkurencyjności przedsiębiorstw z krajów Unii Europejskiej. Wyniki analizy makro pokazują, że istnieje współzależność między poziomem innowacyjności a poziomem wdrażania eko-innowacji w państwach członkowskich UE. Z kolei analiza na poziomie mikro przeprowadzona dla przedsiębiorstw UE pokazuje, że istnieje współzależność między intensywnością wprowadzania eko-innowacji przynoszących korzyści użytkownikom końcowym a poziomem międzynarodowej konkurencyjności przedsiębiorstw mierzonym intensywnością eksportu. Przedsiębiorstwa z krajów o wyższym ogólnym wskaźniku IUS i Eco-IS charakteryzują się wyższą intensywnością wdrażania eko-innowacji, przy jednoczesnej intensywnej obecności na rynkach zagranicznych. Przedsiębiorstwa z krajów o niskim IUS, i niskim rankingu Eco-IS, w tym kraje Europy Środkowej i Wschodniej, charakteryzują się z kolei stosunkowo niską intensywnością wprowadzania eko-innowacji przy niskiej intensywności eksportu.

Słowa kluczowe: Eko-innowacje, międzynarodowa konkurencyjność, Innovation Union Scoreboard, Eco-innovation Scoreboard, Community Innovation Survey

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Mercosur – a Comparison of Four Member Countries on the Basis of Selected Economic Indicators

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Abstract

The aim of this paper is to present how countries can be compared on the basis of the development of selected macroeconomic indicators. The economic similarity of the four founding Mercosur countries (i.e., Argentina, Brazil, Paraguay, and Uruguay), based on the development of five selected macroeconomic indicators in the period 1991–2016, is investigated. The following indicators were analyzed: current account balance, GDP per capita, trade-to-GDP ratio, unemployment rate, and the GDP deflator, using data from the World Bank database. Using hierarchical cluster analysis of changes in time series (differences and growth rates), it was found that the obtained clusters of countries are different. For this reason, cluster analysis was carried out for two different groups of indicators on the basis of the averages of the Euclidean distances obtained for the individual indicators.

Keywords: Mercosur, cluster analysis, country comparison, regional integration

JEL: F10, F19, A10, C38

Introduction

Comparing the economic development of selected countries can be a useful tool to better understand changes in the evolution of some economic indicators and the relationships between certain economic cycles (this can later be reflected in political decisions, for example). Knowledge of some reactions in a certain group of countries can also be useful for other countries that may find themselves in similar situations. Moreover, the comparison of economic development might serve as the basis for further research aimed at learning whether some similarities in the development of the economies of certain countries may be a reason for choosing to enter into a form of regional grouping. In this article, we focus on the four founding Mercosur countries, i.e., Argentina, Brazil, Paraguay, and Uruguay.

The aim of this article is to investigate the economic similarity of these four countries based on the development of five selected macroeconomic indicators in the period 1991–2016. Section 2 explains why this goal was chosen, the applied methods will be introduced in Section 3, and Section 4 will address the issue. The results are discussed in Section 5.

Problem formulation

Regional integration is a process through which various national economies increase their complementarity, thereby striving to increase mutual benefits (CEPAL 2009). However, pooling countries into certain regional clusters is not an easy process from either a political or social point of view. Apart from the expected benefits, it can also bring disadvantages (Kritzinger 2015).

If a regional grouping has already been established, its functioning may not be completely seamless, e.g., as demonstrated on the case of Mercosur presented in Porta's paper (2008), and such functioning is thus usually accompanied by various open and behind-the-scenes disagreements. The very establishment of a regional grouping typically involves "logrolling": "I'll vote for your issue if you vote for mine" (Schiff and Winters 2003). Moreover, some regional associations overlap territorially and, in some cases, multiple memberships can cause considerable complications (Khan 2008).

Even the subsequent comparison of different regional processes is not a simple task because, as stated by Kugiel et al. (2013), a number of political, geographic, and social factors make the solutions developed in one region unique and hardly transferable to other regions. However, it is certain that the activity of all regional groupings across the whole world is unequal, and while some of them can be considered successful, or at least that they work well enough, others are rather passive. This is because states are principal actors, and their interests and preferences determine the course of the process (Mukhametdinov 2018). Mercosur could be ranked among the associations with relatively high activity.

However, it is to be expected that states that decide to cooperate and give up at least part of their sovereignty may not be incentivized only by the expected benefits but also because they can share similar attributes. The authors of this article decided to analyze how the economies of the four Mercosur member countries, co-operating in an economic area (irrespective of the short-term suspension of Paraguayan membership) for more than 25 years, are similar in terms of selected macroeconomic indicators.

This curiosity is motivated by the fact that expert texts that dedicate at least some of their attention to partial economic comparisons of the Mercosur member countries are scarce, and the authors focus more on comparing Mercosur with other regional or supraregional groupings.

Economic comparisons of the Mercosur countries were dealt with, for example, by da Silva and Batista (2015), who performed an evolutionary analysis of the structure of exports of the Southern Cone countries (Mercosur members and Chile) in the period 2000–2011, in order to determine the export performance of these countries. One of their conclusions, formulated through the use of the export similarity index, was that during the examined period, Brazilian exports were most similar to those of Argentina and Paraguay. However, at the same time, it was said that the similarity index in the analyzed period did not evolve and that all observed countries continued to be dependent on the export of primary and agricultural products. However, no other similarity than that of exports was investigated.

Certain facts were also provided by a study presented by the intergovernmental regional organization SELA (2014). In its study, several macroeconomic indicators of the Mercosur countries (including Venezuela) were presented for the period 2000–2012. However, these indicators were treated separately and, therefore, the study does not offer a comprehensive view of the economic similarity of the countries within the region. It would also be worth mentioning one of Arias's works (2008), which analyzed the levels of economic convergence before and after the adoption of the Asunción Treaty, not only between the Mercosur member countries but also between different sub-regions of Mercosur. The period under review was 1985–2003, but only one indicator, GDP per capita, was analyzed. Even in this case, we cannot talk about creating a complex picture of the economic similarity between particular Mercosur countries. One of the conclusions of Arias's study was that Paraguay, on the basis of the analysis of asymmetries of Mercosur, appeared to lag the most when it comes to economic convergence and revenue dispersion, and it was the weakest member of Mercosur.

Basnet and Pradhan (2017) explored economic interdependence in Mercosur by examining common trends and common cycles among key macro-variables (real output, investment, intraregional trade, exchange rate, and interest rate) that represent both the real and financial sectors of the economy. Their findings provide consistent evidence that, with respect to these sectors, economic interdependence among the Mercosur countries is strong.

Methods

In order to meet our established goal, the economies of the four Mercosur countries, namely Argentina, Brazil, Paraguay, and Uruguay, were compared based on the development of selected macroeconomic indicators. These indicators are the current account balance (in current prices), the gross domestic product (hereinafter referred to as GDP) per capita (in current prices), the trade-to-GDP ratio (in %), the unemployment rate (in %) and the GDP deflator (in %). For all of these indicators, annual data for the period 1991–2016 were traced, i.e., from the beginning of Mercosur's existence until 2016, for which data are already available for all four countries.

This paper stems from World Bank statistics. The primary intention was to work with national institutions' statistics (in the case of Paraguay and Uruguay, it was the central banks of these countries; in the case of Argentina and Brazil, it was statistical offices there). However, the data did not always cover our set period beginning in 1991, when the Asunción Treaty de facto established Mercosur, through 2016, for which definite data already exist. The incomplete data for our time series was an obstacle for introducing other relevant indicators (e.g., other balances of the balance of payments).

In the following text, there is a graphical presentation of the development of the five monitored indicators for all the selected countries, and on the basis of year-on-year changes (differences and percentage changes), the similarity of these countries is examined. The Euclidean distance was used to express the relationships between countries.

Based on the obtained proximity matrix for all pairs of countries, hierarchical cluster analysis is applied using three linkage methods: single, complete, and average. The linkage of two clusters is made on the basis of the minimum distance between clusters, during the use of the single linkage method, this inter-cluster distance is the smallest distance indicated for two countries that are in different clusters, for the complete linkage method, it is the largest distance, and for the average linkage method, it is the average distance. The results of the hierarchical clustering of countries can be graphically represented by dendrograms.

Cluster analysis is used both for each indicator separately and for two groups of indicators. The statistical analysis was carried out in the STATISTICA program system.

The application of cluster analysis to time series is described in a number of publications. Liao (2005) summarizes selected applications while specifying the application area, the used distance measures, cluster analysis methods, original sources, and other characteristics. We cluster only four countries; therefore, a hierarchical approach can be used. The clustering of countries is based on changes (differences and percentage changes) in time series.

Analysis of data

In this section, the comparison of countries based on annual time series analysis of five selected macroeconomic indicators in the period 1991–2016 will be presented. The following indicators were analyzed: current account balance, GDP per capita, trade-to-GDP ratio, unemployment rate, and the GDP deflator, using data from the World Bank database (see The World Bank 2018). The basic characteristics of the analyzed time series are presented in Table 1. In the first part of the table, the mean values of the time series are included – the averages for the first four indicators and the geometric mean for the GDP deflator. For this indicator, the mean is computed for the period 1996–2016 because of the extreme changes in Brazil before this period. In the second and the third parts of the table, the mean changes (average differences and mean growth rates) are presented. The GDP deflator contains changes by itself; therefore, the values are not presented. Due to negative values in the indicator of the current account balance, only the average first differences were computed. For three other indicators, the mean growth rates were calculated using the geometric mean.

Table 1. Characteristics of the analyzed time series for the period 1991–2016

Country	CAB	GDP	Trade/GDP	Unemp. rate	GDP defl.*
	Mean values				
Argentina	−3868.4	8211.0	28.605	11.242	1.1497
Brazil	−26110.5	6410.0	22.948	10.838	1.0833
Paraguay	74.0	2394.3	97.555	6.208	1.0757
Uruguay	−498.1	8444.4	46.632	10.008	1.0966
Average differences					
Argentina	−555.4	269.0	0.5005	0.120	×
Brazil	−883.2	187.3	0.3209	0.056	×
Paraguay	13.2	98.5	−0.3147	−0.040	×
Uruguay	33.8	465.7	0.1189	−0.048	×
Mean growth rates					
Argentina	×	1.0316	1.0262	1.0168	×
Brazil	×	1.0317	1.0159	1.0052	×
Paraguay	×	1.0377	0.9963	0.9932	×
Uruguay	×	1.0596	1.0030	0.9943	×

Notes: CAB – current account balance (in million USD), GDP – GDP per capita (in USD)
Trade/GDP – trade-to-GDP ratio (in %), Unemp. rate – unemployment rate (in %)
GDP defl. – GDP deflator (indices)
* geometric mean (for 1996–2016)
Source: own elaboration based on The World Bank (2018).

For the pairs of countries, the Euclidean distances based on year-on-year changes of the mentioned indicators were calculated. In Table 2, these distances are shown both for the differences and the percentage changes. We can see that based on the differences, Paraguay and Uruguay are the most similar (according to the smallest value for a certain

indicator) in the case of three indicators, and Brazil and Uruguay in the case of the trade-to-GDP indicator (in the case of the unemployment rate, the difference of the distances is only one hundredth between the two pairs of countries mentioned above). Based on the percentage changes, Paraguay and Uruguay are the most similar twice, and Brazil and Uruguay also twice (however, as already stated above, for the GDP deflator, only the period 1996–2016 was considered). The most dissimilar countries are Argentina and Brazil in the case of three indicator differences and two indicator percentage changes.

Table 2. Euclidean distances for pairs of countries based on values for the period 1991–2016

Pair of countries	CAB	GDP	Trade/GDP	Unemp. Rate	GDP defl.*
	Euclidean distances based on differences				
Argentina × Brazil	95,284	7,207	25.0	13.20	×
Argentina × Paraguay	25,693	5,932	43.9	13.10	×
Argentina × Uruguay	25,513	4,590	28.1	9.22	×
Brazil × Paraguay	93,315	4,832	48.3	9.10	×
Brazil × Uruguay	92,357	4,828	21.5	8.18	
Paraguay × Uruguay	2,894	4,448	46.5	8.17	
Euclidean distances based on percentage changes					
Argentina × Brazil	×	104.0	113.0	114.0	69.1
Argentina × Paraguay	×	69.7	93.6	202.0	77.5
Argentina × Uruguay	×	63.4	99.4	88.0	76.8
Brazil × Paraguay	×	69.2	74.9	165.0	19.6
Brazil × Uruguay		81.1	60.5	73.0	26.0
Paraguay × Uruguay		52.2	58.6	162.0	35.5

Notes: CAB – current account balance (in million USD), GDP – GDP per capita (in USD)
Trade/GDP – trade-to-GDP ratio (in %), Unemp. rate – unemployment rate (in %)
GDP defl. – GDP deflator (indices)
* for 1996–2016
Source: own elaboration based on The World Bank (2018).

Current account balance

Our first focus is on the balance of payments, namely on the current account balance, which is the sum of net exports of goods and services, net primary income, and net secondary income (see The World Bank 2018).

It is clear from Figure 1 that since 2009, Brazil has diverged significantly from other countries in the first indicator, mainly due to negative results in the balance of services and balance of primary income (Ministério da Fazenda 2017). The surpluses of the commercial balance have also gradually decreased since 2007, partly as a result of the world economic crisis (Cardoso Ferraz 2013). Despite certain improvements around 2012, the surpluses later turned into slight deficits (Gomes and Silva da Cruz 2017). This contrasts with the positive evolution registered after 2000, when the coun-

try benefited from a large amount of exports, especially of primary goods, and capital inflows, temporarily alleviating the balance of payments pressures on growth (Zanchetta Borghi 2017). Only in the second half of 2015 did Brazil manage to correct the negative state of its current account balance at least partially, mainly thanks to the improving surpluses of the commercial balances (Ministério da Fazenda 2017).

From Figure 1, it is also evident that the developments of the current account balance in the period 1991–2016 were the most similar for Paraguay and Uruguay. However, the average value for Paraguay is positive, in contrast with the negative average values of the other three countries (see Table 1). The relationships of the four countries according to the Euclidean distances, based on the differences of annual data of the studied indicator displayed in Table 2, correspond to similarities and dissimilarities of the graphically displayed time series in Figure 1. Brazil differs the most from the other countries (the highest Euclidean distances were obtained), and then Argentina differs from Paraguay and Uruguay. The latter two countries are the most similar also from the point of view of the average differences, which are positive, in contrast with the negative average differences between the other two countries.

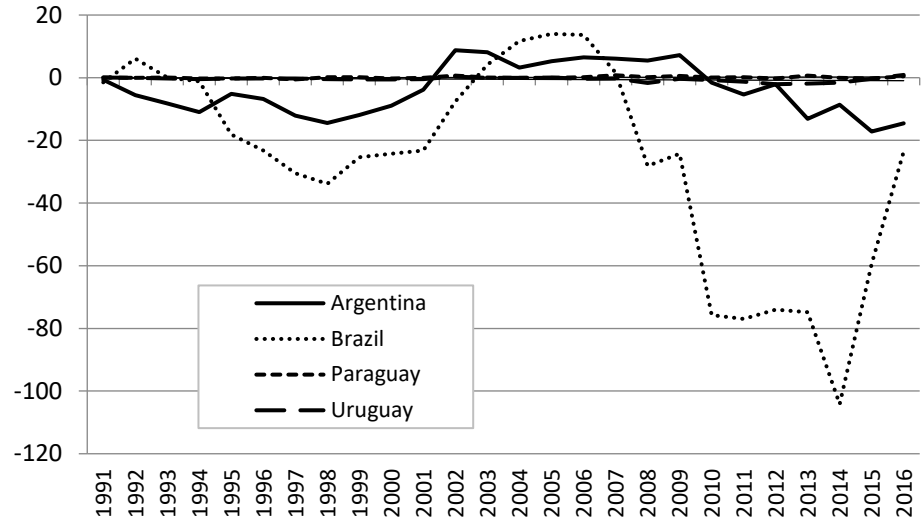

Figure 1. Development of current account balance for Mercosur countries in 1991–2016 (current prices in USD billions)
Source: own elaboration based on The World Bank (2018).

Using hierarchical cluster analysis for the creation of two clusters (groups), there are two possibilities for the number of countries in the clusters: two and two countries or one and three countries. In the case of the year-on-year differences of the current account balance, the result, when using all the three linkage methods, corresponded to the second possibility that was obtained – Paraguay, Uruguay, and Argentina were assigned to the first cluster, and Brazil was assigned to the second.

GDP per capita

GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for the depreciation of fabricated assets or for the depletion and degradation of natural resources (see The World Bank 2018). In this paper, we use GDP per capita expressed at current prices.

Comparing the last and the first values by the fixed base index, the greatest growth is in the case of Uruguay (by 325.4%), followed by Paraguay (by 152.41%), Brazil (by 118.06%), and Argentina (by 117.66%). Despite the second-highest relative growth registered by Paraguay, this country's values of GDP per capita remained the lowest among the Mercosur members for the whole period under review (see Figure 2). It can be seen that in the 1990s, the results indeed improved the least in Paraguay. On the other hand, after the arrival of the new millennium, Paraguay was not affected by the turbulence created by the South American economic crisis that culminated in 2002, in contrast to the other Mercosur member countries, i.e., Argentina, Brazil, and Uruguay, which were impacted. However, after the culmination of this crisis, previous developments began to recur when Paraguayan GDP per capita again grew the slowest. In recent times, Brazil registered perceivable drops in its GDP per capita; this is because of eight consecutive recessions in the country (Secretaria de Planejamento e Assuntos Econômicos 2017), the latest recession lasting longer than any other recession in the past thirty years.

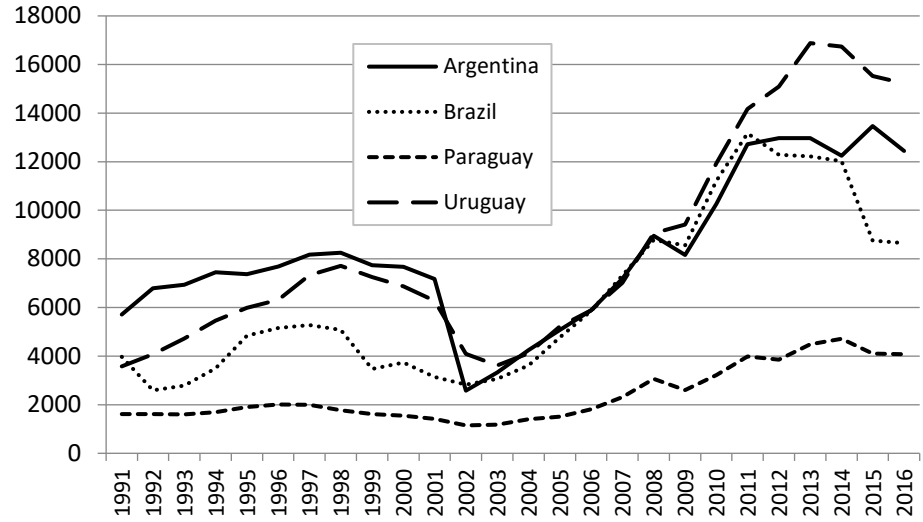

Figure 2. Development of GDP per capita for Mercosur countries in 1991–2016 (current prices in USD)
Source: own elaboration based on The World Bank (2018).

It emerges from Table 2 that according to the Euclidean distances based on the percentage changes of annual data of the indicator GDP per capita, the economic developments of Paraguay and Uruguay were the most similar in the monitored period 1991–2016. The economic developments of these two countries can also be characterized as the most similar based on the differences of values.

Using hierarchical cluster analysis for the creation of two clusters based on the year-on-year percentage changes, for all three linkage methods, we obtained Paraguay, Uruguay, and Argentina in the first cluster, and Brazil in the second, as in the case of the current account balance. The analyses based on the year-on-year differences differ depending on the applied linkage method. Paraguay and Uruguay are obviously in the same cluster because they are the most similar. The number of countries in the two clusters are always three and one. By the single linkage method, we obtain Brazil as the one-element cluster, and by the other two methods, Argentina is alone in the cluster. This difference of the results consists of the principle of the single linkage method in which the distance between two clusters is defined as the smallest distance between elements from different clusters.

Trade-to-GDP ratio

The trade-to-GDP ratio is the sum of exports and imports of goods and services measured as a share of gross domestic product (see The World Bank 2018). Comparing the last and first values by the fixed base index, the greatest growth is in the case of Argentina (by 90.98%); the second growth is for Brazil (by 48.36%), following by Uruguay (by 7.71%). In the case of Paraguay, the value of this indicator decreased (by 8.83%).

Figure 3 shows that the largest share of trade turnover on GDP is reported by Paraguay over the long-term (despite the overall relative decrease of the trade-to-GDP indicator, see above, and despite the negative average difference and decrease from the point of the mean growth rate of this indicator, see Table 1), while Brazil usually has the lowest share in the long run (despite having the second-highest relative growth of trade-to-GDP in the period under review, see Table 1).

From Table 2, it emerges that, according to the Euclidean distances based on the percentage changes of annual data of the indicator trade-to-GDP ratio, the economic developments of Paraguay and Uruguay were the most similar in the monitored period 1991–2016. The economic developments of Brazil and Uruguay can be characterized as the most similar based on the differences of values (expressed in percentage points).

Using hierarchical cluster analysis for the creation of two clusters based on the year-on-year percentage changes, we obtained Paraguay, Uruguay, and Argentina in the first cluster and Brazil in the second one by applying all three linkage methods. Based on the year-on-year differences, we obtained Brazil, Uruguay and Argentina in one cluster, and Paraguay in the second one (for all the three linkage methods).

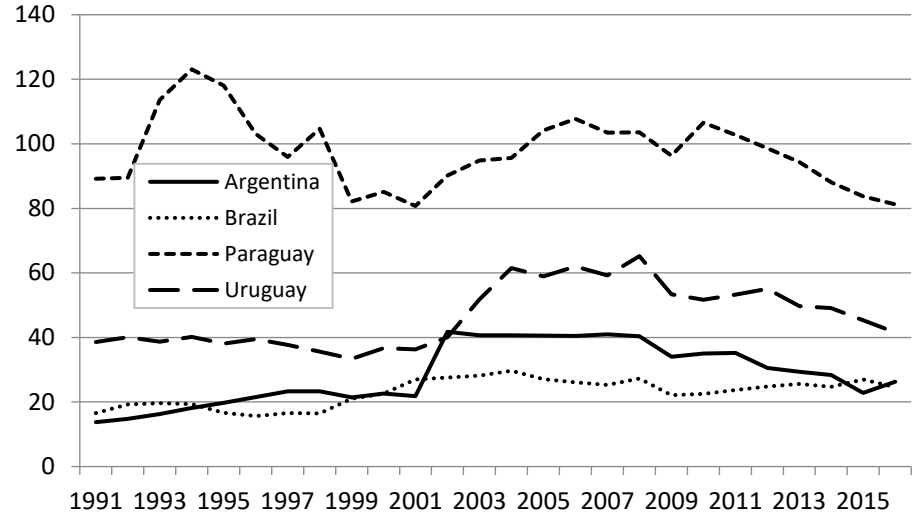

Figure 3. Development of trade-to-GDP ratio for Mercosur countries in 1991–2016 (in %)
Source: own elaboration based on The World Bank (2018).

Unemployment rate

The unemployment rate refers to the share of the labor force that is without work but available for and seeking employment (see The World Bank 2018). The data used are modeled estimates of the International Labor Organization and were again taken from the World Bank database, where they are listed under "Unemployment, total (% of the total labor force) (modelled ILO estimate)."

Comparing the last and the first values by the fixed base index, the greatest growth is in the case of Argentina (by 51.72%); the second growth is for Brazil (by 13.86%). In the case of Paraguay and Uruguay, the values of this indicator decreased – for Uruguay by 13.33% and for Paraguay by 15.62%. In Figure 4, we see that the development of the unemployment rates, thus defined in all four Mercosur countries surveyed during the monitored time series, was similar in some stages.

It is worth noting the especially adverse evolution of unemployment in Argentina in the first half of the 1990s. Argentina experienced a significant increase in rates of open unemployment after the late 1980s. Even after the arrival of the following decade, the figures kept worsening as a result of the economic crises and restructuring policies of the 1980s that negatively affected employment opportunities (Parrado and Cerrutti 2003). The Argentinian default crisis of 2001 explains only partly the repeated increase in the unemployment rate around 2000. According to Roudil (2006), it was the application of IMF's recipes in the 1990s and early 2000s that led to the decreases in the Argentinian GDP and, thus, they were also responsible for the high rates of unemployment and poverty that were registered around the turn of the millennium. Furthermore, Roudil (2006) states Uruguay

partially experienced a similar evolution as its neighbor did. Peluffo (2013), writing about Uruguay, found that in the first years after Mercosur's creation, there was a significant increase in the probability of unemployment. There are indications in Uruguay, Brazil, and Argentina that higher unemployment followed trade liberalization, which, to some extent, might be seen as a result of the improving productivity (Peluffo 2013).

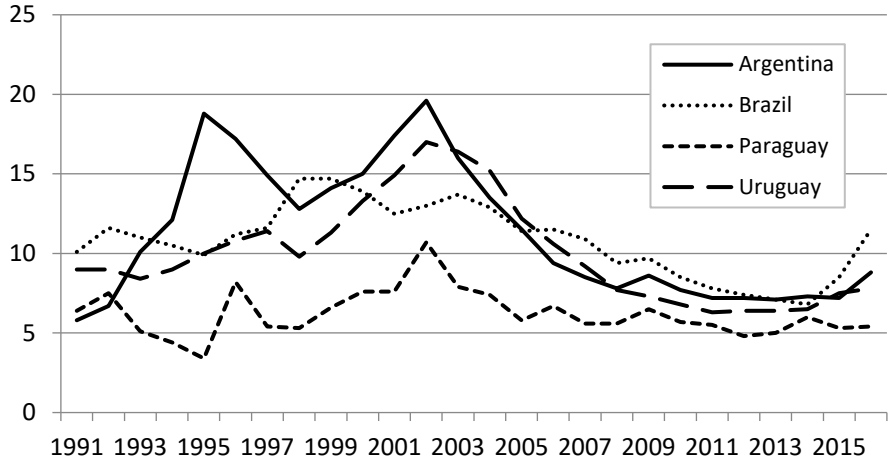

Figure 4. Development of unemployment rate for Mercosur countries in 1991–2016 (% of the total labor force)
Source: own elaboration based on The World Bank (2018).

From Table 2, it emerges that, according to the Euclidean distances based on the percentage changes of annual data of the unemployment rate indicator, the economic developments of Brazil and Uruguay were the most similar in the monitored period of 1991–2016. The economic developments of Paraguay and Uruguay can be characterized as the most similar based on the differences of values (expressed in percentage points). However, the distance for this pair of countries differs from the distance for the pair Brazil and Uruguay by only one hundredth.

Using hierarchical cluster analysis to create two clusters based on the year-on-year percentage changes, we obtained Brazil, Uruguay, and Argentina in the first cluster and Paraguay in the second one (for all the three linkage methods). Based on the year-on-year differences, Paraguay, Uruguay, and Brazil were assigned to one cluster and Argentina to the second (for all the three linkage methods).

GDP deflator

The last selected indicator is the *GDP deflator*, which is defined by inflation measured by the annual growth rate of the GDP implicit deflator displaying the rate of price change in the economy as a whole. The GDP implicit deflator is expressed by the ratio of GDP in current local currency to GDP in constant local currency, see (The World Bank 2018).

The GDP deflator reflects the year-on-year change in the aggregate price level. The graphically displayed development of the GDP deflator in the monitored countries is dominated by the Brazilian curve, which suffered from hyperinflation from the 1980s until 1994 (with the highest value of 2302.84 in 1994). For this reason, in Figure 5, only the development for the period 1996–2016 is shown because any larger fluctuations in the other three countries are almost imperceptible for the whole monitored period.

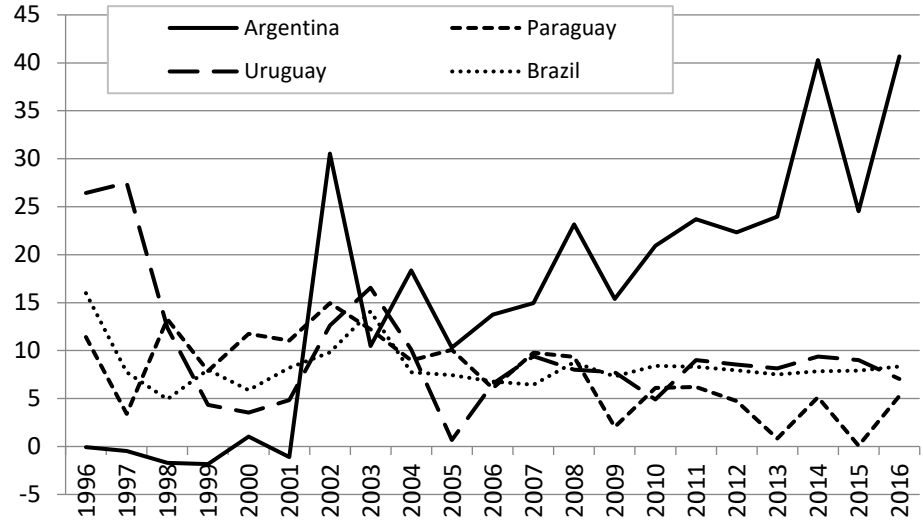

Figure 5. Development of GDP deflator for Mercosur countries in 1996–2016 (in %)
Source: own elaboration based on The World Bank (2018).

From Table 2, it emerges that, according to the Euclidean distances, in the case of the indicator GDP deflator, the economies of Brazil and Paraguay were the most similar in the monitored period. Using hierarchical cluster analysis for the creation of two clusters based on the GDP deflator values in the period 1996–2016, we obtained Brazil, Paraguay, and Uruguay in one cluster and Argentina in the second one (for all the three linkage methods).

Assessment

From the presented analyses, according to the year-on-year percentage changes of the individual indicators (in two cases), as well as the year-on-year differences (in three cases), the most similar countries were Paraguay and Uruguay. After further comparison, using clustering based on average distances computed for percentage changes of the GDP per capita, trade-to-GDP ratio, and unemployment rate indicators, it arises that, overall, the most similar economies in the whole monitored period were those of Brazil and Uruguay (see Figure 6, in which clustering using the complete linkage

method is presented). This result is caused by the greatest percentage changes in the unemployment rate indicator, according to which Brazil and Uruguay are the most similar. Using the other two linkage methods, the assignment of countries is different – Paraguay is single in the cluster.

Taking into account four indicators (with the exception of the current account balance), for the period 1996–2016, when using the average and complete linkage methods, based on the year-on-year percentage changes, we obtained similar results as those displayed in Figure 6.

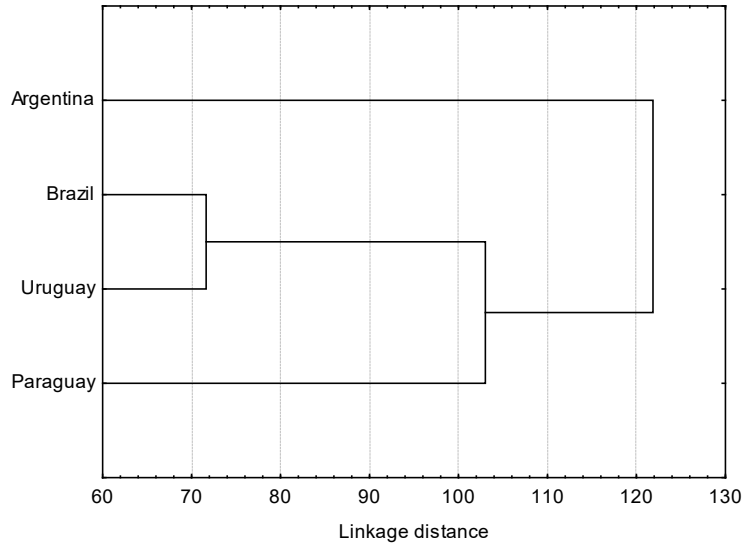

Figure 6. Dendrogram based on average distances of countries computed for percentage changes of the selected indicators in the period 1991–2016 (the complete linkage method)
Source: own elaboration based on The World Bank (2018).

Conclusion

At the beginning of this article, on the basis of quoted assertions, it was mentioned that the countries came together mainly because of the expected welfare effects and the potential distributional effects. Consequently, the question arises as to whether the countries came together (consciously or unconsciously) because of their common characteristics. This led us to the question of how the four founding Mercosur countries are economically similar.

Therefore, we decided to focus on evaluating and comparing the development of the four founding Mercosur countries from the point of view of certain macroeconomic indicators. The surveyed countries were assessed and compared on the basis of the

development of five selected macroeconomic indicators in the period 1991–2016. The relationships between the countries were quantified with the use of the Euclidean distance based on year-on-year changes – The relationships between the countries were quantified with the use of the Euclidean distance based on year-on-year changes – both the differences and the percentage changes were investigated (depending on the indicator type).

From the values of the indicators, we can see that according to the current account balance, Brazil has diverged significantly from the other countries since 2009. Only in 2015 did Brazil manage to correct the negative state of this indicator. Using the Euclidean distances based on differences, we can state that Brazil differs the most from the other countries, and then Argentina differs from Paraguay and Uruguay, which are the most similar.

Concerning GDP per capita, the lowest values were in Paraguay for the whole monitored period. According to the Euclidean distances based both on the percentage changes and on the differences of annual data, the economic developments of Paraguay and Uruguay were the most similar in the period 1991–2016. The second most similar pair of countries was represented by Uruguay and Argentina.

From the point of view of the trade-to-GDP ratio, the largest share of trade turnover on GDP is reported by Paraguay over the long-term. In the monitored period, the economic developments were the most similar for Paraguay and Uruguay from the point of view of the percentage changes, and for Brazil and Uruguay from the point of view of the differences of annual data.

The development of unemployment rates of all four Mercosur countries surveyed during the monitored time series was similar in some stages. There are small differences between countries when it comes to the Euclidean distances based on the year-on-year differences, but there are significant differences in the Euclidean distances based on the percentage changes. With respect to the percentage changes, Brazil and Uruguay were the most similar.

The graphically displayed development of the GDP deflator in the monitored countries is dominated by the Brazilian curve, which suffered from hyperinflation from the 1980s until 1994; since 1996, Argentina has had a different development (growth) than the other three countries. The GDP deflator includes the percentage changes itself. According to the Euclidean distances based on these changes, Brazil and Paraguay were the most similar in the period 1996–2016.

According to the average distances computed for percentage changes of the GDP per capita, trade-to-GDP ratio, and unemployment rate indicators, it arises that, overall, the most similar economies in the whole monitored period were those of Brazil and Uruguay. The same pair of most similar countries was obtained when four indicators were taken into account (with the exception of the current account balance), the analysed period being 1996–2016. The highest level of economic similarity between Brazil and Uruguay is caused by the greatest percentage changes in the unemployment rate indicator.

Our paper demonstrated the difficulty of finding a closer economic similarity among all the four founding Mercosur countries when using the above-mentioned economic indicators. This is because, on the one hand, it is possible to observe certain common long-term trends, but on the other hand, these trends have not always concerned all the four countries. Moreover, there have also been some individual short-term deviations.

Basnet and Pradhan (2017, p. 108) claimed that "if member countries share synchronous long-term trends and short-term cycles in their key macroeconomic variables, these countries may find it mutually beneficial to strengthen their integration process. Eventually, these countries could potentially even move toward a monetary union, the highest level of economic integration." Our analysis, which points to dissimilarities between short-term and long-term evolutions, could partially explain why, to date, the four founding Mercosur countries have not managed to proceed to a higher level of integration.

The inability to reach a higher level of integration may, however, be an obstacle for the efficient functioning of a regional grouping – an idea supported already in 2002 by Baer et al. (2002, p. 286), who indicated that "the lack of macroeconomic and exchange rate coordination policies in Mercosur has been an impediment to bringing the full potential trade benefits of a common market to the region." Nonetheless, Mercosur remains active, although its recent activities seem to be connected more to its exterior than to its interior. Recently, de Almeida (2018, p. 11) stated that "Mercosur remains what it was at the beginning: a project for a future single market." Regarding these two quotes, it is possible to state that they can be still considered valid. As the political environments in the four founding Mercosur member countries are not continuously in unison and supportive of the deeper integration of Mercosur, we can even claim that Mercosur is, to a certain extent, locked in a vicious circle.

Our research may lead to the recommendation that developing countries trying to integrate their economies should carefully assess not only their current political and economic state and development, but also their future prospects.

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Streszczenie

Mercosur – porównanie czterech krajów członkowskich na podstawie wybranych wskaźników ekonomicznych

Celem tego artykułu jest ukazanie w jaki sposób można dokonać porównań państw na podstawie wybranych wskaźników makroekonomicznych. Zbadano podobieństwo gospodarek czterech krajów założycielskich Mercosur (tj. Argentyny, Brazylii, Paragwaju i Urugwaju) w analizując zmiany pięciu wybranych wskaźników makroekonomicznych w latach 1991–2016. Przeanalizowano następujące wskaźniki: saldo obrotów bieżących, PKB per capita, wskaźnik handlu do PKB, stopę bezrobocia i deflator PKB, wykorzystując dane z bazy danych Banku Światowego. Za pomocą hierarchicznej analizy skupień zmian szeregów czasowych (różnic i wskaźników wzrostu) wykazano, że uzyskane skupienia poszczególnych krajów są różne. W związku z tym analizę skupień przeprowadzono na podstawie średnich odległości euklidesowych uzyskanych dla poszczególnych wskaźników dla dwóch różnych grup wskaźników.

Słowa kluczowe: Mercosur, analiza skupień, porównanie krajów, integracja regionalna

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CO_2 Emissions in the Visegrad Group Countries and the European Union Climate Policy

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Abstract

Climate change is one of the most pressing challenges of our time and several policies trying to mitigate this negative phenomenon have been implemented. The reduction of GHG emissions along with the improvement in energy efficiency and the increase in the share of energy consumption from renewable sources also constitute the European Union policy priority. In this context, the aim of this article is to explore factors that affect changes in CO_2 emissions in the four EU member states that form the Visegrad Group, during the period 1993–2016. The analysis was conducted using the Logarithmic Mean Divisia Index (LMDI) decomposition method and the Kaya identity, which enables the factors contributing most to the CO_2 emissions changes to be identified. It also allows the results to be discussed in relation to the European Union's climate policy.

According to the decomposition analysis results, energy intensity and economic growth measured in terms of GDP per capita were the main factors driving changes in CO_2 emissions across all countries considered. The emissions decrease resulted mainly from an improvement in energy efficiency and to a lesser extent from the change in the energy mix towards renewables.

Keywords: carbon dioxide emissions, LMDI decomposition analysis, the European Union climate policy, Visegrad Group countries

JEL: Q50, Q54

Introduction

Climate change due to global warming has become a vital subject of debate among environmental economists, environmentalists and politicians at national and international levels. Excessive greenhouse gas (GHG) emissions are claimed to be the major reason for this environmental problem, and carbon dioxide (CO_2) is considered the primary greenhouse gas contributing to global warming (Pao and Tsai 2011, p. 685; Tang and Tan 2015, p. 447). The potential consequences of global warming are so severe that the reduction of GHG emissions has become an important policy objective. Therefore, some initiatives have been put in place in order to regulate and reduce emissions. For example, in accordance with the 1997 Kyoto protocol, countries are required to reduce their emissions of six greenhouse gases: CO_2 (the most important one), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. The European Union ratified the Kyoto protocol in 2002, and it came into force in 2005. According to the European Union's Europe 2020 strategy, one of the priorities, alongside smart and inclusive growth, is sustainable growth defined as "promoting a more resource efficient, greener and more competitive economy" (*Europe 2020: A strategy…*, p. 10). As emphasised in the document, "these three priorities are mutually reinforcing" (*Europe 2020: A strategy…*, p. 10). This strategy established three, so-called "20–20–20" climate/energy targets: the reduction of greenhouse gas emissions by at least 20% compared to 1990 levels, increase the share of energy from renewable sources in final energy consumption to 20%, and increase energy efficiency by 20%. Furthermore, in 2014, the European Council adopted the 2030 climate and energy framework for the European Union. The 2030 targets are:[1] at least a 40% reduction in GHG emissions compared to 1990 levels, increase the share of renewable energy consumption to at least 32%, and an improvement of at least 32.5% in energy efficiency (*Conclusions on 2030…*, pp. 2, 5–6*; Directive (EU) 2018/2001…*, pp. 82, 105; *Directive (EU) 2018/2002…*, p. 216). It should be noted that establishing a binding target for GHG emissions cuts implements the EU's commitments under the 2015 Paris Agreement.

In this context, the purpose of this article is to explore factors that affect changes in CO_2 emissions in Visegrad Group (V4) countries using the decomposition method and to analyse the results in relation to the European Union's climate policy. The results are expected to demonstrate which factors contributed most to the CO_2 emissions changes between 1993 and 2016, both in the V4 as a whole and at country level.

The Visegrad Group is a regional cooperation comprising (after the dissolution of Czechoslovakia in 1993) four Central European countries – the Czech Republic, Slovakia, Hungary and Poland. The V4 was formed in February 1991 after the collapse of the Soviet bloc with the aim of coordinating the process of post-communist transformation; consequently, the collaboration focused on mutual support in the joint "return to Europe" (see Pakulski (ed.) 2016, p. 7). Since the beginning of the economic

1 The targets initially set for renewables and energy efficiency were revised upwards in 2018.

transition roughly two decades ago, the group has undergone tremendous adjustments. The transition from centrally planned to market-oriented systems was crowned with the accession of the V4 to the European Union. On 1 May 2004, all Visegrad countries became member states of the EU.

All the Visegrad countries experienced a reduction in CO_2 emissions during the 1993–2016 period (see Figure 1). Total emissions decreased by 20%; the biggest decline was reported for Hungary (26%) and the smallest for Poland (only 18%). Due to its size, among other things, Poland is the largest emitter of CO_2 in the analysed group of countries.

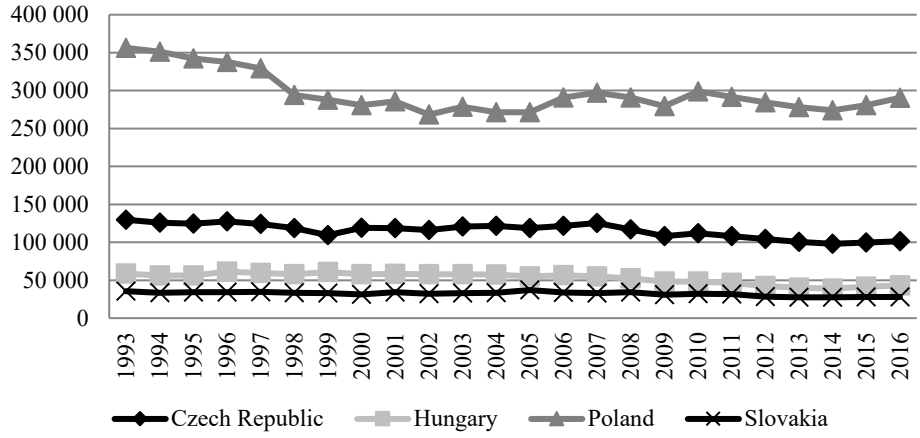

Figure 1. CO_2 emissions in 1000 tons in the Visegrad countries[2]
Source: Eurostat database.

Although many studies have applied decomposition analysis in order to better understand factors that affect changes in CO_2 emissions, there is only a limited number of studies for European countries, despite the fact that these economies are large polluters (González, Landajo and Presno 2014a, p. 12). Moreover, very few are relevant to the Visegrad countries. Several of these studies subsume the V4 countries as part of the European Union or other groups (e.g. OECD), and thus do not explore the role of various factors affecting the emissions at country level – see, for example, Chen et al. (2018), Madaleno and Moutinho (2017), and Moutinho, Moreira and Silva (2015). Some scholars have reported country analysis results alongside the ones for the whole group examined. Examples include González, Landajo and Presno (2014a, b) and Karmellos, Kopidou and Diakoulaki (2016). This paper addresses this gap in the literature and allows us not only to identify the factors that contribute most to changes in CO_2 emissions in the Visegrad countries, but also to assess differences across the economies analysed. Furthermore, it makes it possible to formulate some policy recommendation concerning actions aimed at emissions mitigation. The results of the

2 CO_2 emissions from the combustion of biomass fuels are not included.

research conducted in this paper cover the decomposition of CO_2 emissions for each of the countries concerned, as well as for the V4 countries overall. Additionally, the decomposition results on a year-by-year basis are reported.

Studies explaining the changes in emissions with the use of decomposition analysis differ in terms of the data and methodology (and thus factors) utilised. Many of them employ some form of the Kaya identity, e.g. Fatima et al. (2019), Köne and Büke (2019), Chapman, Fujii and Managi (2018), Chen et al. (2018), Engo (2018), Feng, Huang and Wang (2018), Madaleno and Moutinho (2017), Lima et al. (2016), Mavromatidis et al. (2016), Štreimikienė and Balezentis (2016), Moutinho, Moreira and Silva (2015), Remuzgo and Sarabia (2015), Li, Ou and Chen (2014), O'Mahony (2013), and Kumbaroğlu (2011). In its initial version, the Kaya equation decomposes emissions into four factors: population, GDP per capita, energy per unit of GDP (energy intensity of the economy), and emissions per unit of energy (emissions intensity of energy) (Madaleno and Moutinho 2017, p. 10240; Mavromatidis et al. 2016, p. 344; Shahiduzzaman and Layton 2015, p. 28). Moreover, the Kaya identity is a concrete form of the more general IPAT (I=PAT) framework (Wang and Li 2016, p. 955), which employs three factors to explain emissions: population (P), affluence (A, GDP per capita), and technology (T, emissions per unit of GDP) (Remuzgo and Sarabia 2015, p. 15; Shahiduzzaman and Layton 2015, p. 28; Calbick and Gunton 2014, p. 896). Modifications to the formulae have enabled further investigation of various other driving factors of changes in emissions. For example, Moutinho, Moreira and Silva (2015) analyse six effects: the carbon intensity, the energy mix, the energy intensity, the average renewable capacity productivity, the change in the capacity of renewable energy per capita, and the change in population effect. Additionally, Kumbaroğlu (2011) uses the extended version of the Kaya identity in order to account for effects at the subsectoral level, i.e. the output effect, the carbon intensity of energy use effect, the energy intensity of production effect, and the subsectoral composition effect. Following Moutinho, Moreira and Silva (2015, p. 1488), the most common components analysed are the output, the energy mix, the energy intensity, and the structural effect.

This analysis also utilises the Kaya identity in order to identify which factors are crucial in the reduction of CO_2 emissions. Using this formula enables CO_2 emissions changes to be assessed in relation to changes in energy intensity, which is broadly the inverse of energy efficiency (Shahiduzzaman and Layton 2015, p. 29), and in the carbon intensity of energy use (the emission factor), which reflects the share of renewables in final energy consumption (Štreimikienė and Balezentis 2016, p. 1108). Thus, the analysis facilitates the investigation of the CO_2 emissions drivers which are referenced in the European Union's climate policy. As this issue is underexplored in the literature, especially in the case of the Visegrad Group countries, an examination of the abovementioned factors' impact on CO_2 emissions is evidently important. The decomposition analysis covering the V4 countries between 1993 and 2016 is conducted with the use of the Logarithmic Mean Divisia Index (LMDI) decomposition method.

The structure of the article is as follows. The next section introduces the LMDI decomposition method and describes the data used in the analysis, while the subsequent section presents and discusses the results. The last section concludes.

Methodology and data

In order to explore factors that affected changes in CO_2 emissions in Visegrad Group countries during the 1993–2016 period, this study uses the LMDI decomposition method proposed by Ang, Zhang and Choi (1998). This approach was selected as the decomposition technique for the analysis due to the many advantages it provides; it is easy to apply, can handle zero values and the decomposition formulae hold the same, irrespective of the number of factors considered. The approach gives perfect decomposition, i.e. it does not leave a residual term, which would complicate the interpretation of the results (Ang 2004, p. 1135; Ang 2015, p. 237). It is also consistent in aggregation, which means that effects estimates at the sub-group level can be aggregated to give the corresponding effect at the group level (Ang 2005, p. 870). The LMDI decomposition can be conducted either additively or multiplicatively, and the choice between the two is arbitrary (Ang 2004, p. 1134). The additive and multiplicative results are linked and can be easily converted to each other (Ang 2015, p. 237). This paper uses the additive LMDI approach, which is recommended when an aggregate is a quantity indicator[3] (Ang 2015, p. 237). In such an analysis, the difference change of an aggregate indicator is decomposed (Ang 2004, p. 1134; Ang 2015, p. 234). According to Ang (2015, p. 236) and Ang and Goh (2019, p. 75), the additive decomposition analysis is more popular among researchers in comparison to the multiplicative one, and its popularity has increased over time.

This study also employs the abovementioned Kaya identity to assess the drivers of energy-related CO_2 emissions. Therefore, the decomposition for k countries in year t is given by:

$$\begin{aligned} CO2 &= \sum_{i=1}^{k} CO2_i = \sum_{i=1}^{k} \frac{CO2_i}{fec_i} \times \frac{fec_i}{gdp_i} \times \frac{gdp_i}{pop_i} \times pop_i = \\ &= \sum_{i=1}^{k} e\_fct_i \times e\_int_i \times gdp\_pc_i \times pop_i \end{aligned} \tag{1}$$

where

$CO2_i$ – CO_2 emissions in 1000 tons in country i,[4]

fec_i – final energy consumption in million tonnes of oil equivalent in country i,

gdp_i – GDP in constant 2010 US$ in country i,

3 Multiplicative decomposition is recommended when an aggregate is an intensity indicator (Ang 2015, p. 237).

4 See footnote 2.

pop_i – total population in country *i*,
e_fct_i – carbon intensity of energy use (the emission factor) in country *i* calculated as $CO2_i$ and fec_i ratio,
e_int_i – energy intensity in country *i* calculated as fec_i and gdp_i ratio,
gdp_pc_i – GDP per capita in country *i* calculated as gdp_i and pop_i ratio,
k – the number of countries.

In the presented identity, the changes in CO_2 emissions are decomposed into four factors: (i) the carbon intensity/the emission factor, (ii) the energy intensity, (iii) GDP per capita, and (iv) the population size. The first component considered – the carbon intensity of energy use, also referred to as the emission factor (*e_fct*) – shows CO_2 emissions per unit of final energy consumed. It represents the quality of energy mix consumed in the economy (Freitas and Kaneko 2011, p. 1499; Cansino, Sánchez-Braza and Rodríguez-Arévalo 2015, p. 750) and thus reflects the share of renewables in final energy consumption (Štreimikienė and Balezentis 2016, p. 1109). Changing the energy mix towards renewables contributes to the mitigation of CO_2 emissions. The energy intensity (*e_int*) represents the energy consumption per unit of GDP; it is broadly the inverse of energy efficiency (Shahiduzzaman and Layton 2015, p. 29) and is often utilised as a measure of energy efficiency (see González, Landajo and Presno 2014b, p. 741; Cansino, Sánchez-Braza and Rodríguez-Arévalo 2015, p. 750). This paper follows this practice. The decrease in energy intensity is associated with an increase in energy efficiency and thus leads to a decline in CO_2 emissions. The next factor – GDP per capita (*gdp_pc*) – captures the affluence effect originally considered in the IPAT equation, i.e. it represents the contribution to changes in CO_2 emissions resulting from changes in affluence (wealth) (Shahiduzzaman and Layton 2015, p. 30). Finally, an increase in population size (*pop*) is expected to produce increased energy consumption, resulting in higher CO_2 emissions (see Chen et al. 2018, p. 939).

The analysis covers the Visegrad Group countries (the Czech Republic, Hungary, Poland and Slovakia) from 1993–2016. The data on GDP and population are sourced from the World Development Indicators (WDI) database of the World Bank. CO_2 emissions and final energy consumption series have been obtained from the Eurostat database.

According to the additive LMDI method, changes in CO_2 emissions between a base year 0 and year T can be expressed as:

$$\Delta CO2 = CO2^T - CO2^0 = \Delta e\_fct + \Delta e\_int + \Delta gdp\_pc + \Delta pop \tag{2}$$

The components of change in Eq. 2 are given by Eq. 3–6:

$$\Delta e\_fct = \sum_{i=1}^{k} L\left(CO2_i^T, CO2_i^0\right) \times \ln\left(\frac{e\_fct_i^T}{e\_fct_i^0}\right) \tag{3}$$

$$\Delta e\_int = \sum_{i=1}^{k} L\left(CO2_i^T, CO2_i^0\right) \times \ln\left(\frac{e\_int_i^T}{e\_int_i^0}\right) \tag{4}$$

$$\Delta gdp\_pc = \sum_{i=1}^{k} L\left(CO2_i^T, CO2_i^0\right) \times \ln\left(\frac{gdp\_pc_i^T}{gdp\_pc_i^0}\right) \tag{5}$$

$$\Delta pop = \sum_{i=1}^{k} L\left(CO2_i^T, CO2_i^0\right) \times \ln\left(\frac{pop_i^T}{pop_i^0}\right) \tag{6}$$

where the logarithmic mean is defined as:

$$L\left(CO2_i^T, CO2_i^0\right) = \frac{CO2_i^T - CO2_i^0}{\ln CO2_i^T - \ln CO2_i^0} \tag{7}$$

Research results

The additive decomposition results of CO_2 emissions in the Visegrad Group countries for the sub-periods 1993–2004, 2004–2008, 2008–2009 and 2009–2016 are shown in Table 1 below. The analysis comprises countries which have undergone a transition process from centrally planned economies to market economies following the collapse of the Soviet bloc. Therefore, the first sub-period (1993–2004) covers the transformation period until joining the European Union in 2004. The second period applies to the years 2004–2008. Following Vehmas, Kaivo-oja and Luukkanen (2018) and Wang, Ang and Su (2017), the period of economic crisis covers the years 2008–2009. Due to data availability, the post-crisis period (2009–2016) is limited to the year 2016. Table A1 in the Appendix reports the results between 1993 and 2016 on a year-by-year basis.

Table 1. Decomposition results of changes in CO_2 emissions in the Visegrad countries – sub-periods

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–2004	–65,251.1	–260,163.9	234,238.9	–5,010.8	–96,186.9
2004–2008	–7,382.7	–79,902.7	96,402.6	1,425.6	10,542.8
2008–2009	–15,744.6	–9,212.6	–3,641.9	800.0	–27,799.0
2009–2016	–26,957.5	–63,223.2	87,471.6	–855.1	–3,564.2
1993–2016	–119,944.4	–423,462.4	430,035.4	–3,635.9	–117,007.3

Source: own calculations based on Eurostat and World Development Indicators data.

Globally, the Visegrad countries experienced a 20% drop in CO_2 emissions between 1993 and 2016, which corresponds to an emissions reduction of 117,007.3 kt. Energy intensity and GDP per capita were the main factors driving the abovementioned change. The increase in CO_2 emissions caused by the growth of GDP per cap-

ita (430,035.4 kt) was largely compensated for by the emissions fall resulting from the decrease in energy intensity (423,462.4 kt), which is associated with an increase in energy efficiency. The carbon intensity decline reflecting the higher share of renewables in final energy consumption also made a significant contribution to the reduction of CO_2 emissions. The impact of population size changes was negligible. A similar pattern was detected for the 2009–2016 sub-period. Between 1993 and 2004, the decrease in CO_2 emissions owing to energy efficiency improvement individually outweighed the emissions increase arising from GDP per capita growth. During the economic crisis (2008–2009), the GDP per capita fall in all V4 countries (except Poland) also contributed, next to the change in energy intensity and carbon intensity, to the drop in CO_2 emissions. In contrast to the other analysed sub-periods, in the years 2004–2008 CO_2 emissions rose. The changes in energy intensity and carbon intensity were not able to offset the negative impact, from a CO_2 mitigation perspective, of GDP per capita increase.

The decomposition analysis conducted for the whole Visegrad Group revealed that energy intensity and economic growth measured in terms of GDP per capita played the key role in the CO_2 emissions changes. The emissions decline was predominantly caused by the energy efficiency improvement and, to a much lesser extent, the change of the energy mix towards renewables. These two emissions-reducing factors coincide with the European Union's climate/energy targets, but the impact of the first one is much more significant. This is an important outcome from the EU climate policy perspective.

Turning to the country-level analysis, it should be noted that, although CO_2 emissions decreased considerably in the Visegrad Group as a whole, the scale of the changes varied substantially among the countries considered. In the years 1993–2016, emissions declined by 26% in Hungary, 22% in the Czech Republic, 21% in Slovakia, and only 18% in Poland, which corresponds to drops of 15,456.9 kt, 28,309.7 kt, 7,429.8 kt, and 65,810.9 kt, respectively. Although the percentage reduction is the lowest in Poland, it is the highest in kilotonnes. This is related to the fact that Poland is the largest country in the V4 and the largest emitter.

Tables 2–5 present the decomposition results separately for each of the countries considered. The year-by-year results are presented in Tables A2–A5 of the Appendix.

Table 2. Decomposition results of changes in CO_2 emissions in the Czech Republic – sub-periods

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–2004	–1,332.3	–45,218.0	39,979.7	–1,623.9	–8,194.6
2004–2008	–1,755.5	–27,819.5	22936.3	2,172.8	–4,465.8
2008–2009	–4,410.1	1,142.5	–6,181.7	641.3	–8,807.9
2009–2016	–5,581.7	–15,020.0	12,539.7	1,220.6	–6,841.4
1993–2016	–13,540.5	–83,534.8	66,163.5	2,602.0	–28,309.7

Source: see Table 1.

Table 3. Decomposition results of changes in CO_2 emissions in Hungary – sub-periods

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–2004	–5,593.1	–16,385.4	22,250.0	–1,418.0	–1,146.5
2004–2008	–4,437.8	–5,755.8	5,504.7	–375.2	–5,064.2
2008–2009	–3,351.3	2,553.1	–3,347.9	–77.7	–4,223.9
2009–2016	–7,104.2	–3,558.2	6,597.8	–957.8	–5,022.4
1993–2016	–20,176.3	–20,918.3	28,354.3	–2,716.7	–15,456.9

Source: see Table 1.

Table 4. Decomposition results of changes in CO_2 emissions in Poland – sub-periods

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–2004	–56,657.8	–181,961.7	156,023.6	–2,272.3	–84,868.1
2004–2008	–624.6	–37,232.7	57,711.2	–415.8	19,438.1
2008–2009	–7,100.2	–12,073.9	7,737.8	193.2	–11,243.1
2009–2016	–12,268.6	–38,037.9	62,527.8	–1,359.1	10,862.2
1993–2016	–81,146.2	–287,339.2	306,817.2	–4,142.8	–65,810.9

Source: see Table 1.

Table 5. Decomposition results of changes in CO_2 emissions in Slovakia – sub-periods

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–2004	–1,668.0	–16,598.8	15,985.6	303.4	–1,977.8
2004–2008	–564.9	–9,094.6	10,250.4	43.8	634.7
2008–2009	–882.9	–834.3	–1850.1	43.2	–3,524.1
2009–2016	–2,002.9	–6,607.0	5806.3	241.1	–2,562.6
1993–2016	–5,081.5	–31,670.1	28,700.3	621.6	–7,429.8

Source: see Table 1.

The general pattern of the results obtained for the Visegrad Group as a whole also holds at the country-level analysis. In the years 1993–2016, the main drivers of CO_2 emissions changes across all analysed countries were energy intensity and economic growth expressed in terms of GDP per capita. The decrease in CO_2 emissions owing to the decline in energy intensity (and thus energy efficiency improvement) and, to a much lesser extent, to the drop in carbon intensity exceeded the increase in emissions due to the growth of GDP per capita. The impact of population size changes was negligible.

The decomposition results comprising the years 2004–2008 show that Hungary and the Czech Republic reduced CO_2 emissions during this period, while Poland and Slovakia recorded the increase in CO_2 emissions. In the last two countries, the negative effect, from a CO_2 mitigation perspective, of GDP per capita growth outweighed the positive impact of energy intensity and carbon intensity decrease.

Another sub-period requiring in-depth discussion is the economic crisis (2008–2009). Among the V4 countries, only Poland experienced a GDP per capita

growth during this period. It had consequences with regards to CO_2 emissions changes. In the Czech Republic, Hungary and Slovakia, the decline of GDP per capita led to a decrease in CO_2 emissions, while in Poland it contributed to an increase in emissions. In turn, in the Czech Republic and Hungary, in contrast to the other sub-periods, energy intensity increased, thus inducing CO_2 emissions growth. Overall, CO_2 emissions declined between 2008 and 2009 in all Visegrad Group states as the positive impacts of some factors on emissions reduction outweighed the negative ones.

The energy intensity factor, showing changes in energy efficiency, contributed most to the CO_2 emissions decline in all V4 states during the analysed period (1993–2016), but its impact differed among countries. In relation to the second emission-reducing factor – carbon intensity, which reflects the share of renewables in final energy consumption – energy intensity played the most important role in Slovakia and the Czech Republic, where it led to a decrease in emissions approximately six times greater compared to the second factor. On the other hand, in Hungary, its impact was only slightly bigger than that of carbon intensity. It is, however, important to mention that between 1993 and 2015, the share of renewable energy consumption in total final energy consumption increased the most in Hungary (from 5.0 to 15.6%) and the least in Poland (from 6.1 to 11.9%).[5]

Conclusion

Climate change and its possible consequences for mankind have made greenhouse gas emissions reduction a pressing issue. The European Union policy addresses this problem and treats climate change mitigation as an integral element of sustainable development policy. In this context, the purpose of this article was to explore factors that affect changes in CO_2 emissions in four member states of the EU (the Visegrad Group countries) during the period 1993–2016. The analysis conducted with the use of the LMDI decomposition method was expected to indicate the most influencing factors and to enable a discussion of the results in relation to the European Union's climate policy.

The reduction of greenhouse gas emissions, the improvement in energy efficiency and the increase in the share of energy from renewable sources in final energy consumption constitute a priority of the EU policy. During the research period, emissions of the main GHG that contribute to global warming – CO_2 – declined in all V4 countries. The largest decrease was recorded for Hungary (26%) and the smallest for Poland (18%), while as a whole the Visegrad Group reduced emissions by 20%. The decomposition results show that in terms of CO_2 emissions mitigation, the energy intensity factor was more influential than the carbon intensity factor, both for the Visegrad Group countries overall and for individual economies. This means that an increase in energy efficiency contributed more to the CO_2 decrease than the change of energy mix towards renewables. Taking this into account, more emphasis should be put

5 Source: World Development Indicators database (EG.FEC.RNEW.ZS series). The year 2015 is the last year for which data is available.

on improving the quality of the energy mix consumed in the economy as this factor may be an important means of bringing about a reduction in CO_2 emissions. This recommendation is of particular importance for Poland, as among the V4 countries it reported the least progress in this area and the smallest percentage drop in CO_2 emissions, while simultaneously being the largest emitter. The share of renewable energy consumption in the total final energy consumption increased the most in Hungary; however, the share in 2015 did not exceed 16% in any of the Visegrad countries.[6]

In view of international pressure to reduce CO_2 emissions and European Union climate policy targets, further efforts to improve energy efficiency, and especially to increase the share of energy consumption from renewable sources, can be recommended in order to overcome the influence of GDP per capita growth, which has been revealed in the analysis to be one of the main drivers of changes in CO_2 emissions.

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6 Source: World Development Indicators database (EG.FEC.RNEW.ZS series).

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Appendix A

Results of changes in CO_2 emissions by year for each of the Visegrad countries, period 1993–2016

Table A1. Decomposition results of changes in CO_2 emissions in the Visegrad countries, period 1993–2016

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–1994	6,617.0	–45,950.1	24,792.2	849.9	–13,691.0
1994–1995	–15,583.9	–27,219.4	33,186.0	414.8	–9,202.5
1995–1996	–20,173.4	–3,275.2	27,375.6	83.7	4,010.7
1996–1997	–1,783.0	–35,914.5	24,116.9	24.4	–13,556.2
1997–1998	–13,336.4	–47,742.4	17,513.7	–94.9	–43,660.0
1998–1999	267.8	–29,511.2	16,892.7	–274.6	–12,625.4
1999–2000	10,624.5	–32,945.6	23,775.9	–3,488.3	–2,033.5
2000–2001	–827.3	–1,983.0	10,894.5	–717.8	7,366.3
2001–2002	–17,165.7	–16,754.8	12,084.6	–531.5	–22,367.5
2002–2003	1,164.6	–2,594.8	18,075.9	–405.6	16,240.1
2003–2004	–15,525.5	–15,242.1	24,358.1	–258.5	–6,668.0
2004–2005	–6,836.0	–16,620.7	21,695.1	–61.6	–1,823.2
2005–2006	7,934.8	–16,526.2	29,740.1	61.5	21,210.3
2006–2007	11,872.9	–34,830.0	29,912.7	484.3	7,439.9
2007–2008	–20,499.9	–13,522.6	16,757.8	980.5	–16,284.2
2008–2009	–15,744.6	–9,212.6	–3,641.9	800.0	–27,799.0
2009–2010	–2,089.2	11,841.0	15,175.1	–584.3	24,342.5
2010–2011	–593.1	–30,515.0	17,760.3	293.0	–13,054.8
2011–2012	–12,720.2	–9,304.3	3,527.5	–30.8	–18,527.7
2012–2013	–8,510.2	–9,293.0	4,881.8	–219.6	–13,140.9
2013–2014	5,368.3	–27,038.3	14,239.1	–182.4	–7,613.3
2014–2015	1,982.5	–9,176.9	17,992.5	–59.6	10,738.4
2015–2016	–10,266.4	10,935.1	13,041.1	–18.0	13,691.8
1993–2016	–119,944.4	–423,462.4	430,035.4	–3,635.9	–117,007.3

Source: own calculations based on Eurostat and World Development Indicators data.

Table A2. Decomposition results of changes in CO_2 emissions in the Czech Republic, period 1993–2016

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–1994	3,536.4	–11,122.8	3,616.6	46.1	–3,923.7
1994–1995	189.8	–8,973.0	7,630.3	–76.7	–1,229.7
1995–1996	1,244.4	–3,312.3	5,362.6	–146.8	3,147.9
1996–1997	–2,162.0	–671.6	–615.2	–135.7	–3,584.5
1997–1998	–794.4	–4,286.0	–284.6	–115.0	–5,479.9
1998–1999	–3,604.1	–7,139.0	1,738.3	–116.5	–9,121.2
1999–2000	5,426.5	–601.7	5,093.2	–320.3	9,597.7
2000–2001	–2,328.2	–1,528.9	3,855.0	–446.6	–448.7
2001–2002	–378.6	–4,245.1	2,148.7	–226.3	–2,701.3
2002–2003	–575.2	1,360.3	4,225.4	–33.9	4,976.7
2003–2004	–1,719.1	–3,514.6	5,769.0	36.9	572.2
2004–2005	–1,138.7	–9,407.2	7,429.6	166.0	–2,950.3
2005–2006	1,153.7	–6,144.4	7,631.1	325.0	2,965.4
2006–2007	6,382.2	–9,068.8	6,012.9	720.8	4,047.1
2007–2008	–8,064.3	–3,672.9	2,203.6	1,005.6	–8,528.0
2008–2009	–4,410.1	1,142.5	–6,181.7	641.3	–8,807.9
2009–2010	2,291.7	–1,165.9	2,152.5	320.5	3,598.8
2010–2011	–197.4	–5,456.4	1,710.3	227.3	–3,716.2
2011–2012	–3,512.1	419.9	–1,000.7	148.5	–3,944.4
2012–2013	–2,968.7	–342.4	–529.6	33.9	–3,806.7
2013–2014	585.6	–5,556.6	2,552.8	104.4	–2,313.7
2014–2015	–876.1	–2,631.6	4,918.8	194.3	1,605.4
2015–2016	–726.2	–111.7	2,380.3	193.0	1,735.4
1993–2016	–13,540.5	–83,534.8	66,163.5	2,602.0	–28,309.7

Source: see Table A1.

Table A3. Decomposition results of changes in CO_2 emissions in Hungary, period 1993–2016

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–1994	–2,114.5	–2,016.3	1,742.2	–78.4	–2,467.0
1994–1995	22.7	–829.0	907.1	–78.1	22.7
1995–1996	3,148.6	2,125.8	109.1	–100.8	5,282.7
1996–1997	1,210.4	–4,938.6	2,109.2	–121.9	–1,740.8
1997–1998	–2,062.7	–2,071.9	2,574.8	–136.7	–1,696.5
1998–1999	1,604.7	–765.1	2,027.1	–167.9	2,698.9
1999–2000	–1,471.5	–3,541.6	2,600.3	–154.1	–2,566.9
2000–2001	–2,773.8	627.7	2,322.0	–133.2	42.6
2001–2002	–723.5	–2,222.9	2,729.5	–164.9	–381.8
2002–2003	–2,069.1	149.7	2,350.4	–165.7	265.3
2003–2004	–278.8	–3,143.7	2,944.6	–127.7	–605.6
2004–2005	–5,725.7	993.7	2,525.8	–111.8	–2,318.0
2005–2006	2,217.6	–2,711.7	2,198.0	–87.0	1,616.9
2006–2007	1,768.8	–3,665.6	328.8	–86.5	–1,654.5
2007–2008	–2,708.6	–457.1	551.0	–94.0	–2,708.6
2008–2009	–3,351.3	2,553.1	–3,347.9	–77.7	–4,223.9
2009–2010	–865.2	509.2	435.6	–108.7	–29.1
2010–2011	–1,677.3	–509.1	914.7	–134.2	–1,405.9
2011–2012	–1,705.5	–1,879.1	–507.3	–229.6	–4,321.4
2012–2013	–2,247.1	–607.6	971.1	–113.8	–1,997.4
2013–2014	–385.5	–2,609.3	1,748.9	–106.8	–1,352.7
2014–2015	–605.7	1,537.6	1,423.5	–95.4	2,260.0
2015–2016	630.1	271.4	1,047.0	–124.4	1,824.1
1993–2016	–20,176.3	–20,918.3	28,354.3	–2,716.7	–15,456.9

Source: see Table A1.

Table A4. Decomposition results of changes in CO_2 emissions in Poland, period 1993–2016

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–1994	6,654.9	–30,112.5	17,492.5	746.2	–5,218.9
1994–1995	–16,695.8	–15,491.4	22,821.9	470.4	–8,894.9
1995–1996	–23,299.2	–1,069.7	19,730.9	258.6	–4,379.4
1996–1997	–1,376.5	–27,971.8	20,657.4	218.3	–8,472.7
1997–1998	–9,857.1	–39,442.9	13,933.7	111.3	–35,255.1
1998–1999	1,851.0	–21,071.0	13,229.4	–24.2	–6,014.7
1999–2000	8,860.7	–28,709.1	15,651.6	–2,970.3	–7,167.1
2000–2001	2,844.4	–1,468.2	3,591.7	–78.2	4,889.8
2001–2002	–13,971.4	–9,104.8	5,724.7	–128.3	–17,479.8
2002–2003	1,939.4	–1,232.7	9,753.6	–184.5	10,275.8
2003–2004	–14,342.9	–6,577.9	13,930.4	–160.9	–7,151.2
2004–2005	–1,914.4	–7,456.7	9,437.7	–119.3	–52.6
2005–2006	7,024.5	–4,171.5	17,031.6	–178.1	19,706.5
2006–2007	4,334.0	–18,081.3	20,157.3	–159.7	6,250.3
2007–2008	–10,260.2	–8,443.6	12,197.7	40.1	–6,466.0
2008–2009	–7,100.2	–12,073.9	7,737.8	193.2	–11,243.1
2009–2010	–2,574.1	11,480.6	11,067.7	–825.5	19,148.7
2010–2011	36.7	–21,657.3	14,289.0	158.7	–7,172.8
2011–2012	–5,845.9	–5,931.4	4,593.8	–0.7	–7,184.1
2012–2013	–1,458.2	–8,731.8	4,056.9	–169.7	–6,302.9
2013–2014	3,535.7	–16,528.3	9,219.2	–206.6	–3,979.9
2014–2015	3,414.7	–7,314.1	10,632.8	–184.8	6,548.6
2015–2016	–9,679.5	10,871.4	8,735.6	–122.7	9,804.7
1993–2016	–81,146.2	–287,339.2	306,817.2	–4,142.8	–65,810.9

Source: see Table A1.

Table A5. Decomposition results of changes in CO_2 emissions in Slovakia, period 1993–2016

Period	Δe_fct	Δe_int	Δgdp_pc	Δpop	ΔCO_2
1993–1994	–1,459.8	–2,698.4	1,940.9	135.9	–2,081.4
1994–1995	899.5	–1,926.0	1,826.7	99.2	899.5
1995–1996	–1,267.3	–1,018.9	2,173.0	72.7	–40.5
1996–1997	545.2	–2,332.5	1,965.4	63.6	241.7
1997–1998	–622.3	–1,941.6	1,289.8	45.5	–1,228.5
1998–1999	416.1	–536.2	–102.2	33.9	–188.4
1999–2000	–2,191.2	–93.2	430.8	–43.6	–1,897.2
2000–2001	1,430.3	386.4	1,125.8	–59.8	2,882.7
2001–2002	–2,092.2	–1,182.0	1,481.7	–12.1	–1,804.6
2002–2003	1,869.5	–2,872.2	1,746.6	–21.5	722.3
2003–2004	815.3	–2,006.0	1,714.0	–6.8	516.6
2004–2005	1,942.8	–750.5	2,301.9	3.5	3,497.6
2005–2006	–2,460.9	–3,498.6	2,879.4	1.6	–3,078.4
2006–2007	–612.0	–4,014.4	3,413.8	9.7	–1,202.9
2007–2008	533.2	–949.0	1,805.5	28.7	1,418.4
2008–2009	–882.9	–834.3	–1,850.1	43.2	–3,524.1
2009–2010	–941.7	1,017.1	1,519.3	29.3	1,624.0
2010–2011	1,244.8	–2,892.2	846.3	41.2	–759.9
2011–2012	–1,656.7	–1,913.8	441.7	51.0	–3,077.8
2012–2013	–1,836.2	388.8	383.5	30.0	–1,033.9
2013–2014	1,632.5	–2,344.1	718.1	26.6	33.1
2014–2015	49.5	–768.8	1,017.4	26.3	324.4
2015–2016	–490.7	–96.0	878.2	36.0	327.5
1993–2016	–5,081.5	–31,670.1	28,700.3	621.6	–7,429.8

Source: see Table A1.

Streszczenie

Emisja CO_2 w krajach Grupy Wyszehradzkiej a polityka klimatyczna Unii Europejskiej

Zmiana klimatu jest jednym z najbardziej palących wyzwań naszych czasów. W związku z tym podejmowany jest szereg działań mających na celu złagodzenie tego negatywnego zjawiska. Redukcja emisji gazów cieplarnianych, poprawa efektywności energetycznej oraz wzrost udziału energii ze źródeł odnawialnych stanowią także priorytet polityki Unii Europejskiej. W tym kontekście celem artykułu jest zbadanie czynników wpływających na zmiany emisji CO_2 w czterech państwach członkowskich UE tworzących Grupę Wyszehradzką, w latach 1993–2016. Analiza przeprowadzona z wykorzystaniem metody dekompozycji LMDI (Logarithmic Mean Divisia Index) oraz tożsamości Kaya pozwala zidentyfikować czynniki, które w największym stopniu przyczyniają się do zmian emisji CO_2. Umożliwia ona także omówienie uzyskanych wyników w powiązaniu z polityką klimatyczną Unii Europejskiej.
Zgodnie z wynikami analizy dekompozycyjnej energochłonność oraz wzrost gospodarczy wyrażony PKB per capita były głównymi czynnikami przyczyniającymi się do zmian emisji CO_2 we wszystkich rozważanych krajach. Spadek emisji wynikał głównie z poprawy efektywności energetycznej i w mniejszym stopniu ze zmian koszyka energetycznego w stronę odnawialnych źródeł energii.

Słowa kluczowe: emisja dwutlenku węgla, analiza dekompozycyjna LMDI, polityka klimatyczna Unii Europejskiej, kraje Grupy Wyszehradzkiej

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The Labor Market in Poland and the Social Responsibility of the State and Business: Comparative Aspects

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Abstract

Since the beginning of the transformation of the Polish economy, Many disturbing phenomena have appeared on the labour market in Poland. This paper points out to several of them, namely: 1) inconsistency in respecting the rules of the market mechanism and the important role of political decisions, 2) long-term persistence of high unemployment rate and low effectiveness of methods of combating unemployment, 3) low wages and rising income diversification, 4) high share of non-standard forms of employment in total employment. The scale of these disturbing phenomena is bigger than in other economies under transformation.
In response to the imperfections of the market, many publications concerning corporate social responsibility appeared in Poland. According to the authors the reasons for the shortcomings of the labour market discussed in the paper should, however, be sought not only in the non-respect of the principles of corporate social responsibility, but also in the weaknesses of the adopted systemic solutions and weaknesses of institutions of the State.

Keywords: labour market, transition of the economy, Corporate Social Responsibility

JEL: J01, J08, P20

Introduction

Many phenomena appeared on the labor market during the transformation of the Polish economy, and they are often viewed negatively from a social and ethical point of view. The most important examples of non-compliance with the principles of ethics and corporate social responsibility include the striking inconsistency in respecting the rules of the market mechanism, how political decisions affect various sectors of the economy, the low effectiveness of attempts to combat unemployment and its negative effects, low wages and increasing income disparities, as well as the high proportion of non-standard forms of employment.

This article attempts to verify the hypothesis that the main causes of the negative phenomena observed on the labor market were the liberal economic policy, the weakening of the position of trade unions, and the large role of the shadow economy, the development of which was fostered by the high unemployment rate and lack of consistency in respecting the law and the labor code.

The essence of the labor market

There are many reasons why the labor market should be treated differently than the market for goods and services and the capital market. First of all, the market mechanism works effectively under conditions of perfect competition. However, the labor market is clearly different from other markets, because:

1. It shows more imperfections than other markets – there are more employees than employers, but employers have more bargaining power and can impose their conditions on employees.
2. Labor mobility is smaller than the mobility of capital.
3. Employees are more dispersed and have less access to information than employers.
4. The social, political, and economic effects of imbalances in the labor market are much more serious than in other markets (high unemployment, low wages) and threaten the collapse of social order.

The market's ability to operate effectively and create a strong motivation to increase professional activity, entrepreneurship, and take risky actions is its important advantage. This leads to a better use of production factors and an increase in entrepreneurs' income. At the same time, however, less enterprising entities go bankrupt and fall out of the market, and some employees lose their jobs. The diversity of income and assets resulting from the play of market forces may be treated as unfair and socially unacceptable, and lead to frustration, anxiety, and protests of wider social groups, and the intensification of other negative social and political phenomena.

In this situation, the state should play an important role in influencing the functioning of the labor market. In the literature (Bolero et al. 2003), there is a consensus that the state's influence on the labor market should involve:

1. Preventing discrimination of employees and preventing poverty.
2. Regulating employment contracts and the rights and obligations of employees and employers, and, in particular, respecting labor law provisions.
3. Regulating the activities of trade unions and employers' associations and acting as arbiter in the event of conflicts.
4. Providing social security in the event of unemployment, old age, illness, and death.

This means that the situation on the labor market should be determined not only by economic efficiency but also by ethical considerations. This is also the opinion of the European Commission (Gasparski et al. 2019), which recommends that ethics and social responsibility should become an integral part of management and be present in everyday business operations. The Commission postulates that ethics and corporate social responsibility should be applied in enterprises, respected by public authorities, and be the subject of academic research.

For many years, there has been rich literature in Poland regarding business ethics and corporate social responsibility (e.g., Gasparski 1999; Gasparski, Lewicka-Strzelecka 2001; Filek 2006; Klimczak, Lewicka-Strzelecka 2007), and also economic ethics (Klimczak 2006). In turn, they treat the ethics of the state as a concept referring to ancient and medieval philosophy, and especially to Aristotle's views. Synthetically, this concept was characterized by the contemporary German philosopher Otfried Höffe (1993), who stated: "*The guiding idea of the state and of the law is the idea of justice*" (quoted in Stawrowski 2019). In the common understanding, this thought means that "*the object of ethics is to describe economic phenomena from the point of view of ethical values in the scale of the entire economic system. At this level, the issue of the ethical dimension of social policy as well as culture (social inequalities, corruption, bribery) is also important*" (Prochownik, Rogowicz, Paletko 2019).

Examples of unethical actions in the transformation process of the Polish economy

The lack of consistency in the observance of market economy rules – the weak lose and the politically strong strengthen their position

The marketization of the economy has run inconsistently in Poland. In practice, it turned out that political decisions played a big role, which had an impact on the labor market. Two extreme cases demonstrate this: The political decisions to eliminate state-owned farms (PGRs) and protect jobs in mining, which are economically unjustified.

The government was planning to eliminate state-owned farms back in 1990. It turned out, however, that PGRs were not owners of the land, and a separate act had to be prepared, which was approved in 1991. I agree with the opinion of Adam

Tański, the then Minister of Agriculture, who said that "*in a collision with the realities of the free market, PGRs showed their helplessness, without permanent subsidies from the budget they could not exist*" (Nie zamordowałem pegeerów 2014); these farms were unable to finance their expenses, and they were threatened with bankruptcy. However, one-third of these farms functioned efficiently. Why, then, were all of them eliminated? Why were those that were threatened not given a chance to restructure? Where did this rush come from? Maybe PGRs should have been forced to restructure, and only after 2–3 years make the final decisions. In 1990, subsidies to agriculture accounted for 10.2% of the object subsidies, which constituted 5.9% of total subsidies and a mere 0.58% of current state budget expenditure (Statistical Yearbook 1994, pp. 155–156). Therefore, they were not amounts that would have seriously undermined the state's finances.

In 1991, over 330,000 people were employed in state-owned farms, which, together with families, accounted for about 1.5 million people condemned to an uncertain existence. The then decision-makers emphasized that people from former state-owned farms were protected – they received benefits, their children received scholarships, and it was possible to buy apartments cheaply (which, as it turned out, urgently required repairs and could not be sold because they were in remote areas; hence, you could not get to work due to the lack of train or bus connections). The benefits were quickly spent on TVs, carpets, and motorcycles. Is it any wonder that these people did not think about the future? Probably not. At that time, even many directors of large state-owned enterprises did not think that the process of marketization of the economy was irreversible. So, can we bear a grudge against people with less social awareness and who were less informed?

The fact that the consequences of the decision to eliminated state-owned farms are long-lasting has been confirmed not only by the research (Litwiński, Sztanderska, Giza-Poleszczuk 2008), which indicates that enclaves of poverty pass from generation to generation, but also the high unemployment rate in the poviats with former PGRs. Even years later, at the end of 2017, with an average unemployment rate of 6.6%, in several poviats of the Warmian-Masurian Voivodeship, it was close to 20%, e.g., in Braniewo – 21.1%, Kętrzyń – 17.9%, and Węgorzewo – 18.4%, www.stat.gov.pl (accessed: 20.10.2018).

The consistent subsidization of hard coal mining throughout the transformation period is, however, a political derogation from the rules of liberalism. In communist Poland, mining was particularly preferred due to the high internal demand for coal resulting from fast industrialization. Moreover, coal was an important item in Polish exports. Workers for the mining industry were therefore drawn from all over Poland and were generously remunerated. Miners, using their strong position in the labor market, won a lot of additional privileges, which they still do not want to give up.

The main purpose of the so-called shock therapy was to quickly heal the economy by eliminating unprofitable enterprises. This was to lead to the reduction of object subsidies, which would seriously affect the reduction of public expenditure, and thus would en-

able tax reduction. Indeed, subsidies to enterprises were decreasing, but this rule, in principle, did not apply to hard coal mining.[1] Although PGRs and other unprofitable enterprises were quickly eliminated, the hard coal and lignite mining section recorded a record loss of over PLN 4.5 billion in 2015 (Central Statistical Office 2018, p. 587). Whether it affected the level of remuneration in mining is shown by the data in Table 1. Before the transformation, wages in mining exceeded twice the average wage. In 1990, the relationship between the average wage and the salaries of miners underwent a slight decline, but they quickly returned to the situation recorded before the transformation, despite the deficit recorded in the sector. This happens in mining, while the level of wages in the textile, clothing, and leather industries has sharply declined (although deep restructuring has been carried out there, and these industries now have good financial results).

Table 1. Relationship between wages in selected industries (average salary = 100)

Industry	1985	1989	1990	1993	2014	2017
Coal mining	215.5	182.2	160.9	182.3	188.8	170.0[a)]
Textile	95.5	97.5	84.9	78.3	68.5	73.2[b)]
Clothing	86.0	86.1	75.6	73.0	54.1	57.6
Leather	91.0	91.3	77.7	70.8	60.4	63.6

a) Hard and brown coal mining (lignite)

b) Production of textile products

Source: Author's own calculations based on *Statistical Yearbooks*, Central Statistical Office (GUS), Warsaw 1991, pp. 231, 232 and 1994, p. 214 and *Statistical Yearbook of the Republic of Poland*, Central Statistical Office (GUS), Warsaw 2015, pp. 273; 2018, p. 275.

Observing the remuneration relationship raises numerous questions. Can the level of remuneration be completely detached from the financial condition of the company? Can high wages in mining be explained by the strenuous work and high degree of danger?

It is true that the work of a miner is difficult and dangerous. However, the Central Statistical Office data on accidents at work indicate that working in agriculture, the fishing industry, and construction, and even in transport and storage, is also very dangerous.[2] The salaries in these sections are, however, much lower. Or maybe such large

1 In 1989, the object subsidies accounted for 26.9% of current expenditure of the state budget. In subsequent years, they began to decline rapidly to 9.4% (1990), 4.1% (1991) and 1.5% (1992). The structure of object subsidies also seriously changed. In 1991 as much as 53% of these subsidies were for coal, and second place was occupied by subsidies for PKP rail transport – 21.4%, and PKS bus transport – 9.7% (Statistical Yearbook 1991, pp. 147, 1992, p. 140). In 1992, the weight of object subsidies shifted to PKP (47.2%) and PKS (22.7%), while 14.2% was allocated to mining. Since 1993, mining has received subject subsidies to restructur the sector instead of object subsidies (Statistical Yearbook 1994, p. 156).

2 In 2014, in mining there were 14 people injured in accidents at work per 1000 employees, including 0.15 fatal accidents. At the same time in agriculture, forestry, hunting, and fishing this indicator was 11 people (including 0.092, or about 0.1 fatalities). In construction, transport, and warehousing, these indicators were respectively: 8 and 8.5% of people and 0.067 and 0.057 per 1000 employees (GUS, Statistical Yearbook of Labor 2015, p. 250).

wage differences can be explained by the small supply of labor and the lack of people willing to work in mining? Press releases describing the situation in mining show that due to the high level of earnings, there are a lot of people willing to work in mining, including underground. However, without connections or the support of trade unions, getting a job in mines is practically impossible (Baca-Pogorzelska 2016).

Another argument showing that the high level of remuneration in mining does not result from the situation on the labor market but from the strong political position of the mining unions is the data on the relationship between labor costs in mining and other sectors of the economy in Poland and other countries (Table 2). In 2016 (in comparison with 2012), these relationships underwent very moderate changes. Still, the relationship between hourly labor cost per employee in mining and industrial processing remains the biggest in Poland. Due to the fact that remuneration constitutes the main element of labor costs, it can be seen that wage the privileges of the Polish mining industry clearly differ from the standards adopted in other European Union countries.

Table 2. The relationship between hourly labor costs per employee in EU countries in selected sections in 2012 and 2016 (Industrial processing = 100)

Country	Mining and extraction		Production and supplies of electricity, gas, and water		Construction	
	2012	2016	2012	2016	2012	2016
Austria	114.3	114.1	144.4	138.9	89.3	89.3
Belgium	109.7	109.7	166.2	165.1	80.0	79.4
Czech Republic	140.6	123.8	174.7	162.4	68.6	93.1
France	94.2	89.9	154.7	152.9	86.3	83.5
Spain	124.8	142.3	217.2	206.2	93.0	88.5
Germany	116.4	114.2	136.3	126.6	73.1	70.0
Poland	213.9	180.6	182.3	176.6	100.6	98.7
Slovenia	141.3	113.2	159.8	160.4	82.3	87.7
Sweden	116.7	120.5	120.8	122.0	92.6	95.2

Source: Author's own compilation based on the *Statistical Yearbook of Labor*, Central Statistical Office (GUS), Warsaw 2015, p. 356; 2017, p. 350.

Unemployment

Shock therapy in Poland was the most successful attempt to use the so-called Washington Consensus, which assumed that economic policy should be based on privatization, liberalization, deregulation, and tough fiscal policy (Williamson 1993). As a result of the privatization of large state enterprises carried out at a rapid pace, many employees lost their jobs, often under so-called group layoffs and early retirement. The liberalization of foreign trade, the collapse of trade with the Comecon countries, especially with the former USSR, as well as the pursuit of a conscious policy that led

to the bankruptcy of state-owned enterprises,[3] was another reason for the surge in unemployment.

In the initial period of the transformation, unemployment grew rapidly. In the first quarter of 1990, unemployment stood at 266,000, and the registered unemployment rate was 1.5%. In the fourth quarter of that year, the number of unemployed exceeded 1 million (1,126,100), and the unemployment rate had risen to 6.3%. In the fourth quarter of 1993, unemployment reached almost 3 million (2,889,600), and the unemployment rate had increased to 16.4%. The percentage of unemployed people dismissed due to reasons related to the workplace, i.e., group layoffs, increased rapidly – from 5.7% in the first quarter of 1990 to 19.5% in the fourth quarter of 1993, although the maximum level of group layoffs, which reached 24.1%, was recorded in the second quarter of 1992 (Statistical Yearbook 1994, p. 129). The situation on the labor market did not improve significantly until 2017. It resulted mainly from the upturn in Poland and the world. The unemployment rate was down to 4.9%, the lowest in 25 years. This is a great reason to be proud. However, it should be remembered that in some EU countries, the unemployment rate was lower, for example, 2.9% in the Czech Republic, 3.8% in Germany, 4.2% in Hungary, and 4.4% in the United Kingdom (*Statistical Yearbook of Poland* 2018, p. 796).

It is worth noting that in Western Europe, the fight against unemployment is seen as a government priority. In Poland, however, unemployment was seen as the "necessary evil" and the price to be paid for switching from a centrally planned economy to a market economy. And this was manifested by the fact that unemployment benefits were low and short-paid, and that very modest funds were spent on active forms of combating unemployment.

Poland is one of the few OECD countries in which the period of collecting unemployment benefits has been shortened in recent years from 18 to 12 months while in some countries it lasts for 3–4 years, and the amount of benefits in relation to the salary paid during work is also very low. For example, from March 1, 2019, the basic benefit is PLN 847 in the first 20 days of entitlement to unemployment benefit and PLN 665.70 in the subsequent days.[4] In many OECD countries, the amount of benefit depends on previous earnings and amounts to as much as 70–80% of the salary (Kubiak, Kwiatkowski 2017, pp. 198–202). It is also worth stressing that although the hypothesis is put forward in the literature that generous benefits increase unemployment and intensify wage pressure (Snower 1997), in the economic policy of Western European countries, ethical and solidarity considerations play a greater role than a purely

3 Apart from income tax, state-owned enterprises were subject to excessive wage growth tax and an obligatory dividend from the initial capital, even when the enterprise incurred losses. The very high interest rate on loans taken out before the transformation was another reason for the deterioration in the financial standing of enterprises.

4 The amount of the benefit depends on the seniority and is: up to 5 years of work – 80% of the basic benefit, over 5 years, but not more than 20 years – 100% of the basic benefit, and in the case of a seniority of more than 20 years – 120% of the basic benefit, http://mupplock.praca.gov.pl/rynek-praca/stawki-kwoty-wskaźniki (accessed: 6.03.2019).

economic calculation. The low effectiveness of the fight against unemployment also results from the lack of funds financed from the Labor Fund and how they are distributed. For example, according to GUS data, in 2014, nearly PLN 3 billion was allocated to unemployment benefits, which is more than was spent for active forms of the fight against unemployment in the form of training, intervention works, public works, loans, and vocational training for young people – for which approximately PLN 1.8 billion was spent in total (Statistical Yearbook of Labor 2015, p. 175).

Low wages and growing income diversification

In the initial period of the transformation, low wages in Poland were widely regarded positively, arguing that they contribute to improving the competitiveness of enterprises on foreign markets, they are an important factor accelerating the inflow of foreign capital, and they also favor the development of small enterprises. Only recently has there been a discussion on whether the low level of remuneration in Poland is justified by the economic situation of the country and what the consequences are thereof (Krajewska 2018, pp. 73–90).

The following information proves that changes in the level and relationship of wages in Poland are heading in a dangerous direction.

The low share of employment-related costs in GDP and, furthermore, its clearly declining trend arouses anxiety. Table 3 includes EU countries with the highest and the lowest share of these costs in GDP. In 2017, labor-related costs in Poland accounted for 38.6% of GDP. A lower share was recorded only in three EU countries. Over the past quarter of a century, this rate has decreased in Poland by 4.3 percentage points. It is also worth noting that in some countries, the share of costs related to employment is even above 50% of GDP and is characterized by quite high stability in the long run.

Various studies (Kabaj 2013; Majchrowska 2016; Rutkowski 2016) show that the growth rate of labor productivity in Poland is higher than the rate of wage growth, and the disproportions in Poland are bigger than in other countries. For example, taking into account relative values, labor productivity in Poland in 2014 was lower by 32% than in the EU-15, and wages by 45% (Majchrowska 2016, p. 20). It is also worth quoting the calculations by Kabaj (2013), which show that if between 2001 and 2012 wages had increased at the same rate as labor productivity, in 2012, the average wage would be higher by PLN 1,628 and would amount to PLN 5,150 instead of PLN 3,522.

The high share of employees receiving low wages, i.e., up to 50% of the average wage in the economy. It stood at 13.4% in 1999, 18.9% in 2012, and 19.0% in 2014 (*Statistical Yearbook of Labor* 2015, p. 306). It is only in 2016 that we see a slight decline to 17.5% (*Statistical Yearbook of the Republic of Poland* 2018, p. 276). This means that almost every fifth employee receives half of the average salary. In 2014, in this category (*Statistical Yearbook of Labor* 2015, pp. 306–310), there were not only employees performing simple work (43.1%), but also members of such professional groups as technicians and

other medium personnel (10.1%), office workers (16.5%), service and sales staff (48.1%), industrial workers and craftsmen (25.4%), and operators and assemblers of machines and equipment (19.9%.)

Table 3. The share of employment-related costs in GDP in selected EU countries

Country	1990	1995	2000	2005	2010	2017
France	52.4	51.5	51.2	51.0	52.1	52.2
Denmark	55.5	52.7	53.2	50.5	53.0	51.8
Germany	56.0	54.0	53.4	49.8	49.7	50.9
...	...	...	...	...	...	...
Poland	**42.9**	**40.9**	**41.3**	**36.7**	**37.9**	**38.6**
Romania	51.6	34.0	39.5.	38.9	35.5	36.0
Greece	32.3	32.3	33.6	34.3	35.8	33.6
Ireland	46.3	41.1	39.9	39.0	41.3	29.4

Source: *Statistical Yearbook of the Republic of Poland*, Central Statistical Office (GUS), Warsaw 2001, p. 720; 2005, p. 871; 2015, p. 884; 2018, p. 890.

And it is worth recalling that the minimum wage of 50% of the average salary was accepted by the ILO (*Convention No. 137 of 1970*). This minimum wage level was also provided in the European Social Charter. At the same time, however, it appears from press releases and reports of joint-stock companies that the remuneration of Polish CEOs and outstanding specialists was equal to, and may have even exceeded, the remuneration in many countries of Western Europe.

In Poland, in comparison with other EU countries, the share of low-wage employees is high, i.e., those earning no more than two-thirds of the national median of hourly earnings. In 2014, low-paid employees accounted for 23.6% of all employees. With an average of 17.2% for the EU-28, a higher share of this indicator was observed only in three countries – Latvia (25.5%), Romania (23.6%), and Lithuania (24.0%). By contrast, low-paid workers accounted for only 2.6% in Sweden, 3.8% in Belgium, 5.3% in Finland, 8.6% in Denmark, and 8.8% in France (Wages and labor costs, http://eurostat.eurostat.statistics-explained.ec.europa.eu, accessed: 22.02.2019).

Poland falls in the OECD ranking on the quality of work. In terms of earnings (low and burdened with inequalities), Poland ranks 32nd among OECD countries. Only Chile and Mexico were behind us (OECD Employment Outlook 2015).

The data indicate an increase in income inequalities in Poland. The phenomenon is recognized (Skidelsky 2012, p. 159) as unfavorable for two reasons. Firstly, equality is regarded as a good in itself (the welfare state is part of a developed economy), and secondly, inequalities, especially rapidly growing ones, lead to political instability.

Non-standard forms of employment

Due to the excessive flexibility of the labor market, weak trade unions, high unemployment which has lasted for a long time, and the acquiescence to the functioning of and the development of the shadow economy, labor law is not respected in Poland. This is reflected by a very high percentage of people working on non-standard forms of employment contracts, i.e., fixed-term contracts, occasional, in the form of self-employment, or in the gray zone. Eurostat data show that in 2017, in Poland, 26.1% of employed people worked on fixed-term contracts, compared to the EU average of 14.3%. Only Spain (26.8%) was in a worse situation than Poland, while in some countries fixed-term contracts played a negligible role, accounting for 1.2% of employment contracts in Romania, 1.7% in Latvia, 3% in Lithuania, 3.1% in Estonia and 4.4% in Bulgaria (Rozwadowska 2018). Moreover, Poland was in the group of countries in which the share of temporary employment in total employment grew rapidly (in 2002 it amounted to 15.4%), and to a large extent, it included young people (aged 15–24). In 2015, this concerned 71.2% of young employees. Only in Slovenia (72.7%) was the situation worse, while in Estonia, 11.2% of young workers were in such a situation, and in the UK 6.2%, with an OECD average of 24.1% (OECD 2015).

The rapidly growing share of temporary contracts, and especially of civil-legal contracts, is an extreme' phenomenon that proves that employers do not comply with the labor code.[5] These contracts are detrimental to employees because, apart from uncertainty and instability of work, they do not give the right to leave of absence, medical care, protection related to parenthood, retirement, or creditworthiness. However, they are clearly preferred by employers, because they involve easier dismissals, there is no need to pay compensation in the event of unjustified dismissals, lower labor costs (lower social security contributions, lower costs of training, holidays, etc.), and a greater possibility of non-compliance with rules regarding working time and health and safety conditions.

Another manifestation of the deregulation of the labor market in Poland involves people defined for tax purposes as self-employed. According to GUS estimates (2018), in 2016, there were 1.15 million natural persons who carried out non-agricultural activities without employing employees on the basis of an employment relationship, and thus they had the status of self-employed. Turning to self-employment is favored by the tax solutions adopted in Poland. Such people do not have to settle income tax according to progressive rates, and in addition, they pay lower social security contributions. The self-employed group is very diverse. There are people with very low incomes, unskilled people, those running a simple business (cleaners, security guards),

5 The results of inspections by the National Labor Inspectorate (PIP) show that 26.7% of the examined civil law contracts had characteristics of a contract of employment, the price was the decisive criterion in over 80% of public tenders, which resulted in companies which did not employ full-time employees and which paid very low wages being awarded public procurement contracts. Health and safety requirements are often not observed, especially in SMEs (Szumilewicz 2018).

people "pushed" by companies into self-employment to save on labor costs, as well as outstanding, high-class managers, lawyers, athletes, artists, and journalists who, acting in accordance with the law, pay 19% tax on their very high income. They act in accordance with the law. However, is this action ethical? Should it be maintained, only because once, on the tide of extremely liberal views, were such provisions introduced? How does this relate to ethics and corporate social responsibility?

The causes and consequences of behaviors on the labor market which do not respect ethics and corporate social responsibility

The word ethics, in the literal translation from the Greek, meaning "custom," refers to the course of action approved and accepted in society. In the ordinary sense, ethical behavior is a behavior that is righteous, just, and fair. Thus, the examples of irregularities in the labor market in Poland cited above should be considered unethical. Many of these irregularities are a consequence of the socio-economic system adopted in Poland and the institutional solutions adopted in the initial period of transformation.

The shape and problems of the current labor market were strongly influenced by the shock therapy used in the initial period of the transformation, followed by a variant of the liberal policy, which clearly preferred entrepreneurs, implemented by successive governments. Further years of the transformation were also under the slogan of market glorification. And although there are many participants on the market – consumers, employees, and entrepreneurs – it was decided to pursue economic policy clearly set out to create favorable conditions for entrepreneurs. In practice, this was reflected in taking measures to weaken the position of trade unions, reduce taxes for entrepreneurs, reduce labor costs, make the labor market more flexible, reduce the scope of social benefits and tolerate the vast gray zone. The spread of unethical activities on the labor market was largely fostered by a high unemployment level, especially in the regional cross-section and among low-skilled people.

Accurately, though bluntly, the problems of the transformation of the Polish economy were summarized by Tadeusz Kowalik (2008, p. 34), who indicated social weaknesses (unemployment, low benefits, and low salary not keeping up with the increase in labor productivity), writing: "*All these long-lasting persistent peculiarities, though intense to a different degree, prompted me to express ten years ago*[6] *that as a result of the epigonic-bourgeois revolution in Poland, one of the most unjust socio-economic systems of Europe of the second half of the twentieth century was created. The further course of events strengthens me in this belief.*" Another decade has passed, and the above opin-

6 The author refers to his earlier article: T. Kowalik, *Sierpień – epigońska rewolucja mieszczańska*, "Nowe Życie Gospodarcze" 1996, No. 37.

ion is still valid. Neither the 500+ Program nor raising the minimum wage has solved the problem. Unemployment benefits are still very low, non-standard ("junk") employment contracts persist, and tax policy requires major changes.[7]

Various irregularities in the labor market may result from maintaining a balance between the two main players on the labor market – employers and employees. The most important task of trade unions is to guard the interests of employees and prevent their discrimination and unfair treatment. However, since the beginning of the transformation, trade unions have not had good public relations in Poland, neither in the media nor among employers. It is often indicated that they act destructively, exhibit demanding attitudes, burden employers with additional costs related to maintaining trade union posts, expenditures on trade union infrastructure (e.g., rooms), and they also force employers to agree to maintain workers protected against dismissal.

Trade unions in Poland are weak for two reasons: the low degree of unionization, and the low effectiveness in negotiations with employers and the government on issues concerning all employees. It is estimated that in Poland, approx. 1.6 million people belong to trade unions, which is about 11–12% of the total number of employees. By comparison, in 1990, about 40% of employees belonged to the unions. The OECD data shows that the unionization rate is similar to that in the US but much lower than in Western European countries, where the degree of unionization is also falling. In Sweden, over a decade ago, over 90% of employees belonged to trade unions, while currently, it is about 70%. The other Scandinavian countries and Luxembourg are still characterized by high unionization (above 60%) https://stats.oecd.org (accessed: 12.01.2017).

In Poland, the largest degree of unionization is in large state enterprises, mainly those in traditional branches of industry (the strongest is in mining) and in the public sector (where the teaching unions are the strongest). The private sector accounts for about 30% of trade union members. They are mainly concentrated in large privatized companies with foreign capital.

According to the research conducted by Juliusz Gardowski (2013), trade unions are effective when: 1) the union's management is competent in labor and trade union law, as well as business economics, 2) unions represent more than half of the employees, 3) the number of unions in one enterprise does not exceed three, and optimally two unions, 4) the management of the unions cooperates with the management board permanently in the area of employee affairs, 5) relations with the management board are relatively peaceful. Unfortunately, in Polish enterprises, these conditions will probably not be met quickly. This is indicated by, among others, research on the liberalization of labor markets (Filipowicz et al. 2017, pp. 234–240), which shows that Poland is among the OECD countries with the highest synthetic index of liberalization (next to Great Britain, the USA, Korea, and Estonia). This indicator included three varia-

7 The main shortcomings of labor taxation are the high bottom tax rate, low tax-free income and high social security contributions.

bles: the degree of unionization, the relationship between the minimum wage and the median, and the replacement rate.

The increase in the size of the shadow economy in Poland was the natural consequence of the weak position of trade unions, high unemployment, and the government's lack of consistency in respecting the provisions of the law and the labor code.

The size of the shadow economy in Poland is estimated differently: from 21% of GDP, according to the FOR (Shadow Economies 2015) report, to 22.1% of GDP, indicated by eminent gray zone researchers (Schneider 2018). International research (Schneider 2009, p. 44) indicates that high taxes and social security contributions affect the growth of the gray economy in the labor market to the greatest extent (35–38% of indications). Tax morality also plays a significant role (22–25%), followed by factors such as the quality of government institutions (10–22%), labor market regulations (7–9 %), payment method (5–7%), and quality of public services (5–7%). High social security contributions in Poland are also given as the main reason for the escape of some entrepreneurs to the gray zone (Wyrzykowski 2013, p. 192). They are also an excuse for tolerance towards the gray economy.

The high level of labor market liberalization, weak trade unions, and the large gray zone area mean that labor market institutions such as labor law, forms of employment, minimum wage, unemployment benefits, and labor taxation, operate less efficiently, avoid control, and create more space for unethical activities. These weaknesses can clearly be shown by the example of the National Labor Inspectorate (PIP).[8]

The weaknesses of the labor market, especially those related to violating ethical issues, lead to multiple economic, demographic, social, and political consequences. The main economic consequences include high and regionally differentiated unemployment rates, low consumer demand, a scarce and financially weak middle class, which is an important stimulator of technical progress, low income of the state budget due to low wages and forms of employment not provided by the Labor Code, and the low effectiveness of combating unemployment. The demographic consequences include economic emigration and a low fertility rate. Large social diversity and a lack of perspectives for young people are indicated as the main social consequences. The political consequences, on the other hand, are that society has become disappointed both with the market and with the state, which has resulted in an increase in the popularity of populist and nationalist slogans as well as the low turnout of young people in elections.

8 PIP's work should contribute to the improvement of the situation on the labor market; however, it is well-known that employees of this institution operate under the pressure of multiple restrictions. Among the most important, it is mentioned that: 1. National Labor Inspectorates have limited financial resources available (PLN 318 million in 2016) and personnel (about 1,600 inspectors who are very low paid, e.g., the pay of the junior inspector was PLN 2,500 gross and has been frozen since 2004); 2. PIP cannot perform unannounced inspections. The inspections take place at a time convenient for the employer and are arranged one week in advance; 3. Penalties for violating employee rights are low, so they do not deter people from breaking the law. It is often more profitable for employers to pay a penalty and include it in the company's operating costs; 4. Inspectors can only carry out inspections in registered companies, so they cannot carry out inspections in companies operating in the gray area, where health and safety regulations are most often violated.

Conclusions

The examples of non-compliance with ethical principles on the labor market indicate that they largely stem from the adopted model of the Polish systemic-liberal economic policy transformation (although – on the example of PGRs and hard coal mining – it can be seen that it has not been applied consistently), excessively making the labor market more flexible, weakening the position of trade unions, as well as weaknesses of other labor market institutions and the rapid development of the shadow economy. Under these conditions, it is difficult to expect the said weakness of the labor market to be effectively mitigated by referring to corporate social responsibility. If, after Joanna Filek (2006, p. 4), it is assumed that we can only speak about this responsibility if companies are doing something that goes beyond the legal norms in force, then we must also agree with the author (Filek 2007, p. 28) that we are only in the initial phase of its construction, "*because the problem in our country involves compliance with applicable laws*."

In this situation, Grażyna Wolska (2017) seems to be right when analyzing the ethical nature of the behavior of members of state institutions and businesses. She emphasizes that the changes should start from the highest state level. She justifies this as follows: "*At this level, it has a large symbolic load, which can effectively stimulate changes, because the change at the highest level determines its rank and signals the importance of the problem*."

Therefore, the current situation on the labor market requires changes. They should include:

1. Introducing legal solutions which strengthen the position of employees in their relations with employers and consistent compliance with these solutions, and especially increasing the role of trade unions in negotiations with the government and employers;
2. Changing the proportion of national income distribution in favor of employees, which requires changes in the system of taxation of income from work (in order to increase progressivity and redistributivity), as well as more consistent compliance with the Labor Code;
3. Undertaking a more consistent fight against the gray zone, which would increase the income of employees and the state budget.

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Streszczenie

Rynek pracy w Polsce a społeczna odpowiedzialność państwa i biznesu. Aspekty porównawcze

Na polskim rynku pracy pojawiło się wiele niepokojących zjawisk. W artykule zwrócono uwagę na kilka z nich, czyli: 1) niekonsekwencję w respektowaniu reguł mechanizmu rynkowego i dużą rolę decyzji politycznych, 2) utrzymywanie się przez długi okres wysokiej stopy bezrobocia i niską skuteczność metod walki z bezrobociem, 3) niski poziom płac i rosnące zróżnicowanie dochodów, 4) wysoki udział niestandardowych form zatrudnienia w zatrudnieniu ogółem. Skala tych niepokojących zjawisk jest większa niż w innych transformujących się gospodarkach.
W reakcji na niedoskonałości rynku pojawiło się w Polsce wiele publikacji dotyczących społecznej odpowiedzialności biznesu. Zdaniem autorów przyczyn omawianych w referacie mankamentów rynku pracy należy jednak poszukiwać nie tylko w nierespektowaniu zasad społecznej odpowiedzialności biznesu, ale także słabości przyjętych rozwiązań systemowych i słabości instytucji państwa.

Słowa kluczowe: rynek pracy, transformacja gospodarki, społeczna odpowiedzialność biznesu

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Labor Market Integration of People with Disabilities According to Polish and Greek Legislation

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Abstract

The paper presents the types of support available to employers who employ individuals with disabilities, as well as opportunities for the disabled to enter the labor market, start a business, and keep it running. The text is enriched with information about the labor rights of people with disabilities. A thorough examination of the legislation in force in Poland and Greece led us to numerous and interesting conclusions. Despite many seemingly attractive forms of support available to employers and people with disabilities, we note that the labor participation rate of people with disabilities is still much lower in Poland and Greece than in many other European countries. What is the main barrier to the activation of people with disabilities? Although the answer to this question is certainly multi-threaded, it seems justifiable to claim that the complexity of the legislation, a number of stipulations in the area of public aid, and possible new adverse amendments to labor laws effectively discourage employers from creating jobs for people with disabilities and they discourage people with disabilities from being economically activated.

Keywords: people with disabilities, support, employer, labor market, Poland, Greece

JEL: J14, J64, J71

Introduction

People with disabilities of a productive age represent more than 14 percent of the population of the European Union, of which more than 50 percent are economically active people (BAEL 2019). In 2018, there were almost 2.9 million people with disabilities over 18 years of age in Poland. This means that according to the results of the quarterly Representative Survey of the Economic Activity of Population (BAEL), 10.3 percent of the Polish population of working age amounts to almost 2 million people. If we consider the fact that, for example, only one in four people with disabilities was economically active in Poland, and every third person in this group was employed, then the situation is extremely grave. Although there has been a visible systematic increase in both labor market participation and employment rates for people with disabilities since 2010, there is a gap between the results achieved in Poland and most European countries (Kobus-Ostrowska 2011, pp. 235–253). In Greece, according to the Global Activity Limitation Index (GALI), only 24.20 percent of individuals with severe limitations/disability are employed in comparison to 57.60 percent of the typical population (Hellenic Statistical Authority 2018). The gap between the employment rates of people with severe limitations/disability and people with no limitation is worth noting, at 33.4 percent. Respectively, 38.8 percent of individuals with severe limitations/disability are unemployed in comparison with 24.6 percent of the typical population (National Confederation of Disabled People 2018).

The situation is all the more interesting for the researcher, as the rights of people with disabilities to live a decent life and work are guaranteed in a number of documents of national as well as international law. What are the real opportunities to put the law into practice? This paper presents the possibility of activating people with disabilities in Poland and Greece, separately and narratively described for each country, considering the following aspects: (i) Support for employers of people with disabilities; (ii) The labor rights of people with disabilities; (iii) Support for individuals with disabilities entering and re-entering the labor market.

Support for employers that hire people with disabilities in Poland and Greece

In Poland, employers hiring people with disabilities have the right to:

1. Wage subsidies for people with disabilities (Article 26 a-c of the Rehabilitation Act).
2. The reimbursement of the costs of adjusting and adapting existing workstations for people with disabilities (Article 26 of the Rehabilitation Act).
3. The reimbursement of expenses incurred by employers on workplace equipment (Article 26 e of the Rehabilitation Act).
4. The reimbursement of the cost of training employees with disabilities (Article 41 of the Rehabilitation Act).

5. The reimbursement of the cost of hiring an employee who assists an employee with a disability at work (Article 26 d of the Rehabilitation Act).

In addition, employers can create so-called supported employment enterprises, and in consultation with the third sector, also vocational rehabilitation facilities. If employers hire at least six percent of employees with disabilities, they are exempt from the contribution to the State Fund for the Rehabilitation of People with Disabilities (PFRON). All currently available forms of assistance for employers of people with disabilities in Poland are presented below.

Employers who hire people with disabilities are entitled to a subsidy every month from the PFRON funds to the wages of employees with disabilities who are employed under an employment contract, (Art. 26 a-c of the Rehabilitation Act), regardless of whether the employer operates in the open market or in a supported employment enterprise (Journal of Laws of 2011, No. 127, Item 721). The subsidy is granted if an employee has been included in the register of employed people with disabilities maintained by the Fund, as observed by Karpińska & Madej et al. (2010). Additionally, people with disabilities performing outwork, and this work is their only source of income (after presenting by these people a decision on the degree of disability), are also entitled to this form of support.

Among the entities eligible for assistance, the following are mentioned: (i) employers with fewer than 25 employees (converted into full-time work), (ii) employers with at least 25 employees (converted into full-time work), with the total employment rate of people with disabilities of at least 6%, (iii) employers running supported employment enterprises. Unfortunately, the following employers are not eligible for monthly wage subsidies (Journal of Laws No. 8, Item 43): (i) those who finance employee wages from public funds; (ii) those who have outstanding amounts due to the PFRON exceeding the amount of PLN 100; (iii) those who employ at least 25 employees (converted into full-time work), and the employment rate of people with disabilities is less than 6%.

Another form of support for employers is the reimbursement of the cost of adjusting and adapting existing workstations for people with disabilities by the PFRON (Journal of Laws No. 62, Item 316, 2011) assuming that the employer hires a person with a disability for at least 36 months. The costs may be reimbursed if an employer has: (i) adapted premises to meet the needs of people with disabilities or adapted new or existing workstations to their needs; (ii) adapted or acquired equipment to help a person with a disability perform a job or function in the workplace; (iii) purchased or authorized software to be used by employees with disabilities or/and purchased supporting technological equipment or adapted them to their needs; (iv) engaged professionals in the field of medicine to recognize the needs of jobs for people with disabilities.

The maximum amount of aid for adapting one workstation is twenty times the average salary for each work station adapted for a person with a disability (Journal of Laws of 2011, No. 62, Item 316).

Reimbursement applies to people with disabilities who (Official Journal of the European Union L 214 of August 9, 2008): (i) are unemployed and looking for work, and

sent to work by the district labor office; (ii) remain in employment with the employer applying for reimbursement if the disability of those people occurred during employment with the employer (with the exception of when the disability resulted from a breach of applicable labor laws by an employee or employer).

In addition to the above-mentioned forms of support, the employer has the right to apply for the reimbursement of costs incurred for workstation equipment (according to Art. 26 e of the Rehabilitation Act) on different principles than those mentioned above. The employer must have been operational for at least 12 months. The maximum amount of financial assistance from the PFRON must not exceed fifteen times the average wage. At the same time, the employer agrees that a person with a disability for whom he or she obtains reimbursement of workstation equipment costs shall be employed in the designated position for at least 36 months.

Another form of assistance is the reimbursement of the cost of training employees with disabilities. For this kind of assistance, an employer who employs people with disabilities and organizes training for them may apply in accordance with Art. 41 of the Rehabilitation Act. (Journal of Laws No. 57, Item 472). However, an employer may only apply for a partial refund of the cost of training an employee with a disability from the State Fund for Rehabilitation of People with Disabilities. The amount of the refund is up to 80% of the cost incurred. The refund provides the following costs incurred by the employer (Journal of Laws No. 226, Item 1475): (i) salaries and travel expenses of the training staff and trainees; (ii) the cost of a guide or guardian of an employed disabled person with a severe disability; (iii) accommodation costs of the training staff and trainees, and a sign language interpreter or reader for the visual impairment; (iv) remuneration of a sign language interpreter or reader for the visual impairment, or a guardian of an employed person classified as having a severe disability; (v) the cost of consulting services related to the training; (vi) the costs of administration and office services; (vii) the depreciation of tools and equipment to the extent that they are used for the training, with the exception of tools and equipment purchased under public support during the seven years prior to the implementation of the training; (viii) the costs of training materials.

One question remains to be considered, namely the refund amount and the type of training. And thus, the refund cannot exceed:

1) 55% of training costs eligible for aid for specific training, and 80% of training costs eligible for aid for general training – for small-sized enterprises,
2) 45% of training costs eligible for aid for specific training, and 80% of training costs eligible for aid for general training – for medium-sized enterprises,
3) 35% of training costs eligible for aid for specific training, and 70% of training costs eligible for aid for general training – for large enterprises.

An important innovation is the reimbursement of the cost of employing an employee who helps the employee with a disability at work (Article 26d of the Rehabilitation Act). An employer who employs an employee with a disability may receive a reimbursement from the PFRON of the monthly costs of employing staff to assist the employee

with a disability at work in the range of activities which facilitate communication with the working environment, and in doing things that are impossible or difficult for employees with a disability to do individually in their workplace (Barczyński 2008, p. 18). The method of determining the reimbursement is interesting. The amount is calculated by dividing the number of hours devoted to helping people with disabilities by the number of hours people with disabilities work in the month and multiplying the result by the amount of the minimum wage. The number of hours spent by the employee on helping the disabled worker may not exceed 20% of the number of hours the employee works in a month. What is more, the rules do not prohibit a person with a disability from being the employee who helps a disabled worker (Journal of Laws 2011, No. 62, Item 316). As in the previously examined forms of assistance, it is the governor who reimburses the cost under the terms and conditions, and the amount specified in the agreement concluded with the employer, except that the costs incurred by the employer prior to signing the contract shall not be reimbursed.

In Poland, employers have the opportunity to create also a supported employment enterprise or vocational rehabilitation facility (Barczyński 2008, p. 16–17). Specific types of relief and exemptions are provided for each of these forms. Thus, for example, the Supported Employment Enterprise is an employer to whom the governor has granted the status of Supported Employment Enterprise in the form of an administrative decision and who: (i) has run the business for a period of at least 12 months; (ii) employs at least 25 employees (converted into full-time work); (iii) for a minimum period of six months has achieved the employment rate of people with disabilities in the amount of:

1. at least 50%, of which at least 20% of all employed people must be classified as with severe or moderate disability,
2. at least 30% if the employer employs people with visual impairments or mental illness with a severe or moderate degree of disability.

The vocational rehabilitation facilities are an attractive form of vocational activity. Each of them is an organisationally and financially separate entity created for the purpose of employing people with disabilities who are classified as significantly and moderately disabled. The facilities may be established by the municipality, a foundation, an association, or another community-based organization whose statutory mission is the vocational and social rehabilitation of people with disabilities.

To receive the status of a vocational rehabilitation facility, one should ensure that at least 70% of employees are people with disabilities (employment in vocational rehabilitation facilities is determined by the number of people), in particular, those referred to work by the local labor offices, such as people classified as moderately or severely disabled, diagnosed with autism, mental retardation or mental illness. It also including those people whom the program committee of occupational therapy workshops decided could take up employment and continue their vocational rehabilitation. However, the employment of people with a moderate disability cannot be higher than 35% of total employment.

Another form of assistance available for businesses is an exemption from contributions to the PFRON. Eligible are those who employ at least 25 employees in full-time employment when they employ people with disabilities with diseases that especially hinder the performance of work: Parkinson's disease, multiple sclerosis, severe visual impairment (blindness) and amblyopia, deafness, epilepsy, mental retardation, and late complications of diabetes.

The following entities are also exempted from contributions to the PFRON (Journal of Laws No. 226, Item 1475): (i) employers with an employment rate of people with disabilities higher than 6%; (ii) state and local government agencies that are budgetary units, budgetary establishments or auxiliary enterprises, cultural institutions and agencies statutorily engaged in the protection of cultural properties which are considered heritage monuments with an employment rate of people with disabilities higher than 6%; (iii) public and private non-profit agencies for which the sole object of business is social and health rehabilitation, education of people with disabilities or caring for people with disabilities; (iv) government and non-government universities, vocational universities, public and private schools, teacher training facilities, and correctional and resocialization institutions with an employment rate of people with disabilities higher than 2%; (v) employers in businesses that are in liquidation or bankruptcy.

In Greece, in an effort to encourage and facilitate employers in the employment of people with disabilities, the following are regulated.

Enterprises or entities of the broader public sector that will employ people with disabilities may be subsidized by the Labor Force Employment Agency (OAED):

i) for part of the compensation paid to people with disabilities,
ii) for part of the expense for the ergonomic configuration of their workspaces.

Provisions i) and ii) above are activated through the Labor Force's Employment Agency Special Program to support employers, with a grant that is equal to employers' social security contributions for the hiring of 2,000 unemployed Persons with Disabilities, Persons Recovered from Substance Addiction, Former Inmates, Juvenile Delinquents, or Juveniles at Social Risk, and a program subsidizing 50 Positions of Ergonomic Configuration of workspace for people with disabilities (Joint Ministerial Decision of the Ministers of Social Security and Social Solidarity and Finance, N. 38839/838/22.08.2017, OGG B'2963). The goal of the program is to create new work positions by subsidizing 70% of the salary costs and non-salary costs (up to EUR 700 per month for full-time workers and up to EUR 350 per month for part-time workers), corresponding to the sum of social security contributions, as an incentive for hiring 2,000 unemployed people from socially vulnerable groups. Fifty (50) of the above beneficiaries who will be accepted into the program for the creation of new work positions may be subsidized by the OAED at a rate of 90% for the cost of each ergonomic configuration of a workspace (adapted supportive technological installations, workspace adaptation, special equipment, acquisition of equipment for people with disabilities, etc.), up to the amount of two thousand five hundred (2,500) euros for each position.

The new Program that is running is addressed to private enterprises, partnerships, professional unions, non-profit civil law partnerships, social co-ops, joint ventures, and generally employers in the private sector and some in the broader public sector who have expressed an interest in being included in the program. The duration of the subsidy is twelve (12) months with the potential for extension for another 12 months and then again for another 12 months. After the termination of the subsidy, the enterprises must retain the employees for an additional period that varies according to the duration of the subsidy, from three (3) to nine (9) months.

Enterprises or entities of the broader public sector and people who display a marked interest in employing protected people under this law and in providing protection beyond what is stipulated by the law may be awarded appreciation, commendation and monetary prizes as moral rewards (L. 2643/1998). This specific provision of L. 2643/1998 remains inactive to this day.

The OAED may pay part or all of the expense required for their vocational training of people with disabilities referred by their employers in particular, for those people who companies would like to have trained in particular specialization (L. 2643/1998). Currently, there are no vocational training programs implemented for people with disabilities. Vocational training programs are being implemented by the OAED within the framework of the Account for Employment and Vocational Training (LAEK), but they pertain to all employed people, and not specifically to people with disabilities.

For people with disabilities, the OAED operates vocational training programs that are provided through special educational structures called Vocational Training Centers for People with Disabilities. There are two centers in which the responsible body is the OAED, the Standard Industrial Unit OAED Lakkias and the School of Vocational Training of People with Disabilities, and they are located in Greece's two largest urban centers, in Thessaloniki and Athens, respectively (Labor Force Employment Agency, 2018). The goal of the Standard Industrial Unit of Lakkias is the vocational training of adolescents with disabilities, mainly with mental disorders. The duration of the programs is three to four years. The goal of the School of Vocational Training of People with Disabilities is the training of adults with disabilities. The duration of the programs is two years.

Vocational training programs are also offered through secondary education vocational training structures – the Vocational Upper Secondary Schools and the Special Vocational Education and Training Workshops (L. 4415/2016, OGG A' 159). According to article 48, par. 4 of L. 4415/2016, the Vocational Upper Secondary Schools comprise classes A, B, C and G, and classes A, B, C as well. Pupils with disabilities and special educational needs who are enrolled, benefit from the academic and vocational training programs of the particular structure. The Special Vocational Education and Training Workshops are 6-year secondary education school units aimed at graduates of elementary or general education primary schools, up to the age of 16, with difficulties in taking part in the high school academic program and who have disabilities and/or special educational needs.

Additionally, vocational training programs are offered through Social Welfare Centers (L. 4109/2013, OGG A' 16), Physical Medicine and Rehabilitation Centers (L. 4025/2011, OGG A'228), centers for the support of the disabled (L. 3730/2008, OGG A' 262) that are state social care units, and welfare societies, charities, non-governmental organizations, social organizations, and welfare structures (L. 2345/1995, OGG A' 213) that are founded on private initiative.

The rights of employees/workers with disabilities in Poland and Greece

In Poland, the rights of people with disabilities are also guaranteed by the Constitution of April 2, 1997, (Journal of Laws No. 78, Item 483, as amended). It provides that no one shall be discriminated against in life or economically for any reason (Art. 32 point 2; accessed: 27.08.2018). In addition, the Act requires public authorities to ensure opportunities to prepare for work and social communication (Art. 69). Therefore, the rules in the field of labor law give special rights to people with disabilities. These people were granted various privileges, such as a shorter working day, a longer period of leave, lunch breaks, participation in rehabilitation or release from work to have specialized medical examinations. Employee rights for people with disabilities are governed by the Act of August 27, 1997, on social and vocational rehabilitation and the employment of people with disabilities, as well as by a number of implementing regulations to this Act (Journal of Laws of 2011, No. 127, Item 721; Journal of Laws of 2012, Item 986). It is worth noting that a person with a disability is entitled to all the rights under the Act from the date of commencing employment with the employer (Bereda-Łabędź 2002). For example, the working time of a person with a disability must not exceed eight hours a day and 40 hours per week. However, if a person with a disability been ruled to have a considerable or moderate degree of disability, the working time of this person may not exceed seven hours a day and 35 hours per week. This solution is guaranteed in two acts: Journal of Laws of 2011, No. 127, Item 721, and Journal of Laws of 1997 No. 78, Item 483. However, the use of this privilege does not happen automatically; it can only take place when the doctor in charge of the disabled individual issues a certificate indicating the advisability of applying shortened working time rules. In this context, it is worth noting that a person with a disability cannot be employed in night work and overtime. Pursuant to the provisions of Article 134 of the Labor Code, all employees who work at least six hours per day are entitled to a rest period, lasting at least 15 minutes. A person with a disability, regardless of the actual working hours, is entitled to an additional 15 minutes break in work. The time of these two breaks is also included as working time. A person with a severe or moderate degree of disability is also entitled to additional annual leave of ten working days per calendar year. The disabled employee acquires the right to the annual leave after working for one year. In addition, such people are entitled to an exemption from work for 21

working days in order to participate in rehabilitation, but only once a year. This does not mean that the disabled employee can use both the leave provided for rehabilitation and ten additional days of annual leave. In this case, the length of the leave (except for basic leave) shall not exceed 21 working days, as observed by Klimkiewicz (2011).

It is also worth noting that a person with a significant or moderate degree of disability is entitled to time off work in order to have a specialized medical examination or undergo therapeutic treatment, or in order to acquire orthopedic equipment when such matters cannot be done out of working hours. The employer of a person, who as a result of a workplace accident or occupational disease has lost the ability to work at the current workplace, is obliged to arrange a suitable work station not later than three months from the date that the person reports their availability for work. The exception is when it was demonstrated that the sole cause of the accident was a breach of health and safety regulations caused by the fault of the employee or due to the reported intoxication of the employee at the time of the accident.

In Greece, in Article 21, paragraph 6 of the Constitution (The Constitution of 1975, as revised by the Parliamentary Resolution of 27 May 2008) states that: "Persons with disabilities have the right to enjoy measures that guarantee their autonomy, integration, and participation in the social, economic and political life of the country." The emphasis in this article is on creating conditions to secure all the constitutionally guaranteed rights enjoyed by other citizens for people with disabilities, as mentioned by Koukiadis (2005). Additionally, in Article 22, paragraph 1 of the Constitution it is stipulated that: "*Work is a right and is protected by the State, which seeks to create conditions for the employment of all citizens and for the moral and material exaltation of the working ...population. All workers, regardless of gender or other discrimination, are entitled to equal pay for work of equal value.*" Based on Article 22, paragraph 1, the Constitution establishes the social right to work, which is ensured by both positive work and restrictive or prohibitive regulations, such as the prohibition of minors' work (Chrysanthakis 2007, pp. 167–275).

In accordance with the general constitutional guidelines for the social and vocational integration of people with disabilities, there are a number of privileges guaranteed for employees in the public and broader public sector. According to articles 50 and 53 of the 'State Code of Statement of Public Policies for Administrative Servants and Employees' (Law 3528/2007, Government Gazette A'26) and of article 27 of Law 4305/2014 (OGG A'237) there are special benefits for employees with disabilities that differ on the basis of whether the person who is entitled to the right is an employee with a disability, an employee with a husband/spouse with a disability, or an employee who is a parent of a person with a disability. In particular, an employee with a disability may be entitled to: (i) special leave with pay of up to twenty-two (22) business days a year; (ii) leave with pay of six (6) working days in addition to their regular leave each year; (iii) reduction of working hours by one (1) hour to two (2) hours per day; (iv) if he/she is a parent, ten (10) months of parental leave or part-time leave of one (1) hour if he/she has children aged from two (2) to four-and-a-half (4.5). An employ-

ee who has a husband or spouse with a disability may be entitled to: (i) special leave with pay of up to twenty-two (22) business days a year; (ii) a reduction of working hours by one (1) hour per day.

An employee who is the parent of a child with a disability may be entitled to: (i) special leave with pay of up to twenty-two (22) business days a year; (ii) a reduction of working hours by one (1) hour per day.

Support for people with disabilities entering and re-entering the labor market in Poland and Greece

Currently, special protection **in Poland** is granted to people with disabilities who want to return to the labor market. The relevant legislation is included in the Act of August 27, 1997, on the vocational and social rehabilitation and employment of people with disabilities (Journal of Laws of 2008, No. 14, Item 72 as amended). These provisions relate to the possibility of people with disabilities obtaining financial assistance in order to start and run a business. Thus, a person with a disability can raise funds: (i) to start a business; (ii) for a cash contribution required to open a social cooperative; (ii) to subsidize interest on loans taken out for business purposes; (iii) to reimburse social security contributions.

In addition, the unemployed or those seeking employment are granted support under the instruments of the labor market (as defined by Art. 11 of the Rehabilitation Act).

The first form of assistance is a grant from the PFRON to start one's own business. It is available for people with disabilities if they have not benefited from public funds before. Only people who are registered with the employment office as unemployed or seeking work can apply for this grant. The grant is also available to people with disabilities who have completed a series of training sessions and prepared a business plan approved by a group of specialists. Applications must be submitted to the governor of the place of residence of the potential entrepreneur. The amount of the grant may not exceed fifteen times the average wage. People with disabilities can use this form of assistance if they have not previously received non-repayable public funds for this purpose. One should keep in mind that a business can only be registered after the grant to start a business has been granted; otherwise, the grant will have to be repaid.

The second form of assistance to people with disabilities are loans taken out to continue a business or run one's own or leased farm (Article 13 of the Rehabilitation Act). Applicants may apply for grants of up to 50% of the interest on the bank loan taken out to continue operation. Applications must be submitted to the County Family Support Center. This support can be obtained by people who already run businesses or own or lease farms if they have not: (i) used the funds to start businesses, or such loans have already been repaid; (ii) received non-repayable funds for starting a business or farm, or conducted this activity for at least 24 months from the date of the receipt of the aid for this purpose.

Financial assistance may be granted only after the relevant agreement has been concluded. Unfortunately, this type of assistance may not be used by people who have already benefited from a PFRON loan or raised funds from the labor office to start a business and cannot be granted to people whose loans were fully redeemed or repaid.

The third form of support for entrepreneurs with disabilities is a refund of contributions paid to social security. Over the last 12 months, the amount of funding has been significantly reduced; however, this form of assistance is still available to all entrepreneurs with disabilities who apply to the PFRON for the reimbursement of a contribution by the last day of the month in which the time for the payment of social security contributions elapsed (Kobus-Ostrowska 2013, pp. 99–112). A person with disability submits to the PFRON an application for a refund of social security contributions for this month. For people with disabilities who run businesses, the Fund will pay their obligatory retirement and pension insurance contributions in the amount corresponding to the contribution base set out in Art. 18, paragraph 8, and Art. 18a of the Act of October 13, 1998, on the system of social security (Journal Laws of 2007, No. 11, Item 74, as amended).

The fourth and last form of support is for people with disabilities who are unemployed or who are seeking employment with the available services or instruments of the labor market (Article 11 of the Rehabilitation Act). As in previous years, training, internships, intervention work, and professional training in the workplace are financed by the PFRON through county labor offices, as observed by Paszkowicz, Ochonczenko, & Pietrulewicz (2008).

In Greece, a large number of statutes exist for the integration of people with disabilities into the labor market. However, a comprehensive response to the issue of the integration of people with disabilities into the labor market appears in Law 2643/1998 (OGG A 220), "Consideration for the employment of people in special categories," which constitutes the main law on issues for the professional integration of people with disabilities in the labor market. The protection afforded by L. 2643/1998 rests on the establishment of a legal framework regarding the mandatory nature of occupational integration for special categories of protected people, among which are people with disabilities in the public, broader public and private sectors, as well as to their continued protection during their working life, which is achieved through their equation with other employees, the restriction and control of reasons for their dismissal, and the regulation of specific issues, such as the ergonomic configuration of their workspace.

In particular, the subject of protection of L. 2643/1998 are categories of people for whom specific provisions are required in order to achieve their smooth occupational integration, and who are characterized as "protected people." One of the categories of "protected people" is people with a percentage of disability of at least 50%, who have limited potential for professional occupation due to any chronic physical or mental condition or impairment.

Based on the above law, entities of both the private and the broader public sectors, as well as public services, Public Law Legal Persons and Local Government Authori-

ties, are obligated to hire people with disabilities up to a specific percentage (under the so-called mandatory employment contract). Specifically, in regards to the private sector, Greek or foreign enterprises that operate in Greece in any corporate form, as well as their subsidiaries, are required to hire people with disabilities at a rate of 2% of the company's entire workforce, provided, of course, that they meet the requirements specified by law, i.e. that they employe more than 50 people and do not have negative balance sheets (losses) for the last two financial years immediately preceding the notice year. Entities in the broader public sector are required to hire people with disabilities at a corresponding rate of 3%. In addition to the above-mentioned rates, all entities of the broader public sector are required to hire people with disabilities as attorneys at a rate of 2% of the total number of attorneys employed by their legal departments (article 2, par. 6 of L. 2643/1998). Furthermore, entities of the broader public sector, public utilities, and banks are required to hire: a) for 80% of the vacant positions in their call centers, blind people with degrees from the blind telephone operator vocational schools (article 2, par. 5, case a) of L. 2643/1998); b) for one fifth (1/5) of the vacant positions for clerks/ushers, night watchmen, cleaners, janitors, gardeners and waiters, people from all the protected categories of L. 2643/1998, among which are included people with disabilities, provided they reside in the region where they are hired and are capable of executing the job assigned to them. In regards to the narrow public sector, public services, Public Law Legal Persons, and Local Government Authorities are required to appoint or hire protected people, without competition or selection processes, for specific positions that correspond to 5% of the total vacancy notices for each entity. The number of positions that corresponds to the above percentage is allocated to the category of disabled people at a rate of three eights (3/8), with priority over other protected categories. In addition to the above people, the narrow public sector is also required to hire the people that the broader public sector is required to hire, i.e., blind people with degrees from the blind telephone operator vocational schools for 80% of the vacant positions in each entity's call center, and here, too, one fifth (1/5) of vacant positions for clerks/ushers, night watchmen, cleaners, janitors, gardeners, and waiters are allocated to protected categories.

The employment contract for these mandatorily placed people is of indefinite duration, as is inferred from the purpose of L. 2643/1998, which is to secure lasting and long-term gainful employment for specially protected people. In particular, people with disabilities are placed as attorneys, office employees, or labor technicians, depending on each person's qualifications and the composition of the personnel employed by the business, operation, or entity. Subsequently, depending on their qualifications, the people placed are fully equated with all other personnel, regarding the terms of their employment, compensation, promotion, and overall working conditions.

The scope of L. 2643/1998 was expanded through article 11 of Law 3227/2004 (OGG A' 31), and modified with article 56 of Law 4186/2013 (OGG A' 193). In particular, the scope of L. 2643/1998, which pertains to employment contracts of indefinite duration, is expanded with article 11 of L. 3227/2004. It stipulates that people with disabilities

who are either hired under private-law employment contracts of limited duration for part-time employment, or who have been placed in work positions based on the OAED program and are on subsidized limited-time engagements, whom their employer wishes to continue to employ after the expiration of their contract or the termination of the program, are consideredto have been placed pursuant to L. 2643/1998. Consequently, it is clear that with the provision of article 11 of L. 3227/2004, it is easier for employers to continue employing PWD who have been successfully trained at their business and have proven that they can be productive. Meanwhile, legislation aims to facilitate the quasi-automatic conversion of limited-duration contracts into ones of indefinite duration, provided that the employer has expressed their explicit will for the continuation of such contracts. That is, the protection of L. 2643/1998 is expanded to include the continued employment of PWD after they have been hired for a limited time. It is, in essence, completely equating such people with those who were hired from the start pursuant to the provisions of 2643/1998. It is plausible that an employer will look on all PWD employed through a program favorably, so there will also be positions available for the mandatory hiring of PWD in order to cover the legally required percentage under the provisions of L. 2643/1998.

In the same context as the previous law lies Law 4440/2016 (OGG A' 224), according to which 10% of people hired in the public and broader public sectors should be people with a percentage of disability of at least 50%. Currently, there are no subsidy programs by the OAED or by the Ministry of Development for young entrepreneurs with or without disabilities to start a business on their own. The only motivation for people with disabilities to enter the free labor market is given by L.4430/2016 (OGG A'31). According to that regulation, people with disabilities and from other vulnerable groups can be founding members or employees in social, cooperative societies. These are societies with specific advantages, such as access to funding from the Social Economy Fund and the National Entrepreneurship and Development Fund (Article 14).

Conclusions

The distinguishing feature of the systems for the vocational integration of people with disabilities in Poland and Greece is the multitude of forms of support available. It would seem that, in Poland, the variety of forms of assistance for employers who want to hire people with disabilities, as well as for people with disabilities themselves, is so attractive that it would motivate employers to create new jobs for people with disabilities and people with disabilities to work. However, the employment rates in Poland are still very low in comparison to other European countries. The main reason for that conclusion probably lies in the fact that the recent economic crisis has affected Central and Eastern European Countries more dramatically in comparison to other European Countries, like Western ones (Mussida & Sciulli 2016). Unfortunately, the present situation is particularly difficult because the law does not work due to the

all-encompassing crisis. Businesses create jobs for people with disabilities in the protected market rather than in the open market. This situation is very difficult for policymakers. On the one hand, the existing procedures must be simplified, and on the other, employers must be sure that the provisions of the law will not change against them in the future. In Greece, it is obvious that the state emphasizes to employers the mandatory vocational integration of people with disabilities. There is a lack of active policy measures to actually motivate employers to hire people with disabilities; the same is true when it comes to motivating people with disabilities to get involved. Greece is one of the countries where the economic crisis has greatly worsened the employment rates of people with disabilities (Grammenos 2013). High unemployment rates affect the labor force and lead to fewer chances for people with disabilities to get a job. Additionally, it is noteworthy that, in Greece, there is a high percentage of people with disabilities living at risk of poverty and social exclusion (Grammenos 2013). Both in Poland and Greece, it is necessary to change the mentality of potential employers so that they could see an efficient worker in someone with a disability.

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Streszczenie

Osoba z niepełnosprawnością w kontekście prawodawstwa w Polsce i Grecji

W artykule przedstawiono rodzaje wsparcia dostępne dla pracodawców zatrudniających osoby niepełnosprawne, a także możliwości wejścia na rynek pracy, założenia firmy i utrzymania jej. Tekst został wzbogacony o porównanie praw pracowniczych osób niepełnosprawnych w analizowanych krajach. Dokładne zbadanie ustawodawstwa obowiązującego w Polsce i Grecji doprowadziło nas do licznych i interesujących wniosków. I tak, pomimo wielu pozornie atrakcyjnych form wsparcia dla pracodawców i osób niepełnosprawnych dostępnych, wciąż zauważamy, że wskaźnik aktywności zawodowej osób niepełnosprawnych jest znacznie niższy w Polsce i Grecji niż w wielu innych krajach europejskich. Jaka jest główna bariera dla aktywizacji osób niepełnosprawnych? "Chociaż odpowiedź na to pytanie jest z pewnością wielowątkowa, wydaje się uzasadnione twierdzenie, że złożoność prawodawstwa, szereg postanowień w dziedzinie pomocy publicznej i ewentualne nowe niekorzystne zmiany w prawie pracy skutecznie zniechęcają pracodawców do tworzenia miejsc pracy dla ludzi z niepełnosprawnościami.

Słowa kluczowe: osoby z niepełnosprawnościami, wsparcie, pracodawca, rynek pracy, Polska, Grecja

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Administrative Capacity as a Constraint to Fiscal Decentralization The Case of Romania and Poland

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Abstract

This paper considers the problem of administrative capacity as one of the main requirements that the accession countries seeking EU membership had to meet, and as a prerequisite to the decentralization of their public sectors and public finances. The selected decentralization problems are analyzed using the cases of two countries: Romania and Poland. The results of a theoretical and practical evaluation of administrative capacity as a likely obstacle to fiscal decentralization are presented taking account of the different levels of decentralization in Poland and Romania. A comparative analysis of Romania and Poland shows that administrative capacity can be a constraint for fiscal decentralization. In Poland, the main problem is that the local authorities have not yet been granted powers over taxes that are more complicated to administer in legal and financial terms. Romania has the problem of the incomplete devolution of powers and the limited financial independence of local governments, which basically means that the principle of subsidiarity is insufficiently implemented.

Keywords: public administration, local taxes, fiscal decentralization, local self-government

JEL: H70, H71, H77

Introduction

Romania and Poland are two post-communist countries that launched determined efforts to establish the rule of democracy, introduce market economy principles, and decentralize their administrations and public finances. Even though Poland is more advanced on the path of financial decentralization, the level of devolution, and the fiscal autonomy of local governments are still limited. In Romania, public finances and the organization of administration are still strongly centralized. The main source of funding for local governments in both countries is property taxes and "shared taxes" supported by general grants and specific grants from the state budget, special funds, and EU funds.

In both Poland and Romania, fiscal decentralization has encountered many problems. Some of them are political while others are objective, for instance, organizational and administrative constraints, which are partly due to the unitary system of government in the two countries. This study focuses on the administrative constraints as an objective obstacle arising at different stages of decentralization. A comparative analysis of local finance systems in Poland and Romania is performed to formulate synthetic conclusions about administrative constraints associated with the studied aspects of fiscal decentralization. The study's interest in decentralization is due to the fact that of the two aspects of local financial autonomy – collecting revenue and spending – the first one tends to be more problematic. The main thesis tested in the paper is that administrative capacity can be a barrier at different stages of fiscal decentralization: lower in Romania and higher in Poland. The conclusions from the research are formulated, taking account of the fact that Poland and Romania are at different points of fiscal and administrative decentralization.

While local governments' own revenues represent a considerable proportion of their total incomes in Romania, their finances are still strongly dependent on the central government. The 2016 expenditures and revenues of Romanian municipalities accounted respectively for 28% and 30.5% of total public expenditures and revenues. In the period 2015–2016, they were estimated at 8.9–10.02% of Romanian GDP. Poland's rates were more favorable, but the country's local finance system is criticized for a large number of revenue transfers from the state budget and for local shares of PIT (Personal Income Tax) and CIT (Corporate Income Tax) revenues with the status of local authorities' own revenues. The research presented in this paper uses quantitative analysis to mainly study the local financial system and the challenges faced by Romania as a less advanced country in the area of decentralization.

An argument for the paper is the scarcity of the analysis of administrative capacity in relation to legislative changes and the effects of fiscal decentralization. In this context, the paper aims to investigate the scale of change in the system of financing local government and its relationship with the equalities and differences between different public administration levels. For this purpose, our objectives were the following: (a) to analyze changes in the fiscal decentralization system; (b) to investigate

if administrative capacity should continue to be considered a solution to continue and deepen the process of fiscal decentralization, and (c) to evaluate the influence of legislation changes on the local tax system and the prerogatives of local authorities in this area.

The outcomes will be valuable to both policy and decision-makers in understanding the effects that fiscal decentralization can have on the development of a coherent local fiscal system. Moreover, the present paper should bring knowledge of both the provision of local tax systems and the valuation and taxation of property, and the better management of distributing public money.

This article is both theoretical and empirical. It consists of five parts: an introduction, a theoretical part concerning administrative capacity, then the legal framework of public administration and public finance in both countries, and statistical analysis of the scope of local taxes in Romania and Poland. The article ends with conclusions.

Administrative capacity: the meaning of the term and its practical importance

The administrative capacity of local government was one of the core elements of the EU enlargement process. This concept can be used as a theoretical framework for the assessment of the current stage of local government performance in Romania and Poland. Since 1997, administrative capacity has grown in importance and complexity as one of the main requirements that states have to meet in the process of joining the EU. In these circumstances, the European approach to administrative capacity is related to the implementation of the acquis in various areas, such as the single market, competition, and so on. From a wide perspective (OECD 1995), administrative capacity "is the process by which individuals, groups, organizations, and societies increase their abilities to (i) perform core functions, solve problems, define and achieve objectives; and (ii) understand and deal with their development needs in a broad context and in a sustainable manner."

However, the concept of capacity development acquires a new meaning "that suggests a shift from building capabilities towards enhancement and strengthening of existing capacities" (Dragoș and Neamțu 2007, p. 646). Administrative capacity requirements should lead to the success of institution-building in post-Communist states' public administrations. The Commission defines Institution-building as a "developing the structures and systems, human resources and management skills needed to implement the *acquis*" (Dimitrova 2002, p. 178). In brief, administrative capacity assumes the management capabilities of local governments (Petak 2006, p. 85), which means policy management, resource management, and program management (Gargan 1981, p. 652). According to El-Taliawi and Van Der Wal (2019, pp. 243–257), administrative capacity is necessary for both achieving public policy success and preventing poli-

cy fiascos. Capacity is a continuous process (with the country's historical trajectory), which includes enhancing administrative autonomy and competence, arrangements incentivizing coordination and collaboration, safeguarding with adequate oversight and control.

Administrative capacity seems to be a big challenge of policy design over time and contextual dimensions of the space (Howlett 2019, pp. 275–284).

The concept of "administrative capacity" acts to rule the distribution of competencies to the local level. It was argued (Dragoș and Neamțu 2007, p. 639) that the use of this concept has been helpful, because "decentralization policy looked at all local government entities as equal holders of decentralized competencies, although their administrative capacity was quite different." On the other hand, ensuring the same quality of public services requires the transfer of the existing, central-managed competencies to the level of local government entities that are able to manage the competencies satisfactorily.[1]

The reform of decentralization managed in Romania in 2006 showed that this process was an unfinished project: local units had to provide the means for some public service, but they had no opportunity to organize them.[2] In other cases, the transfer was incomplete because of the lack of financial means to realize the task.[3] In Poland, there is a problem with insufficient local taxes and transfers.

Administrative capacity also varies depending on the size of the community. The size of local government entities is one of the core elements in assessing the basic unit's effectiveness. Therefore, the different levels of government must interact closely in order to exercise both their responsibilities and tasks by the lowest level of government. The distribution of competencies is selected in connection with the efficiency of the public service supply in a decentralized manner and the size of local government entities. The allocation of responsibilities should be accompanied by the transfer of the corresponding financing, and the authorities should consider rationalizing the public expenditure, clarifying and strengthening the tasks between government tiers.

Communities need to make a concerted effort to bridge this gap, as they are forced to find a way to fund the basic legal functions because all formulas in the equalization system are based on income tax, population, county area, and urbanized area. No weight is given to any indicators of expenditure needs like population density, geographical position, or development level. Income tax per capita is used in most formulas as a proxy for economic development. Therefore, it is almost impossible for these communities to generate their own resources to sustain development. In this context,

1 In Romania, when local public authorities from communes do not have the capacity to receive such competencies, the next level (county) will receive the competencies instead.

2 For instance, schools are maintained by the local public authorities, but when a new school is established, the management of the school and the curriculum are centralized.

3 For instance, national roads that pass the communes and cities should be maintained by the local authorities, even though they are used by the nation as a whole and not only by the inhabitants of that city/commune.

efforts should be made towards creating joint bodies between local government entities that could better manage the supply of local public services. This solution would solve the financial aspect of local expenditures and would also strengthen the capacity of the entities by sharing the tasks. Unlike Romania, in Poland, the equalization system is designed to allocate more funding to poorer municipalities. It was argued (Kulesza and Sześciło 2012, p. 499) that this "mechanism has become an instrument of the cohesion policy and raises concerns in wealthier regions and municipalities that are reluctant to support less developed areas". These circumstances emphasize the capacity of local government entities to exercise their competencies in the interests of the community and the degree of their dependence on or autonomy from the central or regional government.

Three main dimensions of tax autonomy and competencies in public revenues have been identified in the literature (Musgrave and Musgrave 1980, Ahmad and Brosio 2015):

- Which level of government has the right to choose the taxes that this given level can impose?
- Which level of government can legislate over the structure of the tax bases and which level has the discretion to set the tax rates?
- Which level of government is put in charge of administering the individual taxes?

The competencies which can be assigned to different levels of public authorities in the area of taxes are also formulated as (Borodo 1997, p. 17): the competence to legislate, the competence to take over the tax revenue, and the competence to administer the various taxes. In the case of both countries, we have the problem of limited decentralization and limited "real" local taxes. In Poland and Romania, shared taxes play an important role in local revenues, but in this case the local authorities have no competence to impose the tax and to affect its structure.

Decentralization of public finance. The legal framework in both countries

The system of financing local government in Romania is based on Law 273/2006 on local public finance. The law regulates the procedure of elaborating, approving, and executing the local budget and the most important aspects related to the structure and criteria for the transfer of quotas and amounts correcting imbalances that occur at the local level. These regulations are supported by the Tax Code,[4] Title IX provisions, which set out the legal framework of the structure of taxes and local fees in Romania. According to the Romanian regulations in force, there are taxes and fees that are covered exclusively by the local budgets, others that are covered by the state budget only, as well as some which are shared by the local and state budgets.

4 Adopted by Law 227/2015.

Local budgets' own revenues represent the main category because all local budgets have such incomes. These can be divided into three main categories:

1. Local taxes and fees – taxes established by the Fiscal Code.
2. Rates from income tax – the most important local revenues.
3. Other local own revenues.

The Romanian local budgeting system consists of 41 county budgets and over 3,000 municipality budgets (including the General Budget of the Bucharest Municipality and the six separate district-level budgets corresponding to the six administrative parts of the Bucharest Municipality). Romanian counties are the administrative-territorial units at the intermediate level, while communes, towns, and municipalities (cities) form the local administrative level. From a budgetary point of view, the tasks are clearly separated by law.

The main categories of own local revenues are presented below:

- Building tax.
- Land tax.
- The fee on means of transport.
- Hotel fees.
- The tax on shows.
- Fee for the issuance of certificates, permits, and authorizations.
- Fee for using means of advertising and publicity.
- Rates from income tax.
- Property revenue.
- Revenue from service supplies.
- Fines and penalties.
- Capital revenue.
- Financial operations.

The preponderance of own local revenues in total local revenues varies greatly. In many situations, the excluded amounts of VAT transferred from the state budget and subsidies from other public budgets (like the unemployment budget or health insurance budget) are less important than the own local revenues.

1. Local taxes and fees. Every person – be it a corporate entity or a natural person – who holds the ownership title in a building in Romania has to pay an annual tax on that building. The tax on building applies to all entities that use a public or private property asset of the administrative and territorial unit. The Tax Code makes a distinction[5] between these taxes depending on whether the taxpayer is a corporate entity or a natural person, which is specific only to this type of tax and not applicable to other categories of local taxes and fees.

5 For residential buildings and annexes which are the property of natural persons the tax on buildings is calculated by applying a 0.08–0.2 percent on the taxable value of that building; non-residential buildings which are the property or are held by corporate entities are subject to a tax on buildings to be calculated by applying a percentage of 0.2–1.3, inclusively, on the taxable value of that building.

The amount of local taxes and fees is determined by the decision of the local council and is payable on a yearly basis, in two installments, the latest on March 31st and September 30th, respectively.

Similarly, every corporate entity or natural person who holds the ownership title to a piece of land has to pay a tax on that land to the local budget in the jurisdiction where the land is located. The land tax is calculated based on its surface, the rank of the locality where it is located, and its surface and category, as per the classification provided by the local council based on scoring grids.

Any person that owns a means of transport that is required to be registered in Romania owes an annual fee for the means of transport. The income from the tax on specific means, penalties for unpaid fines and the applicable fines may only be used for maintenance, repair, and construction works for local and county roads. Sixty percent of these amounts represent income to the local budget, and the remaining 40% represents income to the county budget.

Each person who needs to obtain certificates, permits, or authorizations is required to pay a fee to the relevant local public administration department before it is issued. The fees due for issuance of urbanism certificates and building permits by the chairmen of county councils, which are subject to the approval of the mayors' offices of communes, are transferred as follows: 50% goes to the local budgets of the communes and 50% to the local county budget.

Every person who benefits from advertising and publicity services in Romania based on a contract or other arrangement with another person has to pay a charge, except for the advertising and publicity services that are provided through written and audiovisual mass dissemination means.

The organizers of artistic performances, sporting competitions, or other entertainment activities in Romania have to pay tax on shows. The tax on shows is payable to the local budget of the administrative and territorial unit where the performance, competition, or leisure activity takes place.

The local and county councils and the General Council of the Bucharest Municipality, as appropriate, may apply special fees for the proper operation of some local public services dedicated to natural persons and corporate entities as well as for the promotion of tourism in localities. For instance, the Tax Code allows tourism operators to charge some amounts for tourist accommodation. The local councils, the General Council of the Bucharest Municipality or the county councils, as appropriate, may levy fees for the temporary use of public places and visits to museums, memorial houses, historical, architectural and archeological monuments, and the like.

2. Rates from income tax. According to Law 273/2006 on local public finances, as subsequently amended and supplemented, income tax is cashed in the state budget, but every month, 88% of the amount collected in the previous month is transferred to the local budgets: 47% goes to the budget of cities, towns, and communes, 13% is transferred to the county budget, and 22% is kept in a special account in order to balance the local budgets.

The 22% rate is divided into two categories: 27% is transferred to the county budget, and the remaining 73% goes to the local budgets of cities, towns, and communes. To do this, the following rule applies: 80% is distributed in two stages by the director of the county's public finance directorate and 20% is distributed by the county council's president.

*3. **Other local own revenues***. Other local own revenues include property revenues, revenues from service supplies, fines and penalties, capital revenues, and revenues from financial operations.

The revenue of municipalities in Romania (communes, cities)

According to article 5 of the local public finance Law 273/2006, the localities[6] of Romania, i.e., those who have self-administration powers – communes, cities and municipalities, form their budget from (1) own income (i.e., fees, contributions, other payments, other income, and quotas distributed from the income tax), (2) amounts distributed from some income to the stage budget, (3) subsidies from the state budget and other administrations, (4) voluntary transfers other than the subsidies, and (5) various financial operations.

Hence, in addition to their own income, the administrative-territorial units collect also income from the central level, that is, from the state budget. Although the quotas and amounts distributed down from the income tax are formally included in the category of own income (which is fundamentally correct because they are "obtained" locally), in fact, these amounts go to the state budget, and then they revert to the local budgets under this title. One thing to be outlined is that that corporate income tax is not included in the local budget's income as its own income or as a distributed amount or quota. Other income which comes from the central budget consists of the amounts distributed from VAT collections and the subsidies.

In summary, the local budgets include two large categories of income: the own income and the amounts transferred from the central administration; in turn, each of these categories is fed from several sources of funds.

According to article 454 of Law No. 227/2015 on the Tax Code the category of taxes and fees that join exclusively the local budget includes: the tax on buildings, the tax on lands, the tax on vehicles, the fees for certificates, permits and authorizations, the fees for advertising and publicity, the tax on shows, as well as other special or local fees.

However, although collected by the local budget of municipalities, part of the tax on vehicles and the fees for certificates, permits, and authorizations are transferred to the county budgets.

6 By "locality" we will understand any human settlement that has its own administrative capacity. In Romania, we include the concepts of municipalities, towns and communes.

Revenue of counties in Romania

Romanian county budgets are not formed directly from taxes and fees paid by the citizens. As indicated below, part of the local taxes and fees are distributed between counties and localities (such as the tax on some cargo carriers, out of which 60% represents income to the local budget and 40% is transferred to the county budgets); however, most of the county revenues come from the state budget (amounts distributed from the income tax and amounts distributed from VAT collections).

The counties obtain their income from sources similar to those used by the localities, that is: (1) own income, (2) amounts distributed from some income of the state budget, (3) subsidies from state budget and other administrations, (4) voluntary payments, other than subsidies and (5) various financial operations.

Just like in the case of localities, counties obtain their income from two large sources of funds: their own income and the income offered by the central administration, each with their own sub-categories of sources of funds.

Unlike the municipalities' (cities, communes) own income, a county's own income does not include the amounts collected from exclusive local taxes and fees because they are transferred solely to the local budgets. The most important source of a county's "own" income continues to be the percentages and amounts distributed from the income tax collected by the state budget and the fees for the use of roads, concessions, leases etc.

As regards the county's income from central administration, they are mainly comprised of amounts distributed from VAT amounts collected at the national level (the amount of which is decided, as with localities, in the Law on the annual state budget) and subsidies.

Revenue of local budgets in Poland

At present, self-government in Poland has a three-tier structure, which comprises municipalities (gminas), counties (powiats), and regions (voivodships). They have been shaped as a result of the decentralization that has been going on for over 25 years. In its major part, the system of financing the territorial self-government is based on the Act of 13 November 2003 on the Revenues of Local Government Units. The Act of 27 August 2009 regulates the principles of the financial economy on Public Finances, while the structure of taxes and local fees are regulated by several separate Acts of Law. In short, the system of local government finance in Poland has some characteristic features.

As a result of the vertical distribution of tax revenues in the country, municipalities were allocated taxes that were relatively less efficient, the most important of which for local budgets being the property tax. Local taxes were not assigned to the sub-national tiers of government (counties and regions). Their budgets are mainly funded from the local shares of PIT and CIT revenues and fees for administrative services that have

limited fiscal importance. Common taxes were used in the vertical distribution of revenues: personal income tax and corporate income tax. As a result, shares of the local government across all the tiers in PIT and CIT play an important role. Moreover, according to Polish law, shares in PIT and CIT are treated as own revenues. In counties and regions, their share in income tax is the basic source of their own revenues (for more, see: Guziejewska 2013, 2015).

Local taxes, "common" taxes, and fees are the most important items among municipalities' own revenues. The number of tax titles in municipalities' sources of revenue is quite substantial. In the system, there are also many local fees (for example, stamp duty or administrative charges), which are, in fact, local taxes.

Municipalities obtain the full amount of:

- The real estate tax.
- The agricultural tax.
- The forest tax.
- The tax on transport means (vehicle tax).
- The tax on inheritances and gifts.
- The tax paid by very small firms in the form of a tax card.
- The tax on civil law transactions.

The three last taxes are the source of the municipal budget, but they are collected and administrated by state tax offices. This limits, in different ways, local tax autonomy. The problem has been highlighted by Teszner (2012, pp. 316–319), who observed that some fiscal bodies in the Polish tax administration have limited tax powers for no explainable reason. At the commune level, mayors have no influence on the amounts of revenues collected by tax offices from the three taxes. The Ministry of Finance and some advocates of the doctrine maintain that this solution is determined by the intricate design of the taxes, which require greater competencies to be assessed, collected, and administered than the municipalities and their staff have. It is also argued that tax powers should sit with the central agencies because they guarantee greater consistency of tax decisions and interpretations of tax laws compared with a solution where such powers are dispersed among many local authorities. It seems rational, however, that local authorities are given control over the revenue aspects of taxes that are levied by the state but which are used to fund local budgets (including tax remissions, tax deferments, tax installment payment agreements, etc.). It is also notable that as municipal agencies have long administered many local taxes of comparable complexity and have issued thousands of tax decisions, they have certainly accumulated sufficient experience to take over responsibility for the three taxes. The current, dichotomous structure of tax administration increases the costs of tax collection, delays transfers of funds to lower levels of government, complicates the system of tax reliefs, and reduces the fiscal autonomy of local authorities. Given that, greater devolution of tax powers to local authorities is not only an advisable but also a necessary condition for stronger fiscal decentralization in Poland.

The scope of local taxes in Romania and Poland: selected aspects and statistical analysis

The analysis of local government funding sources and local taxes is based on data from the period 2015 to 2017. The true level of fiscal autonomy in Romania is difficult to determine because data on individual local taxes are not available. The fact that only aggregate statistics for the whole local government sector in Romania can be obtained (preventing the analysis of its tiers) is a sign of the strong centralization of the public finance system in this country; likewise, a small proportion of local own revenues (narrowly defined as local taxes and fees) is estimated at only around 16%. The quotas and amounts deducted from income tax are treated as local governments' own revenues, which seems controversial from the perspective of the theory of fiscal federalism.

Table 1. Selected local self-government revenues in total revenues in Romania (million RON and percentage)

Structural indicators	2015	% of total	2016	% of total	2017	% of total
Total	61.463	100	59.511	100	62.782	100
Subtotal own revenues	26.699	43.5	27.850	46.8	30.692	48.9
1. Taxes, fees, contributions	9.586	15.6	9.927	16.7	10.461	16.7
2. Quotas and amounts deducted from income tax	17.113	27.9	17.923	30.1	20.231	32.15
Sums deducted from value added tax	21.226	34.5	20.520	34.5	23.549	37.4
Transfers from state budget	8.193	13.3	9.358	15.7	6.518	10.4
Other revenues (Amounts received from the EU/other donors on account of payments made and pre-financing)	5.345	8.7	1.790	3.0	2.023	3.2

Source: Curtea de Conturi a României, Sinteza cu privire la rapoartele privind finanțele publice locale pe anul 2016 întocmite la nivelul județelor (p. 6), / Court of Auditors of Romania, Synthesis of reports on local public finances for 2016 drawn up at the level of the counties, http://www.curteadeconturi.ro/Publicatii/Raportul%20public%20pe%20anul%202017.pdf (accessed: 14.05.2019); http://www.curteadeconturi.ro/Publicatii/Rapoarte_Locale_2016/SintezaLocale2016.pdf (accessed: 14.05.2019).

Romania has successfully managed to achieve the decentralization of public authorities. However, a major challenge for local authorities is the absence of funds.

The main causes of this phenomenon may be summarized as follows:

Most of the fiscal income collected locally goes to the state budget, not to the local budget

First and foremost, there is the profit tax, which accounts for approximately 13% of the total income to the state budget for 2016, which remains entirely in the hands of the central bodies.

Second, there is income tax (which accounts for more than 24% of the total budgetary income for 2016); instead of being used by the local communities (which would

further contribute to the central budget), income tax is transferred to the state budget and then partially reverted to the local budgets.

The trend is falling regarding quotas distributed from the income tax, which are directed to the local budgets. This is partly because of the amendments made to the Law on local public finance by equal ranking laws partly because of annual laws on the state budget (which are lower rank laws). The (annual) law on the state budget, the one that amends the Law on local public finances, is fundamentally unpredictable and surprising every year so that the local authorities are virtually unable to build a solid forecast of the amounts they can count on in order to "balance the local budgets." These amounts basically consist of percentages of the income tax and flat amounts from VAT collections; furthermore, the applicable percentage of the income tax is never the same, and the flat amounts from VAT collections are never predictable or computable, depending on the transparent criteria.

There is also a falling trend regarding part of the other fees which are dedicated to the local budgets, such as the amounts collected from judicial stamp fees, 70% of which was initially placed in the hands of the local authorities. As of January 1st, 2014, only 55% of these amounts are made available to the localities, with the remaining 45% transferred to the state budget.

Table 2 shows local revenue sources in Poland by tier of government and type of municipal tax. As can be seen, in addition to the sources that are discussed above, there is also a large number of minor taxes characterized by low fiscal efficiency, which is probably determined by their design (the type of taxpayers) but which may also arise from the limited capacity of local administration.

Table 2. Percentage of selected local self-government revenues in total revenues in Poland

Structural indicators		Total (PLN million)	Gminas (%)	Cities with poviat status (%)	Powiats (%)	Voivodships (%)
Total	2015	199,019	44.1	35.5	11.8	8.6
	2016	213,669	47.6	34.8	11.2	6.4
	2017	229,879	48.4	34.2	11.1	6.3
Subtotal own revenue	2015	103,441	42	43.3	7.7	6.9
of which	2016	106,683	42.3	43.1	7.8	6.8
	2017	113,245	42.4	42.7	8	6.9
Share in income taxes	2015	45,176	35.5	42.1	9.6	12.8
(PIT and CIT)	2016	48,549	35.9	41.8	9.6	12.6
	2017	53,267	36	41.5	9.5	12.9
Tax on real estate	2015	20,171	60.6	39.4	x	x
	2016	20,774	60.8	39.2	x	x
	2017	21,829	61.3	38.6	x	x
Agricultural tax	2015	1593	98.5	1.5	x	x
	2016	1513	98.4	1.6	x	x
	2017	1485	98.6	1.4	x	x

Structural indicators		Total (PLN million)	Gminas (%)	Cities with poviat status (%)	Powiats (%)	Voivodships (%)
Tax on means of transport	2015	1015	68.6	31.4	x	x
	2016	1055	68.7	31.3	x	x
	2017	1092	68.9	31.1	x	x
Tax on civil law transactions	2015	1749	43.9	56.1	x	x
	2016	2172	44.4	55.6	x	x
	2017	2551	40.1	59.8	x	x
Stump duty	2015	409	37.9	62.1	x	x
	2016	430	38	62	x	x
	2017	461	36.6	63.5	x	x
Revenue from property	2015	7463	35.6	58.1	4.1	2.2
	2016	7354	38.8	54.5	4.2	2.5
	2017	7439	42.1	51	4.2	2.7
Funds for financing own tasks from other sources	2015	1384	74.8	14.7	6.6	3.9
	2016	561	52.8	23.4	15.3	8.7
	2017	614	57.5	22	15.2	5.2
Specific grants	2015	44,235	42.3	26.9	12.9	17.9
	2016	53,949	56.2	26.1	9.7	8
	2017	62,353	57.7	24.7	9.7	7.7
General subvention from the state budget	2015	51,343	49.5	27.1	19.6	3.8
	2016	53,036	49.7	27.3	19.3	3.7
	2017	54,281	49.9	27.2	18.9	3.0

Source: own calculations and *Statistical Yearbook of the Republic of Poland*, Warsaw 2016–2018.

Countries where advanced fiscal decentralization is more advanced are faced with the problem of local tax competition. In Poland, the problem has been addressed in the work on local fiscal policies by Swianiewicz and Łukomska (2016, pp. 37–42). As the law stands, Polish gminas can grant additional reliefs and exemptions from local taxes and set tax rates below the maximum rates enacted by the national parliament, but they have no influence on the design of PIT or CIT. Despite this uniform legislative framework, they found differences between fiscal policies pursued by individual gminas and reported that the fiscal burden in a gmina is influenced by the level of taxation in contagious units. However, contrary to the authors' expectations, the statistical evidence of tax competition is strongest not in the case of tax with a mobile tax base, but in the case of tax on agriculture, followed by tax on housing properties. This suggests that the competition is more related to the 'yardstick competition' and electoral motives than the classic competition for a mobile tax base.. There is very little competition for a mobile tax base.

Apart from statistics, another problem is real citizens' interests and rights with reference to public administration. Analyses of mechanisms and instruments of participatory democracy in Romania shows the gap between the decision making transparency and public administration activities (see: Alexandru 2018, pp. 146–157).

Conclusions

The comparison of public finance systems in Poland and Romania, which have achieved different stages of decentralization processes, shows that administrative capacity may hamper or even inhibit decentralization as well as fiscal decentralization. The evidence of reform shows that the administrative capacity requirements did not lead to successful decentralization or institution building. The discussion above emphasizes the significance of administrative capacity in two EU countries at different levels of decentralization and enriches the existing literature, which concentrates mostly on two broader groups of countries: developed and developing countries. The added value of the article is both theoretical and practical. It enriches the theory of fiscal federalism in the context of unitary countries, and it provides officials and politicians with guidance for implementing some strategies in practice. Romania can learn from the Polish lesson in the area of local tax administration processes.

There is still a long way to go before fiscal decentralization is achieved in Romania. Although assumed legislative, the principle of financing has no consistency anymore due to the equalization system. This outdated system abounds with unnecessary complications and leaves room for arbitrage in the allocation of public money. Basically, the public money is distributed from top to bottom, from the center to the periphery, although they are collected locally and are produced by local, sub-national tiers. Reversing the current system of distributing public money, so that it circulates from the bottom up, from where it is produced to the higher levels, could correct many errors of the current system.

It seems that the main problem in Romania is the lack of political will to continue financial decentralization as well as a large number of 'shared taxes' that are levied and administered by the central government. The degree to which the situation is caused by limited administrative capacity is difficult to determine. The delay in fiscal decentralization is caused by the presumption of local authorities' incompetence, which also hinders and prevents the full and true implementation of the principle of subsidiarity underlying the European philosophy of decentralization. A symbol of the strong centralization of the public finance system in Romania is the unavailability of financial data on individual tiers of local government.

In Poland, there is the barrier of insufficient devolution of tax powers to the lower levels of government. In particular, local authorities have no jurisdiction over taxes that are more complicated in legal and financial terms, and they have very limited rights to design municipal taxes and set the levels. Their prerogatives in this area are limited to reducing the maximum tax rates set by the central government and offering taxpayers reliefs and exemptions. The system is known in Poland as a limited power of taxation. Romania can draw on the Polish experience in the area of real estate tax and shared taxes; if the fiscal autonomy for these instruments is very limited, many economic, social, and political problems arise. This study also reinforces the hypothesis about the great importance of income independence in decentralization processes

and shows the asymmetry in the distribution of funds between Polish municipalities, powiats, and voivodships (see Table 2). The redistribution is also based on the administrative capacity of the levels of local self-government.

In both countries, limited administrative capacity is responsible for the failure of various policies and reforms, including sectorial decentralization. It seems that the guidance of the EU regarding institution-building did not lead to the construction of "lasting and stable institutions."

On the one hand, the lack of a strong and coherent model of the EU administrative capacity was identified, and on the other hand, there is EU ignorance of the preferences of domestic political actors regarding the institution-building exercise. The construction of administrative capacity still needs a consensus that represents the will of the politicians and the public; otherwise, the EU's conditionality will continue to lead to frequent changes in the laws and uncertainty.

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Streszczenie

Możliwości administarcyjne jako ograniczenie decentralizacji fiskalnej. Przypadek Rumunii i Polski

w artykule zajmujemy się problemem możliwości administracyjnych jako jednego z głównych wymogów , które spełnić musiały kraje w procesie przyłączania się do Unii Europejskiej i decentralizacji sektora publicznego i finansów publicznych. Przedstawiamy wybrane problemy decentralizacji w dwóch krajach: Polsce i Rumunii. Celem artykułu jest przedyskutowanie teoretycznych i praktycznych elementów dotyczących możliwości administracyjnych jako bariery decentralizacji fiskalnej jak również porównanie ich z poziomem zaawansowania decentralizacji. Oba kraje różnią się bowiem zakresem i stopniem procesu decentralizacji

Z analizy porównawczej procesów decentralizacji o różnym stopniu zaawansowania wynika, że możliwości administracyjne mogą być elementem hamującym decentralizację fiskalną w różnych aspektach omawianych procesów. W przypadku Polski barierą jest dalsza decentralizacja podatków gminnych o bardziej złożonej konstrukcji prawno-finansowej. W Rumunii głównym problemem pozostaje głębsza decentralizacja kompetencji oraz faktyczna niezależność finansowa samorządu terytorialnego. W istocie chodzi więc, w tym kraju, o faktyczną implementację zasady subsydiarności.

Słowa kluczowe: administracja publiczna, podatki lokalne, decentralizacja fiskalna, samorząd terytorialny