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## **From the Editorial Committee**

We are giving you the next 26th (2/2019) issue of the Quarterly of the Faculty of Management of the Rzeszow University of Technology entitled “Modern Management Review”.

The primary objective of the Quarterly is to promote publishing of the results of scientific research within economic and social issues in economics, law, finance, management, marketing, logistics, as well as politics, corporate history and social sciences.

Our aim is also to raise the merits and the international position of the Quarterly published by our Faculty. That is why we provided foreign Scientific Council, as well as an international team of Reviewers to increase the value of the scientific publications.

The works placed in this issue include many assumptions and decisions, theoretical solutions as well as research results, analyses, comparisons and reflections of the Authors.

We would like to thank all those who contributed to the issue of the Quarterly and we hope that you will enjoy reading this issue.

With compliments  
*Editorial Committee*



Maria HĂMURARU<sup>1</sup>  
Adriana BUZDUGAN<sup>2</sup>

## THE POTENTIAL OF THE DEVELOPMENT OF ECOTOURISM IN THE REPUBLIC OF MOLDOVA THROUGH THE PRISM OF NATIONAL TOURIST AREAS

The Republic of Moldova is an important area for tourism, rich in natural objectives and complexes allowing the development of a sustainable form of tourism – ecotourism. Therefore, it is worth noting the presence of natural ecosystems that have the potential for ecotourism development in the protected areas and other natural territories, which have good natural conditions for outdoor activities, such as: hiking, flora and fauna observation, sports and cultural activities. This study presents the analysis of the Republic of Moldova protected natural areas which are 8 national tourist zones with major opportunities for the ecotourism development.

**Keywords:** tourism, ecotourism, tourist areas, tourist potential, reservations, natural areas.

### 1. INTRODUCTION

Ecotourism is one of the areas of scientific and practical concern in most countries of the world, as it contributes to sustainable development through its activities. The modest geographic dimensions of urban areas in the Republic of Moldova cannot allow mass tourism to take place. Ecotourism reveals a real opportunity for the development of the country's areas that have the resources and conditions necessary for its revaluation. Ecotourism is a safe alternative for capitalizing on natural landscapes and ecological biodiversity in international tourist attractiveness.

**The aim of the research** is to identify ways of developing and promoting ecological tourism in the Republic of Moldova as a business opportunity with its substantial advantages.

**Methodology of research.** Research methods in the investigation and elaboration of the scientific approach have served: observation method, induction and deduction, logical analysis and synthesis, investigation method, analogy and comparison.

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**Concepts on ecotourism.** One of the first eco-tourism definitions found in the specialist literature has been in 1988 within *the Belize Program* initiated by Rio Bravo Conservation & Management Area: “Ecotourism is a form of low impact environmental tourism based on its appreciation and where a conscious effort is made to re-invest an appropriate portion of revenue to conserve the resources on which it relies. It is a form of sustainable tourism that provides benefits to the local population” According to *Hector Ceballas Lascurain* (1983), “Ecotourism is a tourism that involves travel in relatively unobtrusive areas for the purpose of admiring, studying, enjoying landscapes, fauna, plants, and some cultural resources”. *Cater Erlet* says that alongside nature must be some anthropic resources, stating that ecotourism is “a journey to human enjoyment based on the diversity of natural life and human culture without causing destruction or degradation”, a definition that is much closer of ecotourism. According to *D. Weaver* (2002), ecotourism is “a form of tourism based on experiences of studying and appreciating the natural environment as well as its other components, all contained within the social context in that area”. He argues that the protection of the environment and culture, in the manner of sustainable development principles, will enrich the basic natural and cultural resources of the destination and promote the viability and the pursuit of this activity.

In the Republic of Moldova, the term ecotourism is defined as a form of tourism oriented towards the knowledge of nature and its preservation, within the Law on the organization and development of tourism activity in the Republic of Moldova (no. 352 of 24.11.2006).

Although some details vary in concept definition, most ecotourism approaches reflect the same basic criteria that need to be emphasized. Thus, generalizing the above and at the same time representing the author's point of view, we can conclude that “ecotourism is a form of tourism carried out in natural areas, whose purpose is to know and appreciate local nature and culture, conservation and ensures active involvement, generating benefits for the local population”. Thus, ecotourism is *regarded as a concept with principles, as a business opportunity and as an evolving market segment*, being a form of tourism in natural areas.

## 2. THE TOURIST POTENTIAL OF THE REPUBLIC OF MOLDOVA

The Republic of Moldova has a rich natural environment in terms of landscape diversity and geomorphology. The diversity of landscapes is heightened by the numerous forest lands, steppe, river meadows, rocky terrain, and others. Even if it is a quite small country, the tourist potential of the Republic of Moldova is quite significant in terms of natural monuments and historical-cultural values that allow the broad development of ecotourism. Representative elements of the natural potential, which can provide a quality that is necessary for the development of ecotourism, are: *the relief* (plateaus, hills and plains, the altitude of the relief in the Republic of Moldova ranges from 4 meters to 429 meters, the average altitude is about 150 of meters); *climate* (temperate-continental is formed due to the position of the country at approximately equidistant distance from the equator and the North Pole); *hydrographic network* (the reserves of Moldova's waters are quite modest); *vegetation* (varied and rich in species, two areas of vegetation are distinguished in Moldova: steppe and silviculture); *fauna* (animals living in forests, plains, plateaus are distinguished, some rodents are characteristic of steppe regions, there are swans in lakes and ponds, various species of fish storks). Due to the unbalanced exploitation of these representative elements of the natural environment, especially the fauna, flora and waters that are most sensitive to



the uncontrolled human impact, have emerged territories with special protection status, which are termed natural protected areas.

**State-owned natural areas** are defined as “bulky areas of biosphere including dry and aquatic areas that are totally or partially permanently or temporarily excluded from the intensive economic and tourism circuit and are intended to protect and improve the quality of the environment, conservation and safeguarding natural resources, the protection of objects and natural or artificial phenomena of scientific value”.

Areas protected by natural value and low levels of human intervention on their territory are the best examples and models for natural and semi-natural ecological systems. Thus, both the assessment and monitoring of the state of natural capital, as well as the development of knowledge, can be achieved in pilot areas such as protected areas.

The State Protected Areas Fund of the Republic of Moldova includes natural objectives and complexes of primary value for conservation of biodiversity and economic equilibrium and for the ecological education of the population. These are categories of natural objects and complexes: scientific reservations, natural reservations, landscape reservations, nature monuments, national parks, botanical gardens, dendrological gardens, multipurpose areas, zoological gardens, biosphere reserves etc. Objects and complexes in protected areas are of international, national and local importance.

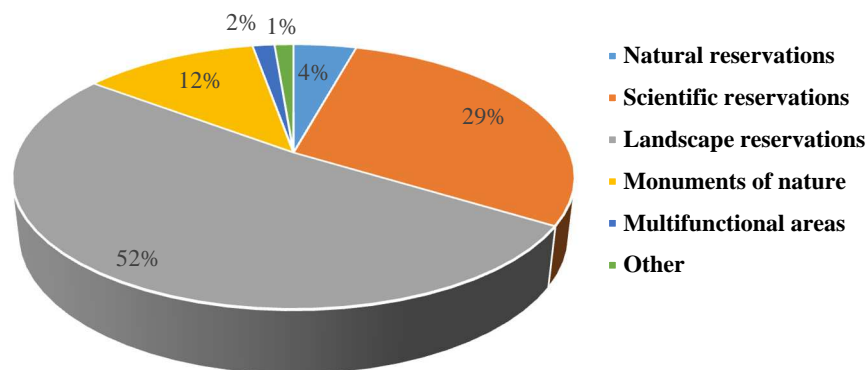


Figure 1. The protected areas functional structure

Source: elaborated by author.

The main objective of the *natural reserves* is to provide optimal conditions for protection and recovery of different species, plant communities and significant animals, that are nationally important. The most representative natural forest reserves are: Rososeni (Briceni), Baurci (Cahul), Sadova (Călărași), Flamanda (Vulcănești). We also have nine natural medicinal herb reserves: Roșcani (Briceni), Hrușca (Camenca), Logănești (Hâncești), Seliște (Nisporeni), that protect and preserve different medicinal herb species. There are also mixed reserves, such as Cantemir (Cantemir), Lebăda Albă (Leova) and Togai (Ștefan Vodă).

The priority objective of the *scientific reserves* are environmental protection, scientific research and people's ecological education. There are some important reserves in Republic of Moldova, that are interesting for tourists and scientists. They are: Plaiul Fagului

(Ungheni), Iagorlâc (Lozova), Prutul de Jos (Cahul), Pădurea Domnească (Glodeni), Codru (Strășeni).

The objective of the *landscape reserves* is to preserve nationally important natural landscapes. Their use is regulated for economic, touristic, cultural and recreational purposes. The most representative reserves are: Pădurea Hârbovăț (Anenii Noi), The geological and palaeontological complex of Lopatnic River (Briceni), Lunca inundalilă (Cantemir), Codri Tigheci (Cantemir), Suta de Movile (Rașcani), Cosăuți (Soroca), Carbuna (Căinari).

The *Monuments of nature* preserve and contain the history and beauty of our country. Scientist often do research there.

The *resource reserves* are created in order to protect some types of soils and resources in their natural condition. It also includes preservation of artificial diversity, such as: botanical gardens, dendrological gardens, zoological gardens and other landscape monuments. People, usually, create different plant and animal collections in these reserves for educational, informational and touristic purposes.

The objective of the *landscape architecture monuments* is to protect and capitalize architectonic landscape compositions, that serve as a gene pool deposit for plants.

1 table represents the number and the surface of Moldova's protected areas.

Table 1. The protected area categories from the Republic of Moldova

№.	The protected area categories	Number	Surface, ha
1	Scientific reserves	5	19 378,0
2	Monuments of nature: <ul style="list-style-type: none"> <li>• geological and palaeontological;</li> <li>• hydrological;</li> <li>• botanical.</li> </ul>	86 31 13	2 681,8 99,8 125,2
3	Natural reserves: <ul style="list-style-type: none"> <li>• forestry;</li> <li>• of medicinal herbs;</li> <li>• mixed.</li> </ul>	51 9 3	5 001,0 2 796,0 212,0
4	Landscape reserves	41	34 200,0
5	Resource reserves	13	532,0
6	Multifunctional management areas	27	1 029,0
7	Botanical gardens	1	105,0
8	Dendrological gardens	2	104,0
9	Zoological gardens	1	20,0
10	Landscape architecture monuments	21	304,9
11	Urban zones	3	94 705
	<b>Total</b>	<b>470</b>	<b>161 286,1</b>

Source: elaborated by the author.

The natural protected areas from the Republic of Moldova represents the key-point for ecotourism practice, as I mentioned, they are represented by 5 forestry scientific reserves, 63 natural reserves, 130 monuments of nature with increased interest for tourists, 41 landscape reserves, that offer relaxing and informational possibilities for tourists, 13 resource reserves, 27 multifunctional management areas, that are divided in 5 steppe vegetation sec-

tions, 25 meadow vegetation and 2 forest curtains sections, 1 botanical garden, 2 dendrological gardens and 1 zoological garden. These sections form internal ecotouristic offer, we only should protect and capitalize these beautiful places of Moldova.

There are hundreds of ecotouristic important places in Republic of Moldova, that worth be exploited by internal tourists, which are well known and promoted.

The natural fund formed by *botanical objectives*: forest and forestry reserves, parks, botanical and dendrological gardens, secular trees, forestry sections, steppe flora plots and others, represent imposing touristic resources in ecotouristic activities.

The most attractive seasons for ecotourists are spring and early summer, when they can admire the growth of such plants as acacia, that are recorded in 76 similar areas. The beautiful images and flavour of these areas is an attraction, that could be the base of special ecotouristic trips, where we could include also acacia honey degustation, made by local masters. This element could be supplementary, highly-appreciated by tourists service.

Some settlements views, that are specific because of their unique landform contrasts, represents an exclusive value for the Republic of Moldova and ,also, an important ecotouristic value, because this is central ecotouristic place. Fruits, grapes, honey, the delicious products made by locals, that promote healthy lifestyle, are pure ecological products, that could by the main point of attraction four foreign ecotourists. The Republic of Moldova could be a refuge for ecotourists, that everyday live in urban environment, who want a shelter or a relaxing place with an advantageous price, compared to other countries with developed ecotourism.

The protected areas, especially national parks, natural reserves, biospherical reserves, landscape architecture monuments get a real touristic value.

As a result of natural areas analyze in the Republic of Moldova, we can distinguish eight touristic zones with major potential:

**1. Touristic zone Edineț-Ocnița** with three subareas: Edineț, Ocnița and Dondușeni. This zone is beautiful for it's exclusive natural monuments and cultural-historical objectives. The main touristic attractions are *geological reserves*: Naslavcea, Mereșeuca; *Dendrological parks*: Țaul, Mândâc, Caracușeni; *Landscape and recreative forests*: Gârbova, Tețcani, Giordinești; *Secular oak trees*: Brânzeni; *Karst landscape monuments*: Crive cave, Fetești, Brânzeni, Caracușeni, Butești, Horodiște, the Prut toltres – unique monument for entire Europe; *Water storage*: Costești-Stânca. This offer could be completed by different historical-cultural objectives, such as churches – historical and art monuments – Larga, Lipcani, Pererîta, Criva, Corjeuți, Petrușeni, Otaci, Mărcăuți, Nădărăuți, Codreanca etc., Archeological points: Butești-keys, Duruitoarea cave. This zone offers good conditions for developing of a relaxing, scientific, cultural and ecological tourism, because some of regions from this zone, such as Ocnița and Edineț, are part of „Prutul de sus” Euroregion, that allows developing of infrastructure and territory improvement, transport and communication route extension, provide ecological security and many other benefits, as a result of border cooperation.

The ecotourism offer can also be complemented by many cultural and historical objectives, such as churches – historical and art monuments – from Larga, Lipcani, Pererita, Criva, Corjeuti, Petruseni, Otaci, Marcauti, Nadarauti, Codreanca etc., archaeological sites: Keys from Butești, Duruitoarea cave. This area offers conditions for the development of recreational and recreational tourism, scientific, cultural and especially ecotourism, as some regions of the given area, such as Ocnita, Edinet, are part of the “Prutul de sus” Euroregion, which allows the harmonization infrastructure development and spatial planning, extension

of transport and communications routes, ensuring environmental security, as well as other benefits from cross-border cooperation.

**2. Tourist area Balti.** Within this area, monuments of outstanding ecotouristic and scientific value are concentrated, such as the Princely Forest Reserve, the Colonial Birdland Colony, the relict Lake La Fontal, the Cubolta Park, the Landscape Reserve Izvoarele-Risipeni, Aquatic ecosystem “La moara” in Recea, etc. Among the cultural and historical monuments, within the tourist area Balti, can be mentioned churches, historical and art monuments, mansions and castles, ethnographic museums.

The Scientific Reserve “Padurea Domnească” is the largest natural reserve on the territory of Moldova, it has been taken under state protection since 1993 and is one of the most valuable and old European meadow forests, it was established on the forests of the Prut meadow, the detours of Balatina and Calinesti, the total surface being 6,032 ha. The territory of the reserve is a slope with a north-to-south slope, predominantly alluvial soils, meadow chernozems, at the edge, where the forests are in contact with grassy formations – salty soils (Bucătari, 2003). Over the past decades, these forests have been destroyed without mercy. Many forests with secular trees have been gutted. Today, measures are needed to re-establish all the stands, moreover the degraded forest sectors and the reconstruction of the other ecological conditions (Postolache, 1995). The data area has a well-developed transport infrastructure, provides road, rail and air links inside and outside the country, offers good access to all tourist attractions. Several regions in the area such as Falesti, Glodeni, Riscani are included in the “Prutul de Sus” Euroregion, and Florești is part of the “Siret-Prut-Nistru”, which makes it possible to better capitalize resources and develop the activity ecotourism, as well as the creation of an attractive natural environment for the development of tourist activities.

**3. The Codru tourist area** with four sub-areas: Orhei, Telenești, Călărași, Hâncești, represents the most important area for ecotourism exploitation, having natural protected areas such as: 2 scientific reserves, 10 nature reserves and 28 nature reserves.

A special interest is represented by the scientific reservations, the “Codru” Scientific Reserve, in territorial aspect, is divided into three sub-zones: the strictly protected area, the buffer zone and the transit area, that is, that portion of the reservation where tourist activities are practiced. The reservation was created for the reason that it is highlighted by its orographic specificity, with old forms of landslides, mosaic of forest soils and rich vegetation (Hojmichi, 2007).

The highest places (maximum altitude – 382 m) lie at the basin of the Bîc, Botna and Iagorlic rivers. The forest vegetation is represented by hardwood, oak, oak and beech forests, of the type of central European forests, which are practically located in the east of their area (Чейдеман, Маник, Николаева, Симонол, 1980).

The second reserve is “Plaiul Fagului”, which aims to preserve and study the most representative ecosystems in the area of Codri. Plaiul Fagului, is a picturesque natural scenery, a precious treasure of Moldavian nature. The territory of the reserve is partly accessible for ecological tourism. This complex of natural ecosystems, the site of biodiversity, is an object of research, a laboratory under the open sky. The territory of the reserve is very fragmented as a consequence of erosion and landslides. The maximum altitude is 408.6 m. From here, the Bic River courses and several streams take their course. The reserve flora includes over 900 species of plants, of which 77 are rare, endangered, including vascular plants, macro-mycetes, lichens, bryophytes (Cuza P., Boaghe, 2003). The largest areas of natural forests are occupied by hornbeams (31.5%), crickets (20.6%) and carpets (18.6%). Fishes occupy

a comparatively modest surface – 256.7 ha, oak forests – only 232 ha. Only in these places in the republic meet the clam, the pearl, to the fly, some rare species of ferns. The fauna is represented by nearly 200 species of animals (Florea, 2005).

The Codru tourist area also has a very rich area of cultural and historical monuments, such as the archaeological reserve Orheiul Vechi, which is a territory with a well-developed and favorable infrastructure for ecotourism, the Codru tourist area represents an important perspective for the development of ecotourism in the Republic of Moldova.

**4. The Chisinau tourist area** includes forests of landscape, scientific and recreational interest, such as Scorteni, Capriana, lakes and ponds – Chisinau, Ghidighici, Ulmu, mineral waters - Chisinau, Speia, Onițcani, hunting and pisciculture. The Chisinau tourist area can be considered the second place according to the value of the natural heritage and the cultural-historical monuments, with a well-developed tourist infrastructure due to the geographical position in the area of Chisinau. The city of Chisinau is also known through the Dendrariu Park, Botanical Gardens, Zoological Garden, classified as natural areas protected by the state and which represent important values for the development of ecotourism.

**5. The Soroca-Dubasari tourist area** with three sub-zones: Soroca, Camenca and Dubasari. Nistru River from Dubasari to its leakage, scientific reserve “Iagorlic”, forests of landscape and scientific interest: Cosauti, Holoșnita, Saharna, Cotiujeni, Oniscani, Țipova, Oxântea, Temeleuți dendrological park, Holercani rest base important attractions for the development of rest and ecological tourism. We believe that the Soroca-Dubasari area can be a favorable area for starting the cruise on the Dniester River.

**6. Tourist area Cahul.** This area gives little to the other regions of the Republic of Moldova, imposed by the landscape reserves – Codri Tigheciului, lakes and landscapes from the Prut meadow, pedunculous oaks – Giurgiulesti, mineral waters – Cahul as a spa resort, hunting fund, cultural-historical objectives: Church of Colibași, Cheese. Being crossed by transit roads to Ukraine and Romania but having an external position towards Chisinau and other regions of the country, the tourist area of Cahul, through the development of special tourist routes, can promote the image of this region through the following forms of tourism: ecotourism, rest and agreement, treatment, itinerary with historical valences.

**7. Tourist area Vulcanesti – Cainari.** The main defining elements that attribute to the area a tourist value are: the landscaping reserve of Dezghindea, the Congaz reservoir lake, the Belevu lake, the curative mineral waters – Besalma, Congaz, the fishery and hunting grounds. Featuring modest natural resources but being favored by a modern road network and a railway line, this tourist area, by including its resources in the tourist circuit, can promote eco-tourism, rural tourism, recreation and recreation, hunting and fishing, sports.

**8. Lower Nistru tourist area.** On the banks of the Dniester, within this area are situated the main recreational objectives such as parks, beaches, landscapes and embankments of the cities of Tighina and Tiraspol, curative mineral waters – Căușeni, the landscape reserve – Turkish Garden in Copanca, medieval fortresses – Tighina, Tiraspol, ethnographic and folklore museums – Olanesti, Tighina, Tiraspol. Within this area, ecotourism can be developed and promoted alongside other types of tourism. In the tourist area Nistru inferior enter the scientific reservation “Iagorlâc”. The greatest value of the Iagorlic Nature Reserve lies in the fact that there are many rare and endangered species of plants that enter the unique phytocoenoses situated on the Iagorlic river steppe slopes. The meadow vegetation occupies small areas in the valley of the Iagorlic River. In the vicinity of the river banks there were recorded not too large areas of marsh vegetation with the predominance of the following

species: rogoz, reed, rush, lily-of-the-valley, aquatic patch, yellow-stony, obligenel (Bejenaru, 1998).

### 3. CONCLUSIONS

Areas protected by their natural value and low levels of human intervention on their territory are the best examples and models for natural and semi-natural ecological systems. Thus, both the assessment and monitoring of the state of natural capital and the development of ecotourism can be achieved in pilot areas such as the eight tourist areas. Protected natural areas, through their aesthetic, recreational, educational, scientific interests, are very attractive tourist attractions in the field of ecotourism and are also a major point in its development. Their protection, capitalization and promotion have long-term economic and social benefits as they serve as a basis for the sustainable development of ecotourism but also for an economic establishment for the resident population.

The Republic of Moldova has a rich area of natural objectives and complexes of tourist importance, which allows the development of ecotourism as a sustainable form of tourism. It is worth noting the presence of natural ecosystems that have the potential to develop ecotourism in protected areas and other natural areas, which have good natural conditions for outdoor activities: hiking, flora and fauna observation, sports and cultural activities.

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Daniel Dariusz KOTKOWSKI<sup>1</sup>

## SMART GROWTH OF THE EUROPEAN UNION COUNTRIES IN THE CONTEXT OF EUROPE 2020 STRATEGY GOALS

The article presents the results of research on the state of implementation of limited aspects of the European Union *Europe 2020 Strategy*. Based on the analysis of statistical data, the paper indicates possible scenario concerning the achievement of one of the most important *Europe 2020 Strategy* goal (level of R&D expenditure). An attempt was also made to verify the thesis that there is a close relation between the level of expenditure on R&D in relation to GDP and the competitiveness of a given economy. The findings lead to the conclusion that there is a positive correlation between expenditure on R&D in relation to GDP in a given country and the competitive position of economies. However, weak dynamics of growth in outlays in R&D field may result in failure to achieve the assumed indicators and thus worsen the competitive position of the EU countries in the global world.

**Keywords:** European Union, Europe 2020 Strategy, R&D, innovation, competitiveness, economy.

### 1. INTRODUCTION

The end of the 20th century and the beginning of the 21st century is the period in the European Union (EU) of overcoming stagnation and facing new challenges in different dimensions: economic, political, social. These challenges forced the European Union leaders to undertake new, unconventional and ambitious actions. The development goals for the EU were defined in two strategic documents adopted during this period: *the Lisbon Strategy* (EU development program in 10-year period, which was adopted at the Lisbon European Council in March 2000) and in *Europe 2020. The Strategy for smart, sustainable and inclusive growth* (Europe 2020 Strategy). The implementation of the first one ended with the fiasco. The question about the chances of success of the other remains open. One of the common elements of both strategic documents was the emphasis on investments in the field of research and development (R&D). These kind of investments were (and still are) perceived as the remedy for economic stagnation and for structural weaknesses of the EU. Moreover, support for R&D sector is the core idea leading to socio-economic development of modern economies.

One of the main objectives of *the Lisbon Strategy* was to make the European Union the most competitive economy in the world. The method of reaching this ambitious goal was

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strengthening the research and development sector (R&D)<sup>2</sup> defined as a source of innovation and a prerequisite for economic development. The set up target was the level of investments in this area: 3% of the GDP of the European Union. Although the objective of *the Lisbon Strategy* was not achieved<sup>3</sup> and the strategy itself was replaced by a new document (Europe 2020 Strategy), the significance of research and development activities that are to be reflected in the economic development of EU countries is still underlined<sup>4</sup>.

## 2. GOAL AND METHOD

The economic crisis of 2008–2009 which hit Member States in a severe way has not changed the introduction of new development paradigm of the EU. Moreover, the latest social and political processes, such as the migration crisis or the results of the referendum in Great Britain which determine the country's abandonment of the European Union, do not change it either. Nevertheless, the above mentioned processes may influence the EU economic policy coordination and *de facto* may undermine the legitimacy and feasibility of the strategic objectives set for the entire EU for 2020. Additionally, during the discussions concerning the EU financial perspective 2021–2027 there are no issues concerning strategic planning. One should rather expect a complete abandonment of the joint European Union strategy for the next period which will be covered by the Multiannual Financial Framework 2021–2027.

The aim of the article is to verify the feasibility of the objectives set in the Europe 2020 Strategy regarding the level of R&D expenditure in relation to individual Member States and to the European Union as a whole. Additionally, it was examined whether and to what extent EU Member States followed the main EU strategic documents indicating that the source of economic growth and competitiveness is development of the R&D sector (reflected in the increase in R&D expenditure). An attempt was also made to verify the thesis that there is a close relationship between the level of expenditure on R&D in relation to GDP and the competitiveness of a given economy. There were differentiated research methods applied. For the purpose of retrospective analysis of numerical data quantitative methods were applied allowing for ordering and aggregation of source data in accordance with required degree of detail. There were also applied statistical methods including statistical time series analysis.

## 3. THE EUROPEAN UNION R&D POLICY AT THE BEGINNING OF 21ST CENTURY

The European Union policy in the field of R&D has its foundation in the *Treaty on the functioning of the European Union* (Part III, Title XIX *Research and technological development and space*)<sup>5</sup>. The document indicates that the main field of public intervention at

<sup>2</sup> For the purpose of analyses in this article, the R&D sphere is understood as systematically conducted creative work, undertaken to increase the knowledge base, including knowledge about people, culture and society, as well as to find new applications for this knowledge.

<sup>3</sup> Commission staff working document. Lisbon Strategy evaluation document, Brussels, 02.02.2010, SEC (2010), 114, final.

<sup>4</sup> The R&D issue and the impact on economic development are also emphasized by D. Drabińska who undertaken researches on new paradigm in economic and social sciences (Drabińska, 2008).

<sup>5</sup> According to Art. 179 “The Union shall have the objective of strengthening its scientific and technological bases by achieving a European research area in which researchers, scientific knowledge



the EU level is the promotion of cross-border cooperation between scientists in order to create the European Research Area. This reflects the position that has been given to R&D dimension in the context of the European Union.

Taking into account the documents aimed at smooth implementation of the Treaty two of them are especially important: the Lisbon Strategy (renewed in 2005) and the Europe 2020 Strategy. Additionally, there were adopted programmes which were aimed at facilitation of the research and development policy. The most important of them were Framework Programmes which from the beginning of their existence had been several times modified. However, the improvements did not eliminate the weaknesses of these instruments, including bureaucratic burdens, complex management and control rules not adapted to the specificity of the R&D sphere, low level of private entities involvement and poor coordination at the EU level (Ferrer, Figueira, 2011). In the EU's financial perspective 2014–2020, the Framework Programmes were replaced by the EU Horizon 2020 Programme which was supposed to eliminate the weaknesses identified in the programmes implemented so far. The role of R&D sphere has been systematically growing in the European Cohesion Policy mainly through intervention under the European Regional Development Fund and the European Social Fund. The Cohesion Policy financial support in the period 2014–2020 is strictly focused on those areas that are conducive to the implementation of the Europe 2020 Strategy<sup>6</sup>.

At the beginning of the 21st century an attempt was made to give the policy in the field of R&D (or the EU's innovation policy) more significant place than it had in the past. The European Council at the meeting in Lisbon in March 2000 adopted a strategic document setting targets for the European Union for a period of 10 years. The goal set was extremely ambitious - creating the EU the most competitive economic area developing faster than the USA. The main impulse for development was to be a knowledge-based economy. It was assumed that by 2010 expenditure on R&D would reach the level of 3% of GDP. Despite modifications of the Lisbon Strategy in the middle of its implementation its objectives were not achieved and the EU's competitive position to the USA in fact has deteriorated. The R&D expenditure ratio in 2010 reached 2% of the GDP of the European Union (the Lisbon Strategy goal was not met).

The European Council on 26 March 2010 adopted the proposal for launching a new strategy for growth and high quality employment policy<sup>7</sup>. It emphasised sustainable and inclusive growth as a method to overcome the structural weaknesses in Europe's economy. The framework for its implementation was determined by the integrated guidelines for eco-

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and technology circulate freely, and encouraging it to become more competitive, including in its industry, while promoting all the research activities deemed necessary by virtue of other Chapters of the Treaties”.

<sup>6</sup> Art. 18 of Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006 (OJ L 347, 20.12.2013).

<sup>7</sup> Communication from the Commission, Europe 2020. A strategy for smart, sustainable and inclusive growth, Brussels, 3.3.2010, COM(2010) 2020 final.

nomic<sup>8</sup> and employment policy<sup>9</sup>. Guideline 4 referred directly to the R&D sphere and indicated actions to be taken at national and at the EU level in the field of research, development and innovation. What should be emphasized is the goal for the EU and in principle a return to the Lisbon Strategy indicator which was the basis for determining national targets. It was an increase in expenditure on investment in research and development up to 3% of the Union's GDP by 2020. As emphasized in the document, this is to be an indicator of the increasing intensity of R&D and innovation.

In order to avoid failure as was the case with the Lisbon Strategy indirect objectives and recommendations to achieve the goals were formulated more precisely. The document specifying the objectives is "Europe 2020 flagship initiative. Innovation Union"<sup>10</sup>. The document explicitly indicates that investing in R&D is to be a way to raise the EU's competitiveness and a method for smart growth. It also referred to the difficult economic situation of many Member States indicating the necessary actions to be undertaken. It was stated that despite the EU financial constraints Member States should continue to invest in education, research and development, innovation and ICT. If possible, it should not only protect such investments from budget cuts but also increase their scale. Thus, it was clearly stated that expenditures on R&D sphere are on the one hand a specific panacea for the crisis and an element that allows to overcome it and on the other hand – a source of competitiveness of the entire EU in the global world.

R&D policy is gaining more and more importance in the EU which is reflected in the main strategic documents. Nevertheless, in the above-mentioned context one should ask a question about the basis for objective specified so precisely in the strategic documents for the objective (3% of GDP on R&D) and whether it is feasible to achieve it bearing in mind the tendencies in financing this sphere at the beginning of the 21st century. Statistical data, the list and analysis of which can be found later in this article, may be helpful in answering these additional questions.

#### **4. ANALYSIS OF THE EU MEMBER STATES' LEVEL OF EXPENDITURE ON RESEARCH AND DEVELOPMENT (R&D)**

The EU strategic documents clearly indicate that innovation is the source of economic growth. The main mode for increasing innovativeness of the economies is to strengthen research and development (R&D) (Aghion, 2006). The indicator for assessment of the importance of R&D sector is the level of expenditure on R&D. It also enables to assess whether we can think about a knowledge-based economy. According to A. Kukliński in knowledge-based economy this level should not be less than 2.5% of GDP (Kukliński, ed., 2001).

This chapter analyses the data on R&D outlays in EU Member States including the division into the so-called "EU15" (Member States until 2004) and the so-called "EU13" (co-

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<sup>8</sup> Recommendation for a Council on broad guidelines for the economic policies of the Member States and of the Union. Part I of the Europe 2020 Integrated Guidelines, {COM(2010) 193}, Brussels, SEC(2010) 488/3.

<sup>9</sup> Council Decision on guidelines for the employment policies of the Member States. Integrated guidelines on the Europe 2020 strategy - Part II. {SEC (2010) 488 final}.

<sup>10</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Europe 2020 Flagship Initiative. Innovation Union. Brussels, 6.10.2010, COM(2010) 546 final.

untries that joined the EU in 2004 and later). In addition, the EU countries belonging to the most competitive group were examined in detail which allowed to verify the thesis that R&D support affects economic development and competitiveness of individual countries' economies. Additionally, based on historical data, an attempt was made to estimate whether 3% of GDP expenditure on R&D in 2020 is possible to achieve.

#### 4.1. EU15 and EU13 Member States

There was in 2004 an unprecedented enlargement of the EU. It is particularly important that the EU joined countries with a much lower level of economic development measured by the GDP indicator than the EU15. In addition, in 2007 Romania and Bulgaria joined the EU. These countries differed significantly in the level of economic development from other Member States. In 2016 Croatia became a member of the EU. It seems that the EU enlargements has reduced the ability of the entire Union to achieve ambitious goals in the field of R&D. One should also note a noticeably different level of expenditure on R&D in relation to GDP in two groups of countries – EU15 and EU13 (except Slovenia and the Czech Republic). In this context it should be emphasized that the level of R&D expenditure to be achieved in 2020 have varied depending on the Member State.

In order to verify the thesis regarding the possibility for individual Member States to achieve one of the goals set in the Europe 2020 Strategy related to the level of R&D expenditure in relation to GDP an analysis was conducted focused on changes in the level of expenditure in this area in the period 2000–2016. An element of the analysis was an attempt to estimate the value of expenditure on R&D in relation to the value of GDP in each of the analysed Member States. The average annual increase in the level of expenditure on R&D in relation to GDP in the years 2000-2016 has been calculated. The obtained results were used to extrapolate the rate of change in the examined index in the period 2017–2020 and to estimate its level at the end of 2020.

The tables below present data on the level of R&D expenditures in the EU Member States in 2000 and 2016 and the target for a given country established for 2020 together with an indication of the deviation from the assumed target and estimates for its implementation in 2020.

The analysis of data revealed significant differences between the EU countries belonging to two groups (EU15 and EU13) with regard to the level of expenditure on R&D in relation to GDP. The level of expenditure in the EU15 countries was much higher than the EU13 group in both 2000 and 2016. At the same time in the EU15 countries there was a decrease in the level of R&D expenditure in relation to GDP only in Luxembourg and Finland in the analysed period. For Member States that joined the EU after 2004 the increase was identified in all countries (except Latvia, where the level of expenditure on R&D in relation to GDP in 2000 and in 2016 was the same).

In the EU15 group the lowest level of expenditure on R&D in relation to GDP in 2016 was recorded by Greece – it amounted to 1.0%. It was higher than the level of eight out EU13 Member States. On the other hand, the higher level than in Greece was recorded in the case of Slovenia (2.0%), the Czech Republic (1.7%), Estonia (1.3%) and Hungary (1.2%). The level of expenditures in Poland in relation to GDP in 2016 was the same as in Greece. Only two of all Member States in 2016 achieved the national targets set out in the Europe 2020 Strategy for R&D expenditure in relation to GDP. These were the Czech Republic and Cyprus. In eight EU Member States the level of R&D expenditure in relation to

Table 1. Expenditure on R&amp;D in relation to GDP of EU15 countries

Specification	Expenditure on R&D in relations to GDP in 2000 (%)	Expenditure on R&D in relations to GDP in 2016 (%)	Expenditure on R&D in relations to GDP – goal for 2020 (Europe 2020 Strategy) (%)	Difference (level reached in 2016 – target on 2020) (in percentage points)	Increase in the period 2000–2016 (in percentage points)	Average yearly increase in 2000–2016 (in percentage points)	Estimated increase in the period 2017–2020 (in percentage points)	Estimated level of expenditure on R&D in relations to GDP in 2020 r. (%)	Difference between estimated level in 2020 and the strategic goal for 2020 r.
Belgium	1,9	2,5	3,0	-0,5	0,6	0,04	0,2	2,6	-0,4
Denmark	2,2	2,9	3,0	-0,1	0,7	0,05	0,2	3,1	0,1
Germany	2,4	2,9	3,0	-0,1	0,6	0,04	0,1	3,1	0,1
Ireland	1,1	1,2	2,0	-0,8	0,1	0,01	0,0	1,2	-0,8
Greece	n/a	1,0	1,2	-0,2	n/a	n/a	n/a	n/a	n/a
Spain	0,9	1,2	2,0	-0,8	0,3	0,02	0,1	1,3	-0,7
France	2,1	2,3	3,0	-0,8	0,2	0,01	0,0	2,3	-0,7
Italy	1,0	1,3	1,5	-0,2	0,3	0,02	0,1	1,4	-0,2
Luxembourg	1,6	1,2	2,3	-1,1	-0,3	-0,02	-0,1	1,1	-1,2
The Netherlands	1,8	2,0	2,5	-0,5	0,2	0,01	0,1	2,1	-0,4
Austria	1,9	3,1	3,8	-0,7	1,2	0,08	0,3	3,4	-0,4
Portugal	0,7	1,3	2,7	-1,4	0,6	0,04	0,1	1,4	-1,3
Finland	3,3	2,8	4,0	-1,3	-0,5	-0,03	-0,1	2,6	-1,4
Sweden	n/a	3,2	4,0	-0,8	n/a	n/a	n/a	n/a	n/a
United Kingdom	1,6	1,7	n/a	n/a	0,1	0,0	0,0	1,7	n/a

Source: Own calculations based on data Eurostat [Access: 30.07.2018]. Access on the internet: <http://appsso.eurostat.ec.europa.eu/nu/submiTableViewTableAction.do>.

Table 2. Expenditure on R&amp;D in relation to GDP of EU13 countries

Specification	Expenditure on R&D in relations to GDP in 2000 (%)	Expenditure on R&D in relations to GDP in 2016 (%)	Expenditure on R&D in relations to GDP – goal for 2020 (Europe 2020 Strategy) (%)	Difference (level reached in 2016 – target on 2020) (in percentage points)	Increase in the period 2000–2016 (in percentage points)	Average yearly increase in 2000–2016 (in percentage points)	Estimated increase in the period 2017–2020 (in percentage points)	Estimated level of expenditure on R&D in relations to GDP in 2020 r. (%)	Difference between estimated level in 2020 and the strategic goal for 2020 r.
Bulgaria	0,5	0,8	1,5	-0,7	0,3	0,02	0,1	0,9	-0,6
Czech Republic	1,1	1,7	1,0	0,7	0,6	0,04	0,2	1,8	0,8
Estonia	0,6	1,3	3,0	-1,7	0,7	0,05	0,2	1,5	-1,5
Croatia	n/a	0,9	1,4	-0,6	n/a	n/a	n/a	n/a	n/a
Cyprus	0,2	0,5	0,5	0,0	0,3	0,02	0,1	0,6	0,1
Latvia	0,4	0,4	1,5	-1,1	0,0	0,00	0,0	0,4	-1,1
Lithuania	0,6	0,9	1,9	-1,1	0,3	0,02	0,1	0,9	-1,0
Hungary	0,8	1,2	1,8	-0,6	0,4	0,03	0,1	1,3	-0,5
Malta	n/a	0,6	2,0	-1,4	n/a	n/a	n/a	n/a	n/a
Poland	0,6	1,0	1,7	-0,7	0,3	0,02	0,1	1,1	-0,6
Romania	0,4	0,5	2,0	-1,5	0,1	0,01	0,0	0,5	-1,5
Slovenia	1,4	2,0	3,0	-1,0	0,6	0,04	0,2	2,2	-0,8
Slovakia	0,6	0,8	1,2	-0,4	0,2	0,01	0,0	0,8	-0,4

Source: Own calculations based on data Eurostat [Access: 30.07.2018]. Access on the internet: <http://appsso.eurostat.ec.europa.eu/mini/submitViewTableAction.do>.

GDP in 2016 exceeded 2.5% what is characteristic for knowledge-based economy according to the previously mentioned criterion by A. Kukliński. All of these countries belong to the EU15 group.

The analysis of the average annual changes in the level of R&D expenditure in relation to GDP in the period 2000–2016 allowed to indicate Member States for which the national targets may be achieved. There are only 4 countries that could successfully achieve the assumed index. These include the Czech Republic, Cyprus, Denmark and Germany (for 5 countries data were unavailable). Therefore, the analysis carried out shows that the goals regarding investment in R&D sector adopted in the Lisbon Strategy were highly unrealistic. In addition, it may lead to the conclusion that there is a significant risk of not achieving the target established in the Europe 2020 Strategy concerning level of expenditure on R&D amounted to 3% of the EU's GDP. This scenario is realistic taking into account the fact that in 17-year-period the increase in expenditure on R&D in the EU28 was only 0.3 percentage point and reached 2.03% of GDP in 2016.

#### **4.2. Expenditure on R&D in the most competitive countries in the EU**

Referring to the global competitiveness of economies an index elaborated by the World Economic Forum was used. This institution defines competitiveness as a mutually connected set of diverse factors grouped in 12 pillars which affects the level of productivity of the country. On the other hand, the level of productivity determines the decisions about locating and starting investments in a given country. They have a positive impact on the processes of economic development<sup>11</sup>. Pillar number 12 defined by the World Economic Forum refers to the innovativeness of the economy. As emphasized by the authors of the report the innovativeness of a given economy depends on the level of expenditure on R&D, both from public and private sources. Based on the 2017–2018 report the EU Member States were ranked in terms of their global competitiveness together with data referring to the level of R&D expenditure across GDP<sup>12</sup>.

Figure 1 presents the EU Member States ranked from the highest position in the competitiveness ranking together with the level of expenditure on the R&D in relation to GDP recorded in 2016.

The analysis of the data presented above in the chart and in the figure leads to the conclusion indicating the relations between the level of expenditure on R&D (in relation to the GDP of the country) and the competitive position of a given economy. However, some exceptions to this rule have been identified what confirms the assumption that other factors also influence the economic competitiveness of countries (apart from the level of R&D funding). Additional conclusions can be derived from the conducted research. The EU15 countries in comparison to EU13 are ahead of R&D in relation to GDP and thus also in terms of competitiveness. However, some exceptions should be pointed out. Spain, Portugal, Italy and Greece have been distanced by some EU13 countries in terms of both the competitiveness ranking and the level of R&D spending. This situation may result from the fact that the economies of these countries have been most affected by the economic crisis of 2008–2009.

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<sup>11</sup> The methodology is described in detail in: (Schwab, ed., 2017).

<sup>12</sup> Data for 2016 according to Eurostat.

Table 3. Ranking of EU28 countries in terms of competitiveness and corresponding expenditure on R&amp;D in relation to GDP

Specification	Position in the GCI (WEF) (among 137 countries)	Expenditure on R&D in relations to GDP (%)
The Netherlands	4	2.0
Germany	5	2.9
Sweden	7	3.2
The United Kingdom	8	1.7
Finland	10	2.8
Denmark	12	2.9
Austria	18	3.1
Luxemburg	19	1.2
Belgium	20	2.5
France	22	2.3
Ireland	24	1.2
Estonia	29	1.3
The Czech Republic	31	1.7
Spain	34	1.2
Malta	37	0.6
Poland	39	1.0
Lithuania	41	0.9
Portugal	42	1.3
Italy	43	1.3
Slovenia	48	2.0
Bulgaria	49	0.8
Latvia	54	0.4
Slovakia	59	0.8
Hungary	60	1.2
Cyprus	64	0.5
Romania	68	0.5
Croatia	74	0.9
Greece	87	1.0

Source: Own elaboration based on Global Competitiveness Report 2017–2018 and Eurostat data for 2016.

The analysis of the competitiveness ranking of the World Economic Forum revealed that as many as five EU15 countries are in the top ten of the most competitive countries in the world. The first EU13 country is 29th in the ranking (Estonia). This indicates, on the one hand, the persistent diversification in the economic environment between the EU15 and EU13 and on the other the large divergence within these two groups.

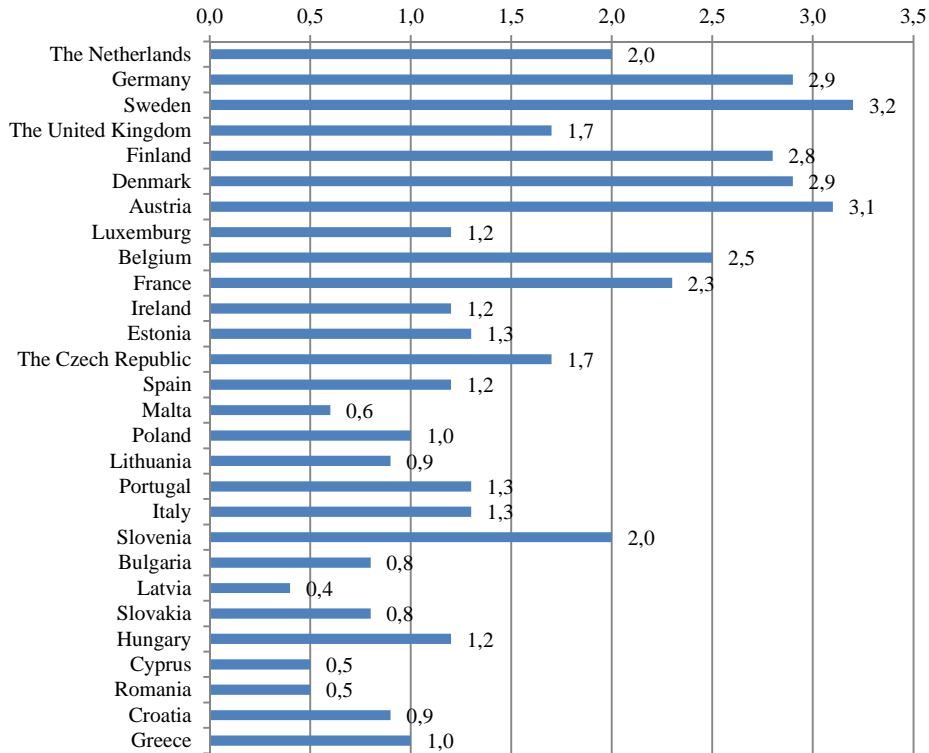


Figure 1. Expenditure on R&D in relation to GDP (countries ranked from the most competitive according to the Global Competitiveness Report 2017–2018) (%)

Source: Own study based on Global Competitiveness Report 2015–2016 and Eurostat data for 2016.

#### 4.3. Structure of financing expenditure on R&D (state budget and private sector expenditure)

The optimal model for financing R&D which has a positive impact on the entire economy is dominance of the private sector in this field. It brings about additional advantage: the results of research and development are implemented in the economy practise in the form of, for example, new innovative technologies. This combination of the science and business results in added value to the economy. The figure below presents a comparison of the share of financing R&D expenditure from public and private sources with regard to the entire financing of the R&D of individual countries.

Data analysis allows to formulate the following conclusions regarding the financing of R&D expenditure in the European Union. For 18 countries the private sector played a dominant role in financing R&D spending. The majority countries in which the public sector was the main source of financing R&D joined the EU in 2004 and later. From the EU15 countries in this group were Portugal, Luxemburg and Greece. Portugal and Greece are the countries that were significantly affected by the negative effects of the economic crisis



of 2008–2009. These results provide the basis for the conclusion that state activity in stimulating factors of socio-economic development, such as investments in R&D is noticeable in countries with less developed economies. The structure of investing R&D sector is changing in favour of private investors in more developed economies.

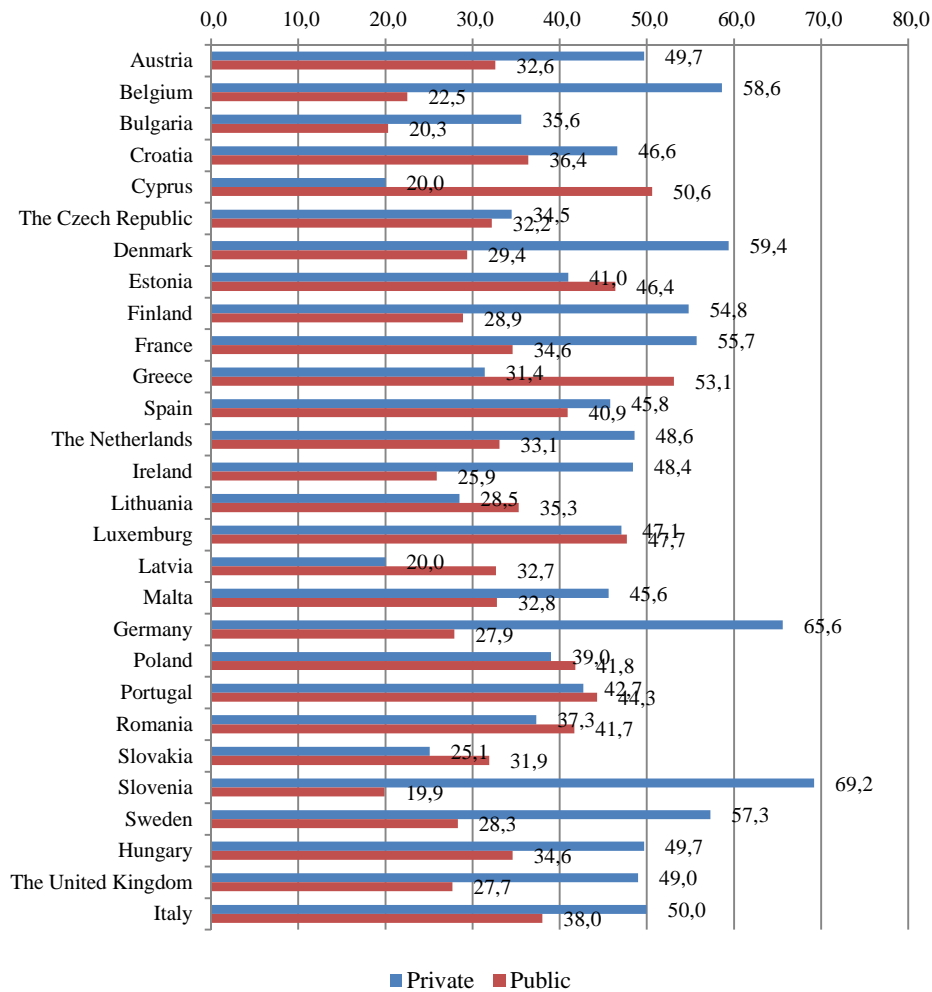


Figure 2. Summary of the share of R&D expenditure financing from public and private sources in total R&D expenditure in the EU28 countries in 2015\* (%)

\* data for France for 2014, data for Sweden (public spending) for 2013

Source: Own elaboration based on Eurostat data [Access: 30.07.2018]. Access on the internet: <http://ec.europa.eu/eurostat/web/science-technology-innovation/data/database>.

## 5. FINAL CONCLUSIONS

Simplified analysis of statistical data on financing of R&D in the European Union countries allows to verify common opinions on the role of this sphere in the development of global competitiveness of the EU and its individual Member States. First of all, it should be emphasized that the significant importance of the EU research and development policy sanctioned by relevant provisions in the most important EU documents is rather poorly reflected in the level of financing of R&D in individual Member States. In 2016 this level was for the EU28 – 2.03% of GDP (and thus significantly deviated from the assumed 3.0% in both the Lisbon Strategy and the Europe 2020 Strategy). However, there is a weak but systematic increase in the level of financing these expenditures in the entire EU28.

Secondly, the analysis of the dynamics of changes in the level of financing R&D in the EU28 and in individual Member States clearly indicates that it is doubtful that the objective of the level of financing for this sphere in 2020 set out in the Europe 2020 Strategy will be achieved.

Thirdly, the share of financing R&D from private sources is systematically increasing in relation to the share of expenditure from public sources. The economic crisis has not changed this phenomenon which gives grounds for conclusion that R&D is actually perceived by private entities (companies) as a factor of success for their development. In addition, it can be assumed that there is increasingly strong link between the R&D sphere (science) and business which should result in further improvement of micro- and macro-scale competitiveness and further development of R&D activities.

Fourthly, the analysis of statistical data indicates a positive correlation between expenditure on R&D in relation to GDP in a given country and the competitive position of economies – the higher the level of financing expenditure on R&D the more competitive economy.

Summing up, it can be concluded that the R&D sphere is perceived by the EU countries as a source of economic growth and competitiveness (EU official documents). However, weak dynamics of growth in outlays on this sphere may result in failure to achieve the assumed indicators and thus worsen the competitive position of the EU countries in the global world. There is still space for substantial changes including the increase in level of expenditure on R&D to avoid this pessimistic scenario.

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## THE IMPACT OF FINANCIAL AUDIT ON THE BALANCE OF AN ENTERPRISE – RESULTS OF EMPIRICAL RESEARCH

The article discusses issues related to the impact of financial audit in building a reliable image of the economic unit after the audit of the financial statements. The aim of the article is to illustrate the analysis of audit documentation in the area of assets and liabilities conducted for the financial years 2012–2014, during which the information contained in the first version of the financial statements was compared with information from the final version, based on which the auditor could issue an opinion together with the report. As a result of research, among others such conclusion was made that financial revision still had a significant impact on improving the reliability of financial statements and is necessary to secure the functioning of business entities on the market. The research methods used in the article are: comparative analysis of audit documentation, and desk research.

**Keywords:** audit of financial statements, balance sheet, assets, liabilities.

### 1. INTRODUCTION

The financial report is for the receivers – especially the outward ones – the essential source of information about the functioning of a given economic unit and what results it gets in a given period of time of the report. Nowadays, when the globalisation of working and result-pressure can be observed, there may be a danger of “beautifying” of the financial reports by the people responsible for it. It could be assumed that the most sensitive part is the financial result and composing it revenues and costs, but this is not case, as the field affected alongside is the balance sheet and assets and liabilities. The balance sheet is the part of the report being analysed by the stakeholders, when willing to make a rational decision about investing or managing a given economic unit.

That is why the financial report which was made by an unbiased and independent expert auditor builds much more confidence and trust. This concerns not only the outward receivers but also the inward stakeholders giving them information that the data included do not contain errors or abnormalities which make the image of the economic unit unreliable. An expert auditor while carrying out financial revision verifies, among others, assets and liabilities by employing accurate procedures of the examination, which enable him to collect sufficient evidence of the examination, on the basis of which he may issue a final product

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of financial revision<sup>2</sup> – which is the report of the examination – according to his knowledge, competence and professional scepticism and judgement<sup>3</sup> and thus extend the reliability and accuracy of financial review. The main aim of financial revision “is to ensure the reliability of financial data presented by the market users in order to restrict the economic and investing risk” (Lew, 2016).

When making the analysis of the opinions<sup>4</sup> issued by expert auditors after conducting studies on financial reports, it can be observed that the majority of them are impeccable. This kind of information may cause, especially in people not knowing the procedures of revision, a wrong idea that financial reports, being an integral part of those opinions, were obtained on the basis of error-free data. This kind of thinking is not appropriate as expert auditors give such opinions on the basis of changed, due to recommendations, financial reports (Compare: Andrzejewski, 2012; Lew, 2015).

The aim of this article is to present the analysis of the revision documentation on balance sheet made available by the audit group, concerning years 2012–2014 in over 150 economic units with various organisation structures and sizes, which had obligatory financial revision.

These studies were to show the analysis of the information contained in the first part of the financial report, which an expert auditor verified with the information contained in the final version of the financial report, on the basis of which he or she issued an opinion with the report. These studies were to enable collecting the appropriate evidence on confirmation of the influence of financial revision on separate parts of the balance sheet, which enabled the increase of its reliability, accuracy and quality for the stakeholders. To complete the empirical research desk research analysis was used.

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<sup>2</sup> In the article interchangeably is used the notion of „the study of financial reports” and “financial revision. It is the reflection of literary research, carried out by the author, and which cannot be presented fully due to the length of the article, that prove that more and more authors of the subject literature claim that both notions carry the same procedure of the study and its final result- the report as well as the actions taking place after the actual study, which is the correction of the financial report advised by the expert auditor (Compare: Krzywda, 2012; Nowak, 2013).

<sup>3</sup> The professional scepticism of an expert auditor is the critical approach of his mind and a critical assessment of the results of the study. The expert auditor is obliged to present professional assessment and scepticism while planning and proceeding the studying of the financial report. The professional judgement implies practical applying of the acquired skills, knowledge and experience in context described by accounting standards, financial revision and ethics, in order to make rational decisions about appropriate ways of acting in audit circumstances. On the basis of *Kodeks etyki zawodowych księgowych Międzynarodowej Federacji Księgowych (IFAC) – Code of ethics for professional accountants*, precleared in Polish language in w 2011 by International Federation of Accountants (IFAC).

<sup>4</sup> The study carried out by PIBR took place when different laws were employed, according to which an expert auditor issued the opinion with the report on the examined financial report. Nowadays – by law – instead of notions “opinion” and “report” the term “the report on the study” is used, which contains the opinion of the independent expert auditor on the studied financial report [Comp. Resolution no. 1554/33a/2017 Krajowej Rady Biegłych Rewidentów from 8 December 2017 on the standards of financial studies (700 (Z), 701, 705 (Z), 706 (Z), 720 (Z), 260 (Z), 570 (Z)); and Resolution from 11 May 2017 about expert auditors, audit companies and public control (Dz.U. z 2017, poz. 1089)].

## 2. THE STUDY OF THE BALANCE SHEET BY AN EXPERT AUDITOR

The definition contained in KSRF 200 claims that “the general aims of an independent expert auditor and carrying out the study accordingly to International Standards of Research” informs that “the aim of the research is to increase the level of trust of the intended users to financial reports.

It can be accomplished by issuing the opinion by the expert auditor if the financial reports we in all crucial aspects prepared accordingly to the general assumptions of financial reporting” (National Standard of Financial Revision 200 in International Standard of Research 200, 2015). Thus, it appears to be crucial to examine by the expert auditor the credibility, reliability, validity and accuracy of presenting the assets and liabilities in the financial report.

The definition of assets contained in the Resolution on Accounting claims that it is a unit emerged in the result of past operations or events economically useful, controlled by a given economic unit, physical and non-physical property components with reliable worth, which predictably may be economically profitable (Ustawa o rachunkowości, 2019, art. 3, ust. 1, pkt 12; Fedak, 2018; Lew, Nowak [red.], 2016). In the case of liabilities in the Resolution on Accounting, there is no full definition of the liabilities category, but rather the very specific components of liabilities. The capitals are, among others, the nonreturnable input of assets put to the unit by the owner, and in case of obligations it is a duty of a person to make appropriate provisions which will decrease his or her present of future assets (Ustawa o rachunkowości, 2019, art. 3, ust. 1, pkt. 20; Fedak, 2018).

That is why the expert auditor while examining these categories of financial report should make sure if they were appropriately presented in a given group, if they really exist – by checking e.g. documents on stocktaking, if they are complete and correctly assessed, and collecting proves of the study, which will help to issue a report containing the opinion about the financial report. (Krzywda, Szafraniec, [red. Krzywda], 2012).

## 3. METHODOLOGY OF CONDUCTED EMPIRICAL RESEARCH

The aim of conducted empirical research was to examine if the financial revision, by applying appropriate procedures, enables verifying the information contained in the part of financial report where there is the balance sheet and if it influences the changes in particular groups of assets and liabilities. The analysis was made of the revision documentation of economic units for 3 subsequent years in which financial revision took place. The research was possible thanks to the revisory documents shared by the subject entitled to carry out financial revision. The data which enabled identification of a given economic unit were encoded. Analysed revision documents comprised researches conducted in years 2012–2014 and concerned:

- In year 2012, 168 subjects examined,
- In year 2013, 173 subjects examined,
- In year 2014, 189 subjects examined.

Having collected and analysed the general data on the examined financial reports, a division was made – according to its meaning for credibility of the financial report – into information more detailed and connected to the balance sheet. The categories were as follows:

- Assets in general,
- Capital assets, with non-physical values and legal and physical fixed assets,

- Current assets, with creditors of delivery, services and money on bank accounts,
- The sum of liabilities,
- Equity capital, the profits (and losses) from recent years and profits (and losses) post-tax from the current year,
- Long-term liabilities and reserves on legal benefits
- Current liabilities, credits and loans, financial liabilities of deliveries and services, taxes, duties, welfare, and settlement of accounts.

In order to present the differences in values of particular elements of the balance sheet appearing between the first version of financial report which was given to the expert auditor and the final version, the value ranges of the changes were used, which were given in Polish zloty.

As to present the consequences of actions of the expert auditor to detect the abnormalities that he noticed while studying the financial reports, they were organised into 5 ranges presenting those changes. The corrections made by the auditor aim to increase the credibility of the financial reports, that should also increase the credibility of the whole economic unit on the market. The ranges used to present the changes made by the expert auditor are as below:

- 1) To 100 thousand PLN,
- 2) From 100 thousand PLN to 500 thousand PLN,
- 3) From 500 thousand PLN to 1 M PLN,
- 4) From 1 M PLN to 10 M PLN,
- 5) Above 10 M PLN.

On verifying the documents while the conducted research it turned out that to present the changes, made on the suggestion of the expert auditors, they can be comprised in the first four ranges of money and there was not one above 10 million PLN in the financial reports made by economic units.

### **3.1. The influence of financial revision on the quantity and structure of assets and liabilities presented in the balance sheet**

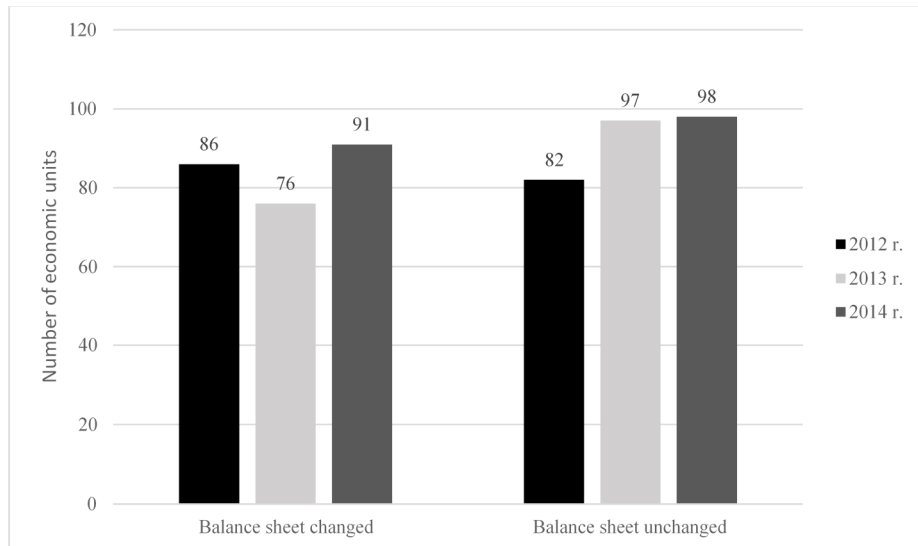
In the researched group of economic units in particular years it can be observed that the actions taken in the financial revision by the expert auditor caused changes in the balance sum in half of the cases, which enables to draw a conclusion that the primary financial report contained some abnormalities or did not contain crucial information and as a result did not present a reliable financial state of economic units. The number of financial reports of economic units where the expert auditor made changes in the balance sheet with the division into particular report periods is presented in picture 1 below.

From the data presented in picture 1 it can be seen that in 2012 in 86 economic units there was a change in the balance sum, which gives 51% of all researched units. In 2013 there 44% and in 2014 48% of such cases.

To describe the elements of the balance, which were the reason for the change in the balance sum, a detailed analysis was made of the main groups composing the assets and liabilities of the balance sheet, that is capital assets, current assets and equity, and long-term liabilities and current liabilities.

When it comes to the correction of capital assets the changes were made in 33, 75 and 35 economic units in the subsequent years of the financial revision, which gives 20%, 43% and 19% of changes in the researched financial reports.





Picture 1. The structure of changes of a balance sum recommended as a result of act in financial revision in years 2012–2014

Source: Self-study.

Similar studies connected with the verification of revision documentation and the influence of financial report was carried out in Katowice centre for the current year ending in 2005. For comparison, in this study J. Pfaff reached higher results in the examined units, as in his group of modification in the structure of assets, 43% of units made changes in this category (97 of 223 the examined financial reports submitted to the financial revision<sup>5</sup>).

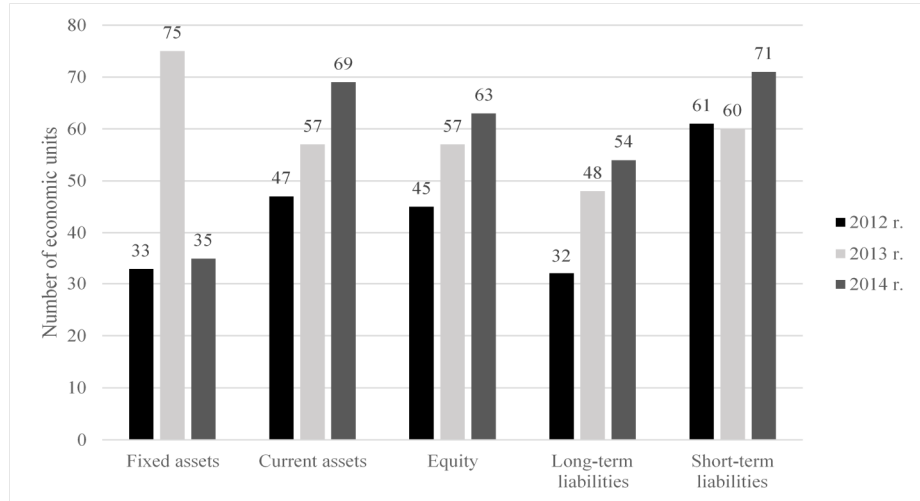
Increasing the credibility of the balance sheet in the particular periods (43% of changes made in 2005, in comparison with 19–20% in 2012 and 2014) is undoubtedly a result of constantly developing skills of the accountants in particular economic units. However, another motive for the decrease of recommended changes by the expert auditor may be a longer period of actions connected with financial revision in the researched units, which strengthens the pedagogic effect of these actions. People responsible for preparing the financial reports fulfil their duties in a more competent way.

The analysis of the influence of the actions of financial revision on the financial report in the sphere of a balance sheet enables to draw a conclusion that there is its impact on building a credible image of an economic unit. On the basis of this documentation it was possible to distinguish fields where there was a necessity to introduce changes advised by the expert auditor, between the first reports and their final version. Consolidated<sup>6</sup> profile or

<sup>5</sup> The research made by J. Pfaff concerned the year where there was the change in law after joining the EU. Economic units had to find their way in the new, not always easy to understand, reality of being on the market in the EU which has different regulations than the ones known up till then. However, he does not exclude other reasons of such results collected by J. Pfaff (Pfaff, 2008).

<sup>6</sup> Because of the restrictions on the length of the article a detailed analysis was not made of the particular categories of assets and liabilities composing the balance sheet.

sheet with corrections made in the researched units and in the particular time in the balance sheet are presented in picture 2, and the percentage is shown in table 1.



Picture 2. The structure of changes in the balance's positions, being an effect of financial revision in years 2012–2014

Source: Self-study.

Table 1. The percent structure of changes in position of balance sheet after actions taken in financial revision in years 2012–2014

The changes	Capital assets	Current assets	Equity	Long-term liabilities	Current liabilities	The changes
2012	20%	28%	27%	19%	36%	2012
2013	43%	33%	33%	28%	35%	2013
2014	19%	37%	33%	29%	38%	2014
<b>The average of a three-year time</b>	<b>27%</b>	<b>33%</b>	<b>31%</b>	<b>25%</b>	<b>36%</b>	<b>The average of a three-year time</b>

Source: Self-study.

In every part of the balance sheet there were changes made after conducting the actions of financial revision. Referring the number of correction made because of the expert auditors' initiative to the initial financial report, it can be concluded that over 30% (which is a considerable number) of the financial reports of the researched economic units presented their financial situation in an improper way. This may result from the fact that, part of the data presented in the report was unreliable.

The scale of changes made in the balance sheet in percent is presented in table 1. It can be observed that these changes were made in many of researched subjects. The percent range of the corrections is the set between 19% of changes made in the capital assets in 2014 (35 researched units) and 43% of corrections made in the same category in 2013 (75 units). The rest of the changes made in particular groups or categories of the balance sheet are in the range of money in the subsequent periods of time of research. The number of corrections made by the expert auditors in the financial reports of the researched units can be declared as considerable.

Summarising the results presented in table 1 in particular periods of report in a three-year time, it can be claimed that actions taken in financial revision carried out by the expert auditor had a significant impact on the changes made in the final version of the balance sheet when compared to its initial version in over 30% of researched economic units, which affected the increase in the credibility of their financial report.

The reasons for the changes which affected the balance sheet were:

- The inappropriate presentation of lease (the lease was presented accordingly to the contract which usually concerns the operating lease that should be presented as a financial lease by law).
- The misuse of the depreciating stake of non-physical and legal values and capital assets (accordingly to tax rates).
- The lack of signatures updating the overdue payments and obligations.
- Inappropriate qualification of loans (long and short-term).
- Inappropriate values of assets and reserves from a hold-off taxes.

The changes that took place after verifying the balance sum concern mainly the set between 19 and 43% of researched units in given periods of time, the changes which were made while the examination of financial reports often are up to thousands of Polish zloty (however, there were also correction for over 1 million zloty).

The actions taken by expert auditors in connection with the financial revision in the sphere of assets and liabilities enabled to eliminate the mistakes and abnormalities in depicting particular parts of the balance sheet, which had a considerable impact on the increase of reliability and accuracy of the whole financial revisions of given economic units.

#### 4. CONCLUSIONS

Globalisation in the activity of economic units and the dynamically changing surroundings, as well as evolutions caused by the changing law, may cast some doubts if, in the process of fulfilling one's duties when preparing a financial report, there hasn't been omitted or misinterpreted anything that could have any impact on its final form and the assessment of the economic unit and its situation. Conducting the procedures of financial revision while examining the financial report increases the guarantee that the data presented in the report are reliable, clear, credible and reliable. The continuous work of the auditors gives the receivers, not only the outward ones, the sense of credibility that the financial situation of a given economic unit is exactly as presented in the financial report.

To sum up the result of the researches depicted in this article, which are connected with the analysis of the executed changes indicated by the expert auditors after the procedures of financial revision, it can be observed that the study of financial reports in every part of the balance sheet constantly exerts impact on the increase of credibility of financial reports and

is an inextricable element guaranteeing the proper functioning of the economic subjects on the market in Poland.

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## LEGAL ACTS

- Ustawa z dnia 29 września 1994 r. o rachunkowości (tekst jedn. Dz.U. 2019 r., poz. 351).
- Ustawa z dnia 11 maja 2017 r. o biegłych rewidentach, firmach audytorskich oraz nadzorze publicznym (Dz.U. z 2017 r., poz. 1089).

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## GOVERNANCE IN THE CONTEXT OF AIR AND SPACE. LAW AND MANAGEMENT ISSUES

This article refers to some very important issues such as global governance of Air and Space. There is a big trend between many experts representing different academia's, who did some research referring to global peace and security in general and in more specified areas such as environment, human rights or economy. Interesting is, that many of the researches over the global governance are still being undertaken by different scientists, so the outcomes represent many points of view, mostly international relations and politics. A lot of researches and publications touch the UN system based on the 1945 UN Charter<sup>2</sup>. The aim of this article is to consider if we can say about the global governance in Air and Space domain? What does this definition mean and if it is necessary to use it today? The most important question is the following: if there is a need to create a new global organization in Air and Space or those, which have been created work properly?

**Keywords:** global governance, international organization, aviation, outer space.

### 1. INTRODUCTION

The term "world governance" is broadly used to designate all regulations intended for organization and centralization of human societies on a global scale. The Forum for a new World Governance defines world governance simply as "collective management of the planet"<sup>3</sup>. Traditionally, government has been associated with "governing", or with political authority, institutions, and, ultimately, control. Governance denotes a process through which institutions coordinate and control independent social relations, and that have the ability to enforce, by force, their decisions. However, authors like J. Rosenau have also used the term "governance" to denote the regulation of interdependent relations in the absence of an overarching political authority, such as in the international system (Rosenau, 1999). Some now speak of the development of "global public policy" (Stone, 2008). „Global governance“ is generally defined as an instance of governance in the absence of government. There is no government at the global level. Today's desire is to improve the functioning of global governance what has little to do with wanting to create a world government. "Global governance" or "world governance" is a movement towards political cooperation among transnational actors, aimed at negotiating responses to problems that affect more

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<sup>2</sup> UN Charter 1945, [www.treaties.un.org](http://www.treaties.un.org).

<sup>3</sup> Forum for a New World Governance; Reasons for this Forum for a new World Governance.

than one state or region. It is connected to the international relations, which are one of the areas of social relations. Governance can't be completely unaware of its interdependencies with the rest of the world. These interdependencies are now quite obvious and the need to take into account the interfaces that link different domains is recognised by all (Calame, ed., 2001).

They practically come between the representations of different organized social groups (from tribes, nations, classes and countries to companies, banks, unions, corporations and associations), which are entities developing mutual contacts of different nature. They are both subjects of international law and subjects of all kinds of relations: political, economic, cultural, scientific, technical, military, ideological, informational and others. International relations are distinguished from other areas of social relations that take place within individual countries by three features: 1) greater scope, a greater range of subjects, objects and space; 2) greater complexity of conditions and mechanisms for achieving objectives, interests and values of particular entities; 3) polycentric and poliarc structure of securing maximization of interests and values of these entities in the realities of international life. In cognitive terms, "international relations" are associated with a branch of knowledge, which is a reflection of real international life, an independent scientific research discipline (Kukułka, 2000).

## 2. GOVERNANCE IN AIR

The task of international aviation law is to unify internal regulations, e.i. in the field of civil liability or technical and safety issues. International air navigation requires the use of foreign airspace. The authorization to do so may result from an international agreement (multilateral or bilateral) or from an act by an intra-entity State which exercises sovereignty over the airspace concerned (licenses or concessions) (Góralczyk, Sawicki, 2007). The Chicago Convention 1944 (ICAO Doc. 7300/8) is ICAO's fundamental as well as a multilateral air navigation treaty that regulates the relations of the Contracting States inter se. The preamble of the Convention clearly reflects the fact that the signatory States (ICAO Member States) have agreed principles and arrangements in support of the safe and orderly development of international civil aviation, which are complemented by the objective of ensuring the proper and economic functioning of international air transport services and their establishment on the basis of the principle of equal opportunities (Abeyratne, 2014).

The Chicago Convention recognized the principle of national sovereignty over its airspace and of the freedom of private civil aircraft to fly over the territory of States Parties. The final document of the air conference (concluded on 7 December 1944) consisted of the following parts: 1/ Final Act 2/ Five annexes, namely I – Interim Agreement on International Civil Aviation, II – Convention on International Civil Aviation, III – International Air Services Transit Agreement, IV – International Air Transport Agreement – Five Freedoms of the Air, V – Drafts of Technical Annexes. Documents I, II and V were signed by all delegations, document IV by 17 delegations and Document III by almost all the others. With the exception of Instrument II (Standing Convention), which was to be ratified, the other instruments were to enter into force on the date of their acceptance by the Governments of the Member States, which had been notified to the Government of the United States. Moreover, there is nothing to prevent the signatories of the Convention from granting one another the "freedoms" provided for in documents III and IV (Polkowska, 2004).

The Convention gives the State certain rights, such as the possibility to introduce prohibited zones and temporary flight restrictions (Article 9) and to impose coercive measures on aircraft operating in violation of the rules (Article 3 bis). Each State is also entitled under the Convention to lay down rules on the movement of aircraft within its territory (Article 11), on air traffic (Article 12) and on arriving passengers and cargo (Article 13). The State designates airports and lays down the conditions for their use (Articles 10<sup>4</sup>, 15 and 68). The State is also entitled to inspect foreign aircraft (Article 16). The Chicago Convention imposes a number of obligations on States Parties. These include, inter alia, compliance with the rules for registration of aircraft in one country with transferability (Article 18), ensuring that the aircraft registered therein bear the appropriate nationality and registration marks (Article 20), are properly equipped and have documentary evidence (Articles 29 to 36). In addition, each State exercises the control functions assigned to it over an aircraft. When an aircraft is registered in one State and the operator is established in another, both States are responsible for the unlawful use of the aircraft (Article 3 bis). Other tasks of the Convention include facilitating and improving the navigation and handling of aircraft, crew, passengers and cargo (Article 22), issuing customs and immigration regulations in accordance with the rules of the Convention (Article 23), assisting aircraft in distress, investigating the circumstances of foreign aircraft accidents, allowing the State of registry to send observers and subsequently sending reports and the results of investigations to that State (Article 26). The Convention considers it very important to cooperate in ensuring the uniformity of national legislation in accordance with ICAO standards and recommendations on the safety, regularity and efficiency of air navigation (Article 37).

The Convention on International Civil Aviation, signed in Chicago on December 7, 1944, entered into force on April 4, 1947 (ICAO Doc. 7300/8). This Convention refers to, and in some cases even copies, the provisions of the Paris Convention of 1919 (Freer, 1986). The preamble to the Chicago Convention refers to the development of international civil aviation, which can make a significant contribution to creating and maintaining friendship and understanding between the peoples of the world. The preamble is supplemented by a provision stating that the governments of the States signatory to the Convention will strive to reach an agreement so that international civil aviation can develop properly and, above all, in compliance with the principles of safety.

The text of the Convention was divided into 4 parts: Part I – Air Navigation, Part II – International Civil Aviation Organisation, Part III – International Air Transport, Part IV –

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<sup>4</sup> (Larsen, 2015); ICAO has not managed to reach agreement on an international treaty that would make providers liable for faulty GNSS. Annex 10 to the Chicago Convention is the document establishing GNSS air navigation standards. ICAO adopted Assembly Resolution A32-19 in 1998 to the effect that States shall seek to secure the highest practicable degree of uniformity in the provision and operation of GNSS Services. ICAO has therefore worked extensively on coordination of the GNSS services of the various national providers. ICAO has been able to get GNSS providers agreement to create a seamless interoperable web so that pilots do not need to be concerned about shifting from one GNSS system to another. Author thinks that art 37 of the Chicago Convention gives ICAO function of establishing uniform international standards and recommended practices and procedures. A similar central regime for GNSS could establish uniform operating international standards for GNSS. Under this model standards and recommended practices and procedures for GNSS would be established centrally. The existing regulatory framework for GNSS is weak; in the long run, a much stronger international coordination structure, more like ICAO is needed- one that establish and enforce uniform standard for GNSS.

Final Provisions, with 22 chapters and 96 articles in all (the Paris Convention had only 43 articles). Each article of the Chicago Convention is preceded by an additional title. The official languages of the Chicago Convention were English, French and Spanish (the Paris Convention is drawn up in French, English and Italian). Subsequently, the text of the Convention was also drafted in the Russian, Arabic and Chinese languages (Dempsey, 2015)<sup>5</sup>. Today ICAO uses 6 official languages (English, French, Spanish, Chinese, Arab and Russian).

### 3. GENERAL PRINCIPLES AND APPLICATION OF THE CONVENTION

Chapter I contains provisions on issues such as sovereignty, territory, aircraft and abuse of civil aviation. Article 1 of the Convention gives States complete and exclusive sovereignty over their territory over the airspace. Every State has the right to determine international traffic rights for commercial flights, including the granting or refusal of rights to operate scheduled services to foreign carriers. This text, although commonly attributed to the authors of the Chicago Convention, has been moved here from the Paris Convention (Article 1, first paragraph). It is the Paris Convention, for the first time in the history of aviation law, which has used the term sovereignty. The condition is that this sovereignty is complete and exclusive. It is up to the state to decide who will use its airspace and under what conditions. A State may freely dispose of its airspace, prohibit, prescribe or permit flights, and take all measures provided they are not prohibited by international law. The provision of its own airspace depends only on the will of the country concerned. The conditions of use of this area shall be governed by the national legal order and by international agreements to which the State is a party. As far as foreign civil aviation is concerned, it must operate in accordance with the rules laid down by the national law of the State concerned. This principle has therefore become a cornerstone of air law, breaking with the principle of the Common Aviation Area as a heritage of humanity and the so-called principle of open skies that has prevailed for centuries. Such a provision was proposed back in 1910 at a diplomatic conference in Paris (Żylicz, 1963).

Article 1 refers to the complete and absolute sovereignty of each State over its airspace. This provision does not define the term "airspace", therefore according to some authors it causes misunderstanding and ambiguity in national legislation (Abdurrasyid, 1989). Everyone's word means that the Convention speaks here in the interests of all states, including those that are not parties to the Convention (as in the Paris Convention of 1919) (Jennings, 1945). Many air law theorists will later point out that this is more about freedom of air navigation than about freedom of air itself. There has also been no agreement, and until now there has been no limit to airspace. It can also be a question of whether absolute sovereignty also applied to space at that time, or whether it concerned only absolute, that is, unlimited powers of the state. Article 1 was shaped by the British and Canadian proposals. The US proposal was too narrow (each contracting state) and solutions from the Paris and Hawaiian Conventions were adopted (Coob, 1965; Polkowska, 2011)

The US confirmed the "nationality requirement" in the certification process and reserved cabotage rights for its carriers through the Air Commerce Act of 1926. The US soon

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<sup>5</sup> Furthermore all formal business at ICAO is conducted in six official languages requiring large teams of translators and imposing relatively enormous operational costs. English is a global language of aviation.



raised the national control requirement to 75% through the Civil Aeronautics Act of 1938, but some recognize that despite a number of provisions of the Convention (Articles 1, 6<sup>6</sup>, 17, 18, 31–32) defining State sovereignty over its airspace, the Chicago Convention does not contain a provision on the nationality of the carrier. These provisions started to appear soon in bilateral agreements. These restrictions are considered by some to be detrimental to the development of international civil aviation; indeed, they do not exist in other areas of the economy (e.g. telecommunications, television, banking and even atomization) (van Fenema, 2007). There are also reasons for leaving the nationality rules in the hands of the carrier. These include in particular the protection of national safety, ensuring that the exchange of traffic rights and other rights is used by the carriers of the State which has negotiated the agreement, the protection of national carriers from excessive competition and the avoidance of flags of convenience which do not respect safety and environmental rules (Dempsey, 2007).

Article 2 sets out a territorial limit (land areas and adjacent territorial waters), using the term sovereignty. The text of this Article is broader than that of the corresponding provision in the Paris Convention and favors the signatories to the Convention on larger territories. The geographical scope of the Convention is extended in Article 2 to include the territories of colonies, protectorates and other dependent countries. However, there is no explanation as to whether an area or part of a territory, after its independence, is a signatory to the Chicago Convention. The majority of authors consider that a new state does not automatically become a party to the Convention; it must deposit its authentic instruments with the US depositary pursuant to Article 92 (Abeyratne, 2005).

#### **4. TASKS AND STRUCTURE OF THE INTERNATIONAL CIVIL AVIATION ORGANISATION**

ICAO is a specialized United Nations agency established by States in 1944 for the purpose of administering the administration and management of the Chicago Convention.

The vision of ICAO is to achieve sustainable growth in the global civil aviation system. The mission is acting as the Global Forum of States for International Civil Aviation. ICAO develops policies and standards, conducts compliance audits such as USOAP<sup>7</sup> and USAP<sup>8</sup> dealing with last emerging threats to civil aviation- cybersecurity, conducts investigations and analyses, assists and builds air transport capacity through many other activities and through the cooperation of Member States and stakeholders. ICAO's strategic objectives as part of its current mission to support and enable a global air transport network that meets or exceeds social and economic development and the connectivity needs of global companies and passengers, and recognizes the clear need to anticipate and manage the projected doubling of global air transport capacity by 2030 without unduly compromising the safety, efficiency, comfort and environmental performance of the system, ICAO has established five

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<sup>6</sup> (Abeyratne, 2013) The final consideration is whether the Chicago Convention is adequate for the current aviation scene. The Chicago Convention cannot be superseded by a brand new instrument as many of its provisions are still relevant and useful. However one article at least should be changed- art. 6 saying about permission or authorisation given to scheduled international air service.

<sup>7</sup> Universal Safety Oversight Audit Programme – Continuous Monitoring Approach (USOAP CMA).

<sup>8</sup> Universal Security Audit Programme (USAP).

comprehensive strategic objectives: safety (improving global civil aviation safety<sup>9</sup>; this strategic objective focuses primarily on the state's regulatory oversight capacity. The Global Aviation Safety Plan (GASP) sets out the main actions for three years), efficiency and effectiveness of air navigation (increasing the capacity and efficiency of the global civil aviation system), strengthening global civil aviation security and facilitation, economic development of air transport (promoting the development of a robust and economically viable civil aviation system and environmental protection (minimizing the environmental impact of civil aviation activities) ([www.icao.org](http://www.icao.org)).

ICAO is working with 192 Member States and industry groups to reach a consensus on international standards and recommended practices in the field of civil aviation and on a policy to promote a safe, efficient, safe, secure, economically sustainable and environmentally responsible civil aviation sector.

These SARP's and policies are used by ICAO Member States to ensure that their local civil aviation operations and regulations are compliant with global standards, which in turn allow the safe and reliable operation of more than 100 000 flights per day on the global aviation network in each region of the world.

In addition to its core work of consensus building in international SARP's and Member States' and industry's policies, and among many other priorities and programmes, ICAO also coordinates States' assistance and capacity building to support numerous aviation development objectives; develops global plans to coordinate multilateral strategic developments in the field of safety and air navigation; monitors and reports on a number of performance indicators for the air transport sector; and monitors Member States' civil aviation safety and security oversight capabilities. ICAO shall provide the global aviation community with a comprehensive overview of the annual programmes, activities and achievements of the Organization. These actions are being implemented in support of ICAO's strategic objectives and tasks as defined in the Chicago Convention.

## 5. ICAO AS GLOBAL GOVERNANCE

Particular importance is creating ICAO and its general nature. ICAO (and temporarily PICAO earlier) is fully authorized to adopt any necessary international standards for worldwide unification of the technical and safety procedure so vital to every phase of international air navigation. No further world organization is needed to meet these problems. In the economic and political fields the need for international organization remains unsatisfied. The Convention has given ICAO very limited economic powers, and these are largely of an administrative and advisory character, such as research; study of operation of international

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<sup>9</sup> The ICAO Runway Safety Programme coordinates global efforts to improve the safety of the runway in cooperation with partner organizations, including partner organizations: International Airport Council (ACI); Organisation of Civil Aviation Services (CANSO); European Aviation Safety Agency (EASA); EUROCONTROL; United States Federal Aviation Administration (FAA); Aviation Safety Foundation (FSF); International Air Transport Association (IATA); International Business Aviation Council (IBAC); International Coordination Council of Aviation Industry Associations (ICCAIA); International Council of Aircraft Owners and Pilot Associations (IAOPA); International Federation of Airline Pilot Associations (IFALPA); International Federation of Air Traffic Controllers' Associations (IFATCA). The programme shall support the establishment of multidisciplinary runway safety teams (RSTs) at airports, which shall involve the joint efforts of regulatory bodies, air traffic management authorities, airport operations and aircraft operators.

air transport, including ownership of international services on main routes; investigation of situations appearing to present avoidable obstacles to development of air navigation; collection and publication of information, including cost of international operations and subsidies from public funds. Under certain circumstances ICAO may provide and administer airports and facilities required by international air services. But ICAO has no power to fix or control rates, allocate routes, or control operating frequencies or capacity (Cooper, 1968).

The two main characteristics of ICAO are: that is created by states (the ICAO bends to the will of its membership. It has the ability to influence, but it cannot force any member to act against its national interest) (Mackenzie, 2010), more specifically, as states themselves are abstractions, by duly authorized representatives of States; and they are created by treaty, which is a written agreement signed by the states parties to it and governed by international law. States can only act by and through their agents. Different government departments of instrumentalities of states bear responsibility for different international organizations. In the case of ICAO the most likely government department that would be responsible for the Organization within a state would be ministry or departments of transport or aviation as the case may be. The third characteristics that distinguishes an international organization as a “club” of States without just being the spokesperson or mouthpiece of those states is that it is expected to have a will of its own. ICAO’s independent will recognized by the Government of Canada for purpose of its activities within the country is closed in a provision that ICAO has an identity of its own capable of entering into contracts. ICAO is by no means sovereign in its own rights, although courts have on occasion referred to sovereign rights of an organization merely to seek a compromise between absolute acceptance or parity between a State and an organization and absolute refusal of an international organization’s ability to perform *acta jure imperii* (governmental acts) (Abeyratne, 2012).

Within the reality, however, the organization has considerable ability and a degree of independence to pursue its goals. It has the authority to settle disputes between members, at least in some circumstances, and through its Legal Committee it has been in the vanguard of the establishment of international air law. Both fields, in their own separate ways, deal with solving problems facing the orderly development of international civil aviation (Mackenzie, 2010).

The most simplistic definition of “governance” which may refer to the air domain would be that it is the process of decision-making and the process by which decisions are implemented (or not implemented as the case may be). Governance can be categorized into several institutional bases and used in several contexts such as corporate governance (Jacquet, Pisani-Ferry, Tubiana, 2002), international governance, national governance and local governance. Good governance must be rewarded. Recognition should be given through “satisfaction surveys” where a direct causal nexus could be drawn between the manners in which the worker was enabled to reach a level of satisfaction with governance provided. Positive changes in expectation and results obtained should be weighed against perceived adequacies of the business entity in the provision of services.

Trust in employer, through increased levels of health and well-being (which must necessarily include a sense of security of life, habitation and movement) both from cultural and religious perspectives should be a primary indicator. The elimination of corruption is a key to good governance and civil society, which has been overwhelmingly proactive in building awareness on human right issues, has succeeded in persuading the international community of the value for transparency and honesty in public transactions. Arguably, the most important key to good governance is benevolence and understanding. A good

employer must assure its workforce that it has their well-being at heart and pro-actively move towards achieving that goal (Abeyratne, 2012).

It may be said that ICAO was simply a technical organization outside the realm of international policies. The rise of international terrorism, armed attacks and sabotage, and the interception of civil aircraft brought the outside world into the halls of ICAO and there was no way to escape it. ICAO provided an ideal international stage where antagonists could face each other and international aviation disputes could unfold through political debates, investigate teams and reports and public condemnation. In search for solutions to international aviation terrorism, ICAO emerged as the prime vehicle for the establishment of international air law and the regulations for ensuring aviation security. ICAO embrace the task and its role in aviation security is probably the single most distinguishable feature of its public profile today. ICAO's biggest challenge is to motivate governments to come to agreement on terms, ratify its conventions, implement its standards and take concerted action against terrorism. In pursuing this goal of safety in aviation, ICAO has acted as part legal and technical think-tank and research institute, part information collection agency, part international public forum and debating club, part foreign aid service and as a global regulator, monitor, reference and support group all rolled into one.

The main connotations of safety obligations include the duty to provide safety oversight, the duty to refrain from the use of weapons against civil aircraft in flight and the duty to punish certain criminal acts endangering the safety of civil aviation.

Safety obligations are laid down not for the interest of an individual State, but for a higher purpose: the safe and orderly development of international civil aviation. Traditionally ICAO focused on development and adoption of treaties, standards and recommended practices and other provisions relating to aviation safety, leaving their implementation basically in the hands of its Member States. Since 1990's there has been a paradigm shift from this pattern with the landmark decision to launch the USOAP (Universal Safety Oversight Audit Programme). This initiative was followed by the USAP (Universal Security Audit Programme). The results of the audits demonstrate not only the need to adopt safety regulations but also the more pressing need to enforce and implement them (Huang, 2009).

The 1990's was a decade of resurgence for the ICAO. When the decade began the Organization faced serious challenges from a number of sources, with other groups, organizations and states and regional groupings intruding into area that ICAO had always believed were its own. By the end of the decade it had largely reasserted its role in international civil aviation. ICAO had reassumed a leadership role as the machinery through which the discussion of the economic regulation of international civil aviation would unfold; in aviation safety it had responded to the challenges from the Americans and the Europeans with the introduction of ICAO's safety oversight program; and it had taken the initiative from IATA to amend the Warsaw Convention on aviation liability (1929) (<https://www.mcgill.ca/iasl/files/iasl/warsaw1929.pdf>). In this process, the accomplishments had produced a greater and more direct role for ICAO in the oversight and implementation of its conventions and standards. In the Montreal Convention and Convention on Plastic Explosives (1991) (<https://www.un.org/ruleoflaw/files/3dd90f0c7.pdf>), ICAO, maintained continuous involvement in their revision; and with respect to the latter convention it was a role that ICAO assumed not only for commercial aviation but for the international community as a whole. ICAO ended the decade in a more stable and influential position in the international system (Mackenzie, 2010).

ICAO also had a large group of talented individuals- from aviation specialists and technicians to leaders such as Assad Kotaite (Kotaite, 2013)<sup>10</sup> and others- who provided the skills, knowledge and diplomacy necessary for ICAO to function successfully in the international arena while also maintaining focus on its prime goal of enhancing aviation safety. The modern era had transformed ICAO and brought it an unprecedented degree of public attention in the latter part of the twentieth century. The Cold War may have faded away but this transformation for ICAO was permanent (Mackenzie, 2010).

## 6. GLOBAL GOVERNANCE REGIME FOR SPACE

After launching the Soviet Sputnik into Space in 1957, it became apparent that the principle of state sovereignty over the air space above its territory could not be upheld in relation to space exploration. It was noted that it would be very difficult for individual countries to agree to fly satellites and other devices in orbit more than 100 miles above the Earth's surface. As a result, two new concepts of national air sovereignty emerged after 1957. According to the first, it was considered that, at the height of the trajectory of a spacecraft's, this space was no longer subject to national sovereignty. This would mean that the sovereignty of states over their airspace would be limited to a certain amount, to which it borders with space. However, it is difficult to say where this limit is. (Shaw, 2000). The development of space law was accelerated in 1958, when the UN General Assembly established the Committee on Peaceful Uses of Outer Space- COPUOS. This committee has set up two subcommittees, one legal and the other scientific and technical (Hermida, 2004). This was a turning point for international cooperation in space and for the development of international space law. Another significant step in the development of space law was taken in 1963, when the General Assembly adopted the Declaration of Principles Governing the Exploration and Use of the Space. This resolution laid the foundations for the 1967 Space Agreement. COPUOS then created four other international treaties that regulate human activity in space. In addition, a series of legal principles have been developed for the use of space (including direct satellite broadcasting, remote sensing and nuclear weapons) (Jasentuliyana, 1997).

Since the beginning of the Space Age, international cooperation in the peaceful uses of outer space has evolved in such a way as to provide the impetus for a consideration of international mechanisms and infrastructures for space cooperation and coordination mechanisms at the national, international, regional and interregional levels.

The governance of space, which has been described as humanity's most expansive global commons, has become increasingly complex owing to the growing number of both governmental and non-governmental actors, and to the emergence of new technologies and approaches such as public-private partnerships and private funding initiatives.

Although not yet defined at the intergovernmental level, the concept of global space governance could be interpreted as referring to international actions to or the manner (process) of, governing and regulating space-related activities. As such, it encompasses a wide range of instruments, institutions and mechanisms including international and regional treaties, agreements and regulations, model national laws and regulations, as well as a wide

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<sup>10</sup> A. Kotaite (1924–2014) was a former Secretary-General and Council President of the International Civil Aviation Organization from 1976 to 2006; after retirement, he was named President Emeritus of the ICAO, he was awarded many times for his achievements in maintaining the peaceful and safe development of Aviation; in September 2013, he received the highest honour in the world of civil aviation, the Edward Warner Award.

range of international cooperative mechanisms utilized in space cooperation, guidelines and transparency and confidence-building measures, all of which are aimed at ensuring a certain level of predictability and orderly conduct of space activities.

In COPUOS, the term “global space governance” refers primarily to the institutional framework for the governance of international cooperation in using outer space for peaceful purposes. That framework includes the United Nations treaties and principles on outer space, the relevant guidelines adopted by the Committee and the resolutions on outer space adopted by the General Assembly, as well as supporting efforts undertaken at the national, regional and global levels, including by entities of the United Nations system and international space-related entities. To increase coherence and synergy in international cooperation in space activities at all levels, international initiatives exist for cooperation on specific aspects of the exploration and use of outer space, such as Earth observation and global navigation. Furthermore, multilateral coordination mechanisms are in place through which space-system operators coordinate the development of space-system applications for the benefit of the environment, human security and welfare. Those, too, form an integral part of global space governance<sup>11</sup>. The role of international space organizations is crucial for the political, economic and social environment in which space activities and policies are conducted. There are different classifications of organizations: according to their scope of activities (e.g. national, regional, global), the nature of their ownership and governance (e.g. governmental, mixed and non-governmental), and their functions (e.g. scientific, operational and similar). It should be noted that the number and role of non-governmental organizations, including research institutes, laboratories and other non-profit entities (foundations and the like) is currently increasing. They shall provide expertise and opinions to inter-governmental organizations. These may be scientific or market organizations, supporting space policy making bodies. They all organize conferences and thematic seminars, working groups (for example on space tourism) and cross-border long-term space programs (Edda, 2011).

The legitimacy of international organizations, especially the UN, is significant. Sometimes their activities are criticized as ineffective and not adapted to the contemporary challenges (this applies especially to larger organizations). It is even proposed to replace the existing organizations by a single global space organization. However, it must be borne in mind that it is the States themselves who are members of the organization and it is for their sovereign decision whether or not they wish to join. It is also up to states to decide whether they want to be bound by international treaties and fulfil their obligations. Due to the lack of space, some of the most important organizations are listed below.

### **6.1. Committee on the Peaceful Uses of Space (COPUOS)**

The United Nations has been involved in space activities ever since the very beginning of the space age. Ever since the first human-made satellite orbited the Earth in 1957, the UN has been committed to space being used for peaceful purposes. This launch, as part of International Geophysical Year, marked the dawn of the space age, the first use of satellite technology for the advancement of science, and the beginning of human efforts to ensure the peaceful uses of outer space. This was followed in the 1960's by a rapid expansion in

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<sup>11</sup> A/AC.105/1137, 20 September 2016 Fiftieth anniversary of the United Nations Conference on the Exploration and Peaceful Uses of Outer Space: the Committee on the Peaceful Uses of Outer Space and global governance of outer space activities V.16-05982 (E), p. 2.

the exploration of space, starting in April 1961 when Yuri Gagarin became the first human being to orbit the Earth, and culminating in Neil Armstrong's "giant leap for mankind", in July 1969. In the midst of the Cold War, there was a growing concern in the international community that space might become yet another field for intense rivalries between the superpowers or would be left for exploitation by a limited number of countries with the necessary resources (<http://www.unoosa.org/oosa/en/ourwork/copuos/history.html>). As already mentioned, the United Nations (UN) plays a leading role in the development of space law. In December 1958, the UN General Assembly established the COPUOS Committee, a body made up of eighteen members. A year later, the Assembly granted it the status of a permanent body and confirmed its mandate. From a jury point of view, COPUOS has become a qualified support body (Art. 57 of the UN Charter; <http://www.un.org/en/charter-United-nations/>). Initially, COPUOS was intended to be a political organization with the aim of strengthening international cooperation between space-faring nations and not (as is the case today) a technical organization with the competence to carry out direct operational activities.

In 1959, the General Assembly established COPUOS as a permanent body, which had 24 members at the time, and reaffirmed its mandate in resolution 1472 (XIV) – "International Co-operation in the Peaceful Uses of Outer Space Since" ([http://www.unoosa.org/oosa/oosadoc/data/resolutions/1959/general\\_assembly\\_14th\\_session/res\\_1472\\_xiv.html](http://www.unoosa.org/oosa/oosadoc/data/resolutions/1959/general_assembly_14th_session/res_1472_xiv.html)) then, COPUOS has been serving as a focal point for international cooperation in the peaceful exploration and use of outer space, maintaining close contacts with governmental and non-governmental organizations concerned with outer space activities, providing for exchange of information relating to outer space activities and assisting in the study of measures for the promotion of international cooperation in those activities.

The work of COPUOS has been assisted by the two subcommittees: Scientific and Technical Subcommittees (hereinafter STS) and Legal Subcommittee (hereinafter LSC) (Thaker, 1997). Each subcommittee shall be composed of representatives of the same countries. The complex issues which have arisen alongside the development of space technology are the main concern of the two COPUOS Subcommittees, which met for the first time in Geneva in 1962 and then regularly each year.

Members of COPUOS are States and since 1959 the membership of COPUOS has grown continuously, making COPUOS one of the largest Committees in the United Nations. In addition to States a number of international organizations, including both intergovernmental and non-governmental organizations, have observer status with COPUOS and its Subcommittees. The Committee currently comprises seventy countries, representing about one third of all UN members. In 1961, the General Assembly demanded that the Committee maintain close cooperation with governmental and non-governmental organizations dealing with space issues, and mainly promote international cooperation for the peaceful use and exploration of space. UNOOSA provides the Secretariat services to COPUOS and its two Subcommittees, which continue to serve as a unique platform for maintaining outer space for peaceful purposes at the international level.

The LSC has made a major contribution to the development of international space law (it has succeeded in adopting a number of documents, including five space treaties). Currently, COPUOS and the two subcommittees meet every year in Vienna in bi-weekly sessions to consider the problems proposed by the General Assembly, the reports that are being issued and the issues that have been raised by Member States. Draft documents, including treaties, declarations and resolutions, shall be adopted without a vote by COPUOS and its

subcommittees and submitted to the General Assembly, which is competent to deal with space and space activities, for approval. It meets in annual (ordinary) sessions, adopts resolutions on international cooperation for the peaceful development of outer space, provides guidance for the work of COPUOS and adopts decisions.

The legislative process is very detailed and time-consuming, with many informal discussions and consultations. The first step in the legislative process is to discuss the proposed text at the annual meeting of the LSC (Jankowitsch, 2007). The draft shall then be submitted to the General Assembly of the United Nations. The inter-sessional period shall be used for the consultation of States. Once the text has been finalized by COPUOS, it is sent to the UN General Assembly, which adopts a resolution containing the agreed text and recommends that States adopt it. Some point out that it is fair and takes into account the voices of developing countries (Ferrier, 1995). Others say that the quality and qualifications of the national representatives on the committee are mediocre. This may be one of the reasons for delays in the lawmaking process. One of the Committee's working principles is the principle of consensus, which requires numerous consultations and discussions and takes time in the process.

Although the most important principles – on arms, security and freedom of exploration – have been adopted in the five space treaties, it is hard not to agree that modern technologies have not been included in these treaties, so changes and updates are needed (Barnet, 2003). On the issue of remote sensing, for example, the Committee has tried for thirteen years to find a compromise between rich and poor countries (Jasentuliyana, 1997). Some authors say that 1979 marked the end of international space legislation. Many of them stress the importance of the existing space conventions, but on the other hand recognize that they are outdated and insufficient. The review of existing space treaties should be carried out by technicians, financiers, lawyers and scientists alike, as well as by those involved in day-to-day space operations (Ospina, 2000).

## **6.2. Office for Outer Space Affairs – UNOOSA**

The United Nations Office for Outer Space Affairs (hereinafter: UNOOSA) was originally established as a small expert unit within the UN Secretariat to provide services to the COPUOS Interim Committee established by the General Assembly by Resolution 1348 (XIII) in 1958 (Question of the Peaceful Use of Outer Space [[http://www.unoosa.org/oosa/oosadoc/data/resolutions/1958/general\\_assembly\\_13th\\_session/res\\_1348\\_xiii.html](http://www.unoosa.org/oosa/oosadoc/data/resolutions/1958/general_assembly_13th_session/res_1348_xiii.html)]). The office was initially set up as an experimental small unit within the UN Secretariat to provide services to the Committee UNCOPUOS (Committee on the Peaceful Uses of Space) set up by the General Assembly by the Resolution 1348 (XIII) from 1958. Initially, the Office operated within the UN Department of Political and Security Council Affairs. In 1968 it was replaced by in the Space Unit. In 1992 this unit was transformed into the Office for Space Affairs in the United Nations Department of Foreign Affairs, and has become transferred to the UN Delegation in Vienna.

UNOOSA is responsible for promoting international cooperation in the peaceful uses of outer space. The office serves as the secretariat for the General Assembly's only committee dealing exclusively with international cooperation in the peaceful uses of outer space (COPUOS). UNOOSA implements the Secretary-General's responsibilities under international space law and maintains the United Nations Register of Objects Launched into Outer Space. Through the United Nations Programme on Space Applications, UNOOSA conducts international workshops, training courses and pilot projects on topics that include remote



sensing, satellite navigation, satellite meteorology, tele-education and basic space sciences for the benefit of developing nations. It also maintains a 24-hour hotline as the United Nations focal point for satellite imagery requests during disasters and manages the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) established in 2006 under UNOOSA. UN-SPIDER develops solutions to address the limited access developing countries have to specialized technologies that can be essential in the management of disasters and the reducing of disaster risks. UN-SPIDER aims at improving actions to reduce those risks or support disaster response operations through knowledge sharing and the strengthening of institutions in the use of space technologies. It also facilitates cooperation between satellite data and information providers and the different groups of users of such data, such as policymakers, disaster risk managers or emergency responders. The objective is a better flow of information on disaster risks or disaster impacts between all stakeholders and affected populations (<http://www.unoosa.org/oosa/en/ourwork/un-spider/index.html>).

UNOOSA together with space agencies, organize seminars and conferences. Earth observation is very important from the point of view of climate change (lands and oceans, polar areas, glaciers). Hence UNOOSA cooperates with the UNFCCC (UN Framework Convention on Climate Change). The programs that the office currently deals with are this: UNISPACE III+5, relying on innovation the approach to the implementation of the recommendations of large international conferences (states take action and coordinate it voluntarily in specific areas). UNOOSA makes recommendations for facilities located nearest to the Earth and, if necessary, for Space Mission Planning Advisory Group (SMPAG) and warns against the asteroids (International Asteroid Warning Network – IAWN) (<http://www.unoosa.org>). UNOOSA on a daily basis works closely with UNCOPUOS.

Moreover, UNOOSA is the current secretariat of the International Committee on Global Navigation Satellite Systems (ICG). The office also prepares and distributes reports, studies and publications on various fields of space science and technology applications and international space law. Documents and reports are available in all official languages of the United Nations through this website.

One of the most important tasks of UNOOSA is implementation of the General Assembly and COPUOS decisions. In addition, the Office supports intergovernmental discussions at COPUOS and its subcommittees and assists developing countries in the use of space technology. Issues related to the militarization of space are shared with the Geneva-based Disarmament Conference<sup>12</sup>.

In addition, UNOOSA follows the legal, scientific and technical developments related to space activities and provides advice and information to Member States, international organizations and other United Nations offices. The Office is headed by a Director and consists of two sections: the Space Applications Section (SAS), which organizes and carries out the United Nations Programme on Space Applications and the Committee, Policy and Legal Affairs Section (CPLA), which provides substantive secretariat services to the Committee, its two subcommittees and its working groups. This Committee also prepares and distributes reports and publications on international space activities and on international

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<sup>12</sup> The Conference for the Reduction and Limitation of Armaments of 1932–1934 (so-called World Disarmament Conference or Geneva Disarmament Conference) was an effort by member states of the League of Nations, together with the U.S., to actualize the ideology of disarmament. It took place in Geneva, ostensibly between 1930 and 1934, but more correctly until May 1937.

space law. CPLA also provides substantive secretariat services to the Working Group of the Whole of the Special Political and Decolonization Committee (Fourth Committee) of the General Assembly when it considers the item on international cooperation in the peaceful uses of outer space. As UNOOSA leads UN-Space (the Inter-Agency Meeting on Outer Space Activities)<sup>13</sup>, CPLA convenes and services the sessions of UN-Space. Comprising staff with legal, policy and economics background, the CPLA team works closely with UN Member States in supporting their capacity building efforts in space activities and in building national space infrastructure, by organizing workshops on space law and policy, as well as on organizational questions relating to international cooperation in space activities and on United Nations space-related activities. CPLA also works with other actors, such as regional organizations and mechanisms, in support of their efforts and cooperation in space activities

## 7. CONCLUSION

This article has shown that the global governance is created by the States. The global governance (law, management and policy) may concern every single area. The art of governance is an art of action and execution. Global governance leads to the creation of different institutions- global in nature (such as UN). The global institutions are needed today. Their initiators are the States themselves. The criticism of international institutions relates to the way in which global governance in practice is implemented by governments and institutions (international organizations). It seems that the UN system referring to the Air and Space is a good example of cooperation of states in good spirit. Seemingly it's strictly connected to the technical issues, in which safety and security are priorities for all. There are a lot of entities (ex. institutions) working together. On the other side there was and will be some political influence in those two domains. It may be seen in the elections of the organs, political structure and influence of the powerful states in Aviation or Space.

The Air and Space domain develop very rapidly. The increasing number and variety of players in Air and Space domain, each of which has its own priorities, perspectives, and goals for the structure of the global governance system for Air and Space, complicates the development or revision of frameworks. It seems that there is no need to create a new organization or institution. There is ongoing debate among governments and nongovernmental entities regarding how to build or restructure the global system to address expanding Air and Space activities. There are questions to raise, including, who should be involved in these discussions and to what extent, as well as whether the continued use of forums such as the United Nations is the most efficient way to achieve the desired changes. It seems that States should use the experience of ICAO and UNOOSA in performing the global governance in Air and Space in transparent and trustful manner for the benefit to all mankind today and in the future.

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<sup>13</sup> The United Nations and its specialized agencies conduct a coordinated programme of activities utilizing these technologies. UN-Space, an inter-agency mechanism for such coordination, convenes annual sessions of the Inter-Agency Meeting on Outer Space Activities to discuss current and future activities, emergent technologies of interest and other related matters among UN system entities. For broader stakeholders' consultations, UN-Space organizes informal sessions open to Member States, private sector, non-governmental institutions and academia.

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## INTERPERSONAL RELATIONSHIPS IN SHAPING THE MANAGER'S COMPETENCIES IN AN ENTERPRISE – THEORETICAL ANALYSIS OF THE RESEARCH PROBLEM

Interpersonal relationships play a fundamental role in the development of not only the people (employees) but the whole organization. The quality of these relationships affects the broadly understood development potential of employees and organizations. The aim of the study is to conduct a theoretical analysis of the role of interpersonal relations in shaping the manager's competencies in the organization. The following research hypothesis was adopted: (RH 1) interpersonal relationships and managerial competencies form the *General Interpersonal Relationships of the Manager's Competence*. This study is a review of the literature on the subject. The study has a theoretical and conceptual character.

**Keywords:** managerial competencies, interpersonal relationships, general interpersonal relations of the manager's competence.

### 1. INTRODUCTION

All managers (Leśniewski, 2016) subscribe to the view that people are the foundation of an enterprise. Efficient and effective functioning of a person in an organization depends on many factors, including interpersonal relations and competences. From the point of view of the management process execution, it is the manager who is the source of interpersonal relations that contribute to the creation of the manager's competences. Through interpersonal relations<sup>3</sup> managers create their competences which in turn contribute to the managers' own development and the enterprise's competitive advantage on the market. The ma-

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<sup>3</sup> It should be remembered that interpersonal relationships can be of a *negative* and a *positive* character, which resembles the division between *negative* and *positive* competencies. This study only refers to the *positive* interpersonal relationships and competencies. It is theoretically supposed that each enterprise and the people employed in it focus primarily on positive activities as part of positive psychology.

nager – subordinates as well as the subordinates - manager types of relationships are very important. Interpersonal relationships and managerial competences should form an integrated system for shaping the development of employees of the entire organization. A manager with positive interpersonal relationships can build his own set of competences, thanks to which he will influence subordinates and motivate them to strengthen and improve the organization.

The research problem discussed in this study assumes that the value of the manager's work is the value of his subordinates' work, i.e. the relationships that the manager maintains with other people, which builds his competences. In each organization one can observe a situation where the manager chooses to work with those subordinates (co-workers) who will build the value of the given manager and, as a consequence, the value of the organization.

The aim of the study is to conduct a theoretical analysis of the role of interpersonal relations in shaping the manager's competencies in the organization. The following research hypothesis was adopted: (RH 1) interpersonal relationships and managerial competencies form the *General Interpersonal Relationships of the Manager's Competence*. This study is a review of the literature on the subject. The study has a theoretical and conceptual character.

## 2. THE MANAGER AS A DECISION MAKER

The significance of having a manager in the organization is irrefutable from the point of view of not only the implementation of the management process but also the shaping of its development. A manager (supervisor) is a person whose most important task is to carry out the management process (Banaszak, 2005). The manager is a representative of the management team, therefore, should be characterized by a sense of responsibility, anticipation and strategic thinking. Implementation of the management process is improved by the manager through positive relations with subordinates - whenever the so-called *smooth management* takes place, it is easier to achieve the set goals of the enterprise (of the people working in it).

In practice, managers in organizations differ in their position (place in the organisation's hierarchy) and specialization (field of activity). Taking into account the management level, three groups of managers can be distinguished, i.e. (Banaszak, 2005):

1. *Top management* – a narrow group of managers who most often hold the following positions: president (CEO), general manager and vice president. Their basic tasks include defining strategic and operational goals in relation to the organization they manage. Their most developed skill ought to be conceptual skills, that is, creating new ideas, solutions, etc.
2. *Middle, semi-level management* – responsible for the implementation of the plans developed within the enterprise and for work coordination and control through levels subordinate to them. An example of a middle-level manager is the manager of a given department of the organization. Their most developed skill ought to be their social skills, that is, being able to exist in and cooperate with a group of employees.
3. *First-line, lower management*. employees coordinating and supervising work. Line managers include a brigadier or shift manager. Their most developed skills are technical skills.



Managers can play different roles in organizations regardless of their rank or their specialization. The classical model of managerial roles was proposed by Mintzberg as a result of his analyzing the actual work habits and time management of chief executive officers. Mintzberg identified ten roles common to the work of all managers. They are included in three basic categories:

1. *interpersonal roles* which include the figurehead role, liaison role, the leader role (these role predispose to make relationships),
2. *informational roles* which include the monitor role, disseminator role, spokesperson role (these role are concerned with the information aspects),
3. *decisional roles*: which include the entrepreneur role, disturbance handler role, resource allocator role (these roles are concerned with the manager's process of decision making).

In order to fulfill specific management activities effectively and achieve goals, a manager must possess certain skills to maintain high efficiency. According to Katz, there are three types of skills that are essential for a successful management process (Listwan, 1997):

1. *Conceptual skills* – the knowledge and ability for abstract thinking and formulating ideas (concepts) including coordination, integration of interests and company activities; these skills allow the manager to see the organization as a total entity, therefore it helps the manager to effectively analyze, predict, diagnose and find creative solutions to possible problems and hurdles,
2. *Human or interpersonal management skills* which present the managers' ability to interact and work effectively with people, communicate with groups of employees as well as individuals; these skills enable the manager to maintain good relationships, understand and create motivation for his employees,
3. *technical skills* they concern the operational requirements of a given department or the entire organization and involve their ability to use the tools, methods and techniques of the specific discipline

The *analytical* and *diagnostic* skills are also found in the literature on the subject. They enable the manager to react appropriately in a given situation, eg in the context of diagnosing and analyzing problems occurring in an enterprise by examining their symptoms and preparing appropriate solutions.

### **3. INTERPERSONAL RELATIONS IN BUILDING MANAGERIAL COMPETENCE**

Human capital represents the primary asset and a starting point in the development of an enterprise. As a primary asset, people are the source of interpersonal relationships in an enterprise. Interpersonal relationships are one of the crucial factors in building competence (Rzepka, 2017), not only for subordinates (subordinates' competences), but also for managers (managerial competencies). In a detailed view, interpersonal relationships in an organization are built on the basis of the work carried out, i.e. one can speak about the humanization of these relationships (humanization of work). Mikuła proposes that the essence of the humanization of work should be understood as an understanding of the factors that affect people negatively or limit human rationality, and the methods that allow a person to gain self-realization and satisfaction through his work (Mikuła, 2009). Humanization of relationships in the workplace takes place wherever efforts to empower a working person are undertaken, which influences the development of talents and skills, results in work satisfaction

and contributes to the development of competences. The essence of humanization is expressed through a positive attitude towards staff, the appreciation of their unique individual contribution to the functioning of the organization, and the creation of work conditions that allow them to express themselves through their work. In the manager-subordinate relationship, this would apply to the attitude of managers to the employees subordinate to them. Managers come to the fore when it comes to the implementation of the management process. If they are in good relations with their subordinates, they constitute a team of development prospects in the conditions of a competitive market. The manager (supervisor) and the subordinate (executive worker) are the links of strategic management and operational management. What constitutes the manager's value in the management process are competences. The value of competence was acknowledged by D. McClelland who was the first to use the definition of competence at the turn of the sixties and seventies of the twentieth century. At the time, he proposed an research to find the features he described as the competences of an individual, and not the study of personality traits as had been suggested before. Nowadays, several meanings can be attributed to competence. Initially, they were understood as a formal right to deal with specific matters and make decisions to a certain extent, while representing the given organization. However, the individual's predispositions for efficient and effective operation were associated with qualifications (Oleksyn, 2006). Already in the eighties of the twentieth century, competences began to be treated much more broadly, namely as the scope of duties, rights and responsibilities of the employee assigned to a specific job. A fundamental breakthrough in the context of the discussed topic was the formulation of the definition of competence by R. Boyatzis. He described it as a potential occurring in a human being that leads to behavior, which consequently contributes to satisfying the requirements specified for a given job position within the parameters of the business environment, which in turn results in the desired results (Armstrong, 2007). Ultimately, however, an extended definition of competences was adopted, which at the same time began to replace the term "qualifications". Competences can also be applied to knowledge, because in the practice of managing organizations a competent person is identified with a man of knowledge. This means that a competent person has specific knowledge about a given problem and is able to solve the problem with various methods.

In the literature on the subject, two trends can be identified concerning the definition of competences. *The first trend* concerns competences that are related to the individual's potential. They are often referred to in the literature of the subject as personal competences, which are broadly understood as the scope of skills and knowledge as well as responsibility and authority to act. They are identified with a set of behaviors that certain people perform and master better than others. The result of this situation is that in certain circumstances these people act and perform more efficiently (Sidor-Rządkowska, 2006). Abilities, interests and personality traits are not without significance in terms of personal competences – these are exemplary parameters that differentiate people from one another (Levy-Leboyer, 1997). *The second trend* is a group of terms that refer to competencies correlated with the job or occupational position. In the literature, they are referred to as employee competencies. They should be understood as the scope of potential in the area of work performed by the individual, which consists of a set of characteristics such as motivation, skills, personality traits, self-esteem related to the functioning of the team as well as the knowledge that the individual has acquired and used (Whiddett, Hollyforde, 2003). Employee competencies are the dispositions of the individual in terms of knowledge, attitudes, and skills that allow them to perform their professional tasks at the appropriate level (Leśniewski, 2015).

The key difference between the above-mentioned trends refers to the treatment of competences in an independent, absolute context (first trend) and relativization of competences to the organization's goals (the second one) and the resulting tasks to be carried out. Accordingly, when talking about competences in the work process, it is necessary to take into account the demands made by it. At the same time, the need to achieve specific goals and objectives relating to the organization in the overall dimension should be taken into account.

Competence is understood as the ability to use and apply knowledge in professional aspects. It is a cluster of an individual's abilities to work effectively, to achieve goals and to comply with the required performance standards.

Regardless of the differences in the aforementioned two trends, the vast majority of authors struggle with the need to define competence components. They ultimately make up the general potential that characterizes each individual that is observable in his work and allows him to perform his work at the right level (Armstrong, 2007). The potential of a human being can be identified with competencies that enable people to achieve the goals/goals and the organization in which they work - this can be understood by the following motto: the quality of the employees shows the quality of the enterprise. These words illustrate not only competence but the functioning of an employee in the enterprise. Conducting competence analysis is part of the soft competitiveness of enterprises and soft management (Leśniewski, 2015).

An appropriate point of reference for specifying specialized competence components is the following typology (Sajkiewicz, 2002):

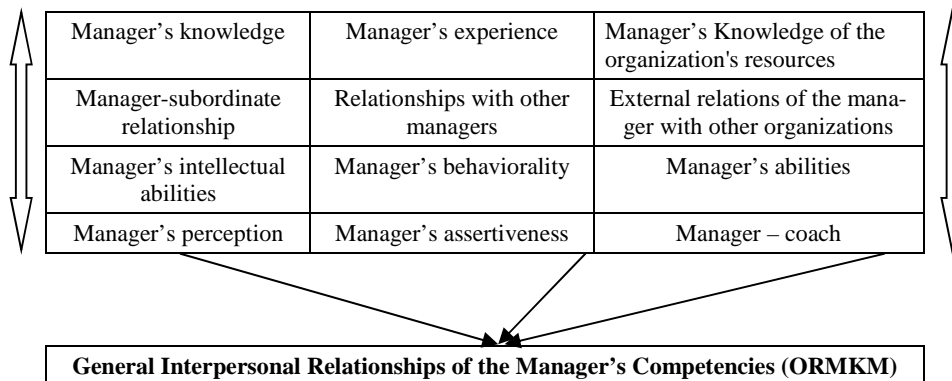
1. *talents*, or the condition of the individual's capital that reflect his development potential. These include, among others, acquiring new and improving the existing competences,.
2. *skills* – knowledge of specific issues and proficiency in related tasks. These include communication, conceptual, technical, organizational and business skills, staff's attitudes towards clients, their attitude to work, as well as leadership skills and managing the staff,
3. *knowledge* – insight into and understanding of theories, procedures, facts concerning the specificity of a given position, occupation, etc.
4. *physical condition* - physical requirements for a specific position. These include, among other things, good physical condition, psycho-physical ability or sharpness of the senses,
5. *work style* – competences that relate to the way the tasks entrusted to the employee are performed. Work styles are divided into the employee and managerial ones,
6. *personality* – a collection of individual characteristics of a human being,
7. *values and principles* – beliefs of the individual influencing determinants of his behavior at the workplace,
8. *interests* – individual preferences of employees that influence their chosen educational and professional career path.

Considering the currently existing market reality, the development of competences is a process forced on the present day enterprises. It is related to the synchronization of internal policy, strategic and operational goals, directions of expansion, taking into account external and internal conditions. Undoubtedly, the organization shaping and verifying its mission and strategy is obliged to recognize possible problems in a very dynamically changing environment and to adapt the competences – among its other assets – of persons employed to the existing conditions.

In order for competences to bring benefits to people and organizations, they must be associated with various aspects of the organization's development. Competencies are associated not only with finance, marketing, logistics or technology, but also with competitiveness, where, thanks to employees' competencies, one can create such a potential that will allow one to achieve a competitive advantage. The link between competences and competitiveness is reflected in the soft competitiveness model by Michał Adam Leśniewski (2015).

The development of competences is associated, among others, with the methodology of designing competence models. The portfolio of competencies should be understood as a set of competences selected in such a way that their use at work could maximize the probability of effective, effective and appropriate performance of tasks by employees, and fulfill their functions in the organization and their position. Depending on the organization, competencies should be shaped in different ways so that they consider the specificity of the work. For example, a scientist should demonstrate competence in creating concepts and ideas, and should publish his work results in various publications (in monographs, articles etc.). However, a person working in the company as a manager should demonstrate competence in assessment, should help subordinates and should be able to cooperate within the structures of the enterprise, etc. Depending on the organization, competences are shaped in a way that they find their recognition in the specifics of a given economic entity. Figure 1 presents the general interpersonal relationships of the manager's competences.

Figure 1. General Interpersonal Relationships of the Manager's Competencies  
Ogólne Relacje Międzyludzkie Kompetencji Menedżera – a conceptual model



Legend: Vertical double-sided outward arrows mean that all the factors of the model must be synergic – complementary to each other and constitute a compact whole.

Source: own study.

The model presented in Figure 1 looks at the interpersonal relationships and the manager's competencies in an integrated manner. The authors of the model distinguish between two categories of interpersonal relationships – *general interpersonal relationships* and *relationships with other people*. *General interpersonal relationships* are interactions maintained by employees within the organization and outside of it. They fall into the broadly-understood category of relationships. On the other hand, the category of *relationships with other people* includes detailed forms of relationships such as the manager's relationship with

subordinates, relations with other managers, the manager's external relations with other organizations. Yet another approach that has been adopted in Figure 1 is the joint approach to interpersonal relationships and managerial competencies in the form of general interpersonal relationships of the manager's competence. Interpersonal relations that shape managerial skills are the starting point of the presented model. The general interpersonal relations of the manager's competences are developed by the general factors that were presented in the model in Figure 1. The order of the factors is irrelevant. There should be interaction between the factors to achieve the effectiveness and efficiency of the presented model. The factors of the model should be considered in terms of quality, because the quality of these factors determines the success in developing this model. No organization is about the number of relationships, but about their quality because they result from quality. The quality of model factors is visible, for example, in the quality of knowledge, the quality of experience, the quality of relationships or the quality of the organization's resources. The word "quality" can be added to every factor of the model: the essence of the word is hidden in the structure of the given factor. The authors of the model assume that the quality of each factor is the starting point for the development of the organization. Each model can be interpreted, which means that the success or failure of the implementation of this model depends on the quality of the manager. In the opinion of the authors, the implementation of this model requires the implementation of a qualitative approach because the employee's quality is the starting point for any changes.

#### **4. SUMMARY**

Interpersonal relationships are the basis for any human-initiated action in and outside the enterprise. The development of the organization can be seen through relationships existing between people. These relationships can create positive bonds – and these have been the subject of this study – as well as negative ones. The manager must create positive interpersonal relationships, not only with other managers but also with subordinates. Positive interpersonal relationships between the manager and the subordinates are at the root of the enterprise's development. The analysis of interpersonal relationships supports the view that these relationships tend to change their character in a dynamic way. Although relationships can be built quickly, they can be destroyed just as instantly by the wrong approach to the employee. As previously stated, interpersonal relationships are the basis of various activities of the organization and contribute to shaping competences. In this study, interpersonal relations are focused on the manager's competences. A wise manager will always listen to employees and will draw conclusions that will affect his decisions. Literature review along with logical thinking confirms the adopted research hypothesis, which takes the form of the following thesis: (T1) interpersonal relationships and managerial competencies form the Interpersonal Relationships of the Manager's Competencies. The research problem formulated in this paper may serve as the basis for further theoretical or empirical research (theoretical-empirical) and strengthen the process of quality management of human resources in the enterprise.

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## CONVERGENCE, SAFETY AND STABILITY OF THE CONTEMPORARY BANKING SYSTEM – SELECTED ISSUES

The study is descriptive-systematizing. Selected issues related to the convergence, security and stability of the modern banking system and financial innovations were made. The phenomenon of convergence and institutional-structural features of the models of the financial system were discussed. It also presents the impact of convergence in the financial system on its stability in the theoretical perspective, with particular emphasis on the factors of financial instability in the shot of H.P. Minski. It seems unlikely to analyze changes in financial systems in a holistic way in terms of their similarity. It is more appropriate to analyze modifications, including similarities and differences in financial systems of different countries through the individual elements of these systems. This particularly applies to financial innovations in the product, process and organizational dimension. It was noticed that the elements of the financial system seem to evolve in such a direction that financial innovations show significant similarities in countries with diverse financial systems.

**Keywords:** financial system convergence, stability of banking system, safety of banking system, models of banking system, deregulation.

### 1. INTRODUCTION

The global financial crisis that began in the United States in 2007 is one of the biggest crises in the history of the global economy. Its course can be traced to the model of investment imbalance and financial instability of H. Minsky. It seems that today in the conditions of existing interdependencies between countries and the convergence of financial systems, the international transmission of financial crises is a consequence of progressive convergence.

The aim of the study is to descriptively-systematise the concept of convergence and security of the banking system, and thus to make some kind of introduction to the issue of convergence and its impact on the stability of the modern banking system. The considerations undertaken are a contribution to the further analysis of the problem, including describing and examining the dependencies and their directions between convergence and financial stability. Due to the breadth of the notion, the financial system in the elaboration is limited to the banking system, which in the continental model is its main element, and universal

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banks accumulate a significant part of the assets of the entire financial system<sup>2</sup>. The study is the author's starting point for a comprehensive analysis of the impact of financial convergence on the stability of the banking system. The research method used in the preparation of this study was the analysis of domestic and foreign literature.

## **2. CONVERGENCE OF FINANCIAL SYSTEMS AND INSTITUTIONAL-STRUCTURAL FEATURES OF MODELS OF THE FINANCIAL SYSTEM**

The national financial systems in recent decades have been influenced by such factors as globalization, deregulation and liberalization, and the development of information and communication technologies. Financial deregulation and innovations introduced in the last two decades of the 20th century stimulated the development of financial markets.

The elimination of barriers between types of financial intermediation and financial services leads to the similarity of financial products and markets. In this sense, one can talk about the convergence of financial systems, which are strongly differentiated and protectionist, evolving towards the single market. A sign of convergence is the increasing importance of the capital market in the accumulation and allocation of capital in the economies of countries in which the continental model of the financial system has developed and the increase of universalism of financial intermediaries leading to the unification of their product offerings and organizational structures.

In the considerations on the convergence of financial systems one can distinguish several threads, which in the most general terms refer to the causes of this phenomenon, the strategy and organizational forms of financial intermediaries and potential threats and risks resulting from the similarity of financial systems (van der Berghe, Verwiere, Carchon, 1999). In the last case, the phenomenon of "financialization" and the financial crisis of 2008 are widely considered (Księżyk [red.], 2013). One of the currents of the debate on the convergence of financial systems is to consider the consequences of globalization and financial deregulation for the internationalization and harmonization of the financial sector regulation system, and thus the model of functioning of financial intermediaries. Ł. Jabłoński points out that the convergence of the regulatory sphere can be treated as a process of countries becoming similar in terms of functioning socio-economic institutions, including formal institutions, which are undoubtedly financial intermediaries and central institutions of the financial system (Jabłoński, 2012). From the previous considerations on the convergence of financial systems, it follows that the discussion focuses on attempts to answer the questions of what are the convergence factors, how it is approached, and how to measure the degree of modeling of the financial system models (Berger, Boot, Thakor, 1997; Mester, 2003; Bos, Kolari, van Lamoen, 2013).

One of the spheres of the market economy in which convergence takes place is the domestic financial system. In general terms, it is a set of commercial institutions and mechanisms allowing the accumulation and allocation of financial capital in the economy. Thus, it is an infrastructure enabling the meeting of supply and demand for capital (the entity side) as well as standards and financial instruments that are used for this purpose (subject). The functions of the financial system are classified in the literature using various criteria. Apart

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<sup>2</sup> Banking systems in individual countries show big differences. This is a consequence of the regulation that these systems are subject to.



from the deliberations on the differences between the financial system and financial markets, it can be assumed with some simplification that the functions of financial markets are identical to those of the financial system because their implementation by the financial system supports economic development (Balcerowicz, 2001).

The literature on the subject shows that there are basically three perspectives for describing and analyzing the financial system: institutional approach, financial intermediation and functional. The institutional analysis is dominated by a descriptive approach focusing on describing the institutions of the financial system and their activities. A frequently accused allegation is that it is incomplete, but nevertheless sufficient to characterize the structure of the national financial systems and to differ between them. In the second case, the involvement of banks and other financial institutions in the process of financial intermediation is highlighted, taking into account various types of transformations and mitigating the conflict of interests between the capital providers and the borrowers. The key role is played by financial intermediaries (financial institutions), and among them the most important function is fulfilled by banks that transform the acquired funds into long-term capital. It seems that the progressive integration of the functions of financial institutions requires a functional approach that overcomes the limitations of both previous ones. In this case, the emphasis is put on the functions that the financial system implements for the economy (Marton, Bodie, 1995; Schmidt, Hacketthal, Tyrell, 1999; Bodie, Merton, 2000; Allen, Chui, Maddaloni, 2004).

The reasons for the convergence of financial systems can be seen in the processes of consolidation of financial institutions, intensification of cross-border financial operations, technical and technological progress as well as the universalization of banks' offer and creation of financial conglomerates. In addition, in the deregulation and liberalization of most economies and financial innovations, in particular in asset securitization. These factors affect the financial systems in a combined way (Kulawik, 2008). As a result, the modern capitalist economy aims at a model that would combine the features of the financial systems of the most developed world economies, i.e. system convergence.

Taking into account the stages of the evolution of the financial system, at the level of significant generalizations, two basic models of raising capital can be indicated. The criterion for distinguishing these models is the dominant type of financing in a given economy: direct based on financial markets and indirect with the dominant role of financial intermediaries<sup>3</sup>. On this basis, a market model is distinguished, based on financial markets with a significant role of the capital market and, consequently, financial institutions and instruments characteristic of this segment of the financial market (Anglo-American model) and a banking model in which universal banks through a bank loan provide capital to economy (German-Japanese model)<sup>4</sup>. The presented classification, despite the fact that it is probably the most used one, did not resist criticism. The main objections formulated in its direction is the limitation of a group of countries on the basis of which the model of the financial system is determined to the United States of America and the United Kingdom in the case of the market model (Anglo-American) and Germany and Japan in the German-Japanese model, and also a false assumption about the existence of two ideal models of the financial system while in practice both forms may occur in parallel (Matysek-Jędrych, 2007). In ad-

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<sup>3</sup> The model is characteristic of the economy of the USA and Great Britain.

<sup>4</sup> A model characteristic of continental European countries and Japan.

dition, international surveys emphasize that although there is evidence of a relationship between the degree of development of the financial system and the level of economic growth, there is no confirmation that any of the models of the financial system separated on the basis of this classification has a better impact on economic growth (Levine, 2002; Demirguc-Kunt, Huzingo, 2000; Solarz, 2005).

A characteristic feature of the continental model is the acquisition of external financing by enterprises primarily in the form of bank loans granted to them by universal banks. This determines the model of the banking system, which in developed countries is highly concentrated and based on universal banks. Other types of financial intermediaries are less developed (eg investment funds, such as venture capital funds). In this model, universal banks play a dominant role in the financial market and are of particular importance for ensuring efficient, proper, effective and safe functioning of the entire financial system and, as a consequence, of the economic system. In an indirect way, when deciding on the availability of financing sources, banks influence the implementation of investment projects. In the continental model there is also a proper form of corporate governance (corporate governance) consisting in the monitoring of ventures and borrowers by banks.

In the market model, enterprises acquire financial capital primarily through issues of transferable financial instruments (mainly shares). The supply of liquid instruments competing with the classic forms of investing the rate of return on capital is an impulse for the development of this market. As a result, the liquidity and depth of the capital market increases and contributes to easier obtaining of financial capital from this market and to the development of investment funds. They offer investors the opportunity to reduce the investment risk while ensuring a return rate higher than bank deposits. The liquidity characteristic of the stock market creates impulses for obtaining and analyzing information, which increases the probability of achieving profits from completed transactions. The increase in the role of investment funds limits the importance of universal banks, which mainly perform payment and settlement functions (*Development of the financial system...*, 2014).

The structural features of this financial system model include the financial market as the dominant form of the institution and a clear specialty of financial institutions, including banks that display the profile of a deposit and credit bank or an investment bank. The degree of concentration of the banking system in the Anglo-American model is low, while the segments of the financial market are characterized by high degree of liquidity. In addition, the capital market strengthens corporate governance and facilitates mergers and acquisitions of enterprises.

There is no evidence in the literature for the existence of an advantage of any of the financial system models discussed. It turns out that the impact on economic growth has a degree of development of the financial system, not its structure (Demirguc-Kunt, Huzingo, 2000; Demirguc-Kunt, Feyen, Levine, 2011). In practice, you can talk about a certain “complementation” of both models in different proportions and the following relationships:

- the high-growth and liquidity stock market can offset the negative effects of the banks' advantage over enterprises,
- banks and markets provide financing for diversified business entities.

A cross-sectional study on the convergence of financial systems in Europe in the period 1980–1998 shows that it was impossible to talk about financial systems becoming similar. The German financial system was close to the continental model with the dominant role of universal banks, while the structure of the financial system in the United Kingdom demon-

strated the characteristics of the market model. However, the changes in the structure of the financial system in France have been noticed, which is difficult to clearly identify as a continental or market one (Schmidt, Hackethal, Tyrell, 2001). This statement is confirmed by more recent studies, which are a comprehensive international comparative analysis of the structure of the financial system. It shows that four groups of countries can be distinguished due to the criterion of financial market dominance or banks in the financial system (Bijlsma, Zwart, 2013). Firstly, countries with market financial systems (the Netherlands, the United Kingdom, Belgium, Finland, France and Sweden), secondly countries with a model of a financial system dominated by banks (Austria, Denmark, Germany, Greece, Italy, Portugal, Spain), then the financial system of the countries of Central and Eastern Europe (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) and others (Ireland, Malta, Cyprus, Luxembourg), which are characterized by a very large banking sector and a high ratio of loans to GDP.

A general analysis of the structure of the financial system in Poland leads to the conclusion that it is close to the banking model. In the assets of the financial system, the largest share is held by banks (around 85% of GDP), which are the main providers of capital for the enterprise sector. In recent years, however, it can be noted that the importance of banks in the financial system is reduced in favor of other financial intermediaries (insurance companies, pension and investment funds) active in the capital market. This is probably the result of the growing level of development, higher liquidity and depth of the Polish capital market.

### **3. STABILITY AND SECURITY OF THE BANKING SYSTEM**

The stability of the banking, financial and economic system gained in importance at the beginning of the 21st century. This was mainly due to the negative effects of the financial crisis 2007–2008, which severely affected many countries at different levels of development. Comparative arguments from international comparative studies suggest that the efficiency of institutions creating and operating within the banking and financial system significantly determine the functioning of the economic system per se on the one hand, and on the other is an important factor stabilizing the course of real economic processes, ie growth and economic development (Barlevy, Tsiddon, 2006; Bordo, Meissner, 2011; Beer, 2012). Negative experiences of this crisis have shown that disruptions in the area of stability may cause disturbances on the financial markets and in the real economy. Therefore, the efficiency of banking and financial systems is or should be the goal of not only the institutions of the state acting as a macroregulator of real processes, but also institutions that are part of the financial sphere of the economy.

The experience of banking indicates the existence of dependence between the reliability and good condition of banks and economic efficiency. The efficiency of the banking system determines the functioning of modern economies. This is confirmed by the relationship between the degree of development of financial markets and the economy (Levine, 1996; Wojtyna, 1997; Summers, 2000; Kose, Prasad, Rogoff, Wei, 2006). A. Wojtyna explains that theoretical and empirical studies seem to confirm the hypothesis about the significant influence of modernity and the stability of the financial system on the rate of economic growth. With the increase in real national income per capita, the share of financial institutions in creating national income (financial deepening) increases. In practice, this means

that an increasing portion of assets takes the financial form. In the conditions of rapid economic development, the increase in the average value of assets of financial institutions to national income is also faster. Therefore, it is legitimate that in each state, due to the functions performed, the efficiency of the banking sector is an essential factor in the development of the entire economy. Disruptions in the functioning of the banking system may jeopardize the stability of the entire economy, including by disrupting the process of collecting funds and allocating them for investment. Central banking system institutions play an unrivaled role in ensuring the stability of the banking system. Against the background of the 2007–2008 crisis, it can be said that the shape, development and functions of the Financial Safety Net (SBF) should adapt to the changing conditions of the internal and external environment.

In the literature on the subject, there is a discussion on the concept of financial stability. The conclusions from it lead to the conclusion that the issue of defining financial stability can be approached in two ways: specifying what is financial stability or by defining the opposing concept – financial instability (Zygierewicz, 2013). The existing definitions emphasize the relationship between the financial system and the real sphere of the economy: on the one hand, the condition of the economy depends on the efficiency of the financial system, and on the other hand the state of the economy may be the source of external shocks that disturb the system. At the same time, the financial system alone is able to prevent crises (Szczepańska, Sotomska-Krzysztofik, Pawliszyn, Pawlikowski, 2004). The stability of the financial system is also defined as a state in which the financial system performs all its functions in a continuous and effective manner, even in the event of unexpected and unfavorable disturbances on a large scale (Solarz, 2001). It is noted that in conditions of banking system stability there may be incidental problems in some institutions, changes in asset prices or bank failure. However, as long as they do not threaten the entire banking system, the stability of the banking system is still being discussed.

The financial crisis of 2007–2008 has significantly contributed to the attempt to redefine the security and financial stability and the role of the SBF institution in its provision. The analysis of the literature, however, leads to reflection that attention is focused on systemic risk and providing prudential solutions adequate to its scale. Attempts are made to identify and classify sources of financial instability (*Global Financial Stability Report...*, 2008; Bullard, Neely, Wheelock, 2009).

#### **4. CONSEQUENCES OF FINANCIAL SYSTEM CONVERGENCE FOR SECURITY AND STABILITY IN THE THEORETICAL PERSPECTIVE**

The financial convergence that has taken place in the banking system in the last two decades of the 20th century and at the beginning of the 21st century, beyond the undisputed positive influence, also caused threats to its security and stability. Most of these threats may be associated with the already mentioned processes of globalization, financial liberalization and progress. technology. The IMF surveys show that these threats can be divided into: macroeconomic sources of instability and sources specific to the banking sector (sector-specific sources). One of the economists who thoroughly examined and comprehensively explained the crisis phenomena in the economy, including the reasons for the instability of the financial system was H.P. Minsky (Minsky, 1986). In his research he paid attention that the economically dramatic events of the Great Depression and the Second World War following them, resulted in the development of solid stabilization mechanisms in the American

economy. However, the stable structure of the financial system being a legacy after the Second World War and the financial conservatism developed as a consequence of the “Great Depression” disorders (which together contributed to the stability of the system), over the years lost their importance under the influence of new economic trends. As a result, the deregulation of the 1980s has evolved a new structure of the financial system, on the one hand more flexible, with significant benefits for market participants with an open approach to innovative market practices, on the other hand more complex, less stable and more prone to crisis. As Minsky rightly pointed out, in different periods the economy operates differently and its mechanisms are subject to the impact of diverse conditions. For example, the American economy of the 1970s and 1980s was more volatile than it was in the 1950s, in the early 1960s and even in the 1960s, and this should be attributed to, among other things, changes in the structure of financial liabilities and in changing financial standards. The financial standards are reflected in the conditions for settling liabilities. These conditions reflect the current trends in the financial markets and expectations as to their future changes.

According to Minsky, one of the important reasons for the sensitivity of the modern financial system can be considered changes in the structure of financing enterprises and households. Today, to a much greater extent than even a few decades ago, both enterprises and households finance their current projects (consumption) and investment projects from external funds obtained on the financial market. The greater than ever exposure of companies and individuals to the financial market, including in particular its debt segment, makes the financial condition of these entities to a greater extent dependent on the current conditions on the financial markets and vice versa – the stability of the financial market to a greater extent than ever before depends on the condition of enterprises and households participating in operations on this market. As another reason for the greater vulnerability of the modern financial system to crisis phenomena one should indicate changes in the structure of liabilities of business entities; in recent decades, the share of short-term liabilities has been gradually increasing at the expense of long-term liabilities. It results from the tendency to finance long-term investment undertakings of companies with short-term indebtedness, which is then rolled up. The main reason for the more risky deviation from long-term financing to short-term financing includes higher costs of servicing long-term debt, whether in the form of loans or issuance of debt securities. Under normal conditions, short-term interest rates are lower than long-term rates, due to the risk of financing, higher in the long run. The consequence of changes in the structure of liabilities is related to another reason for the sensitivity of the modern financial system, namely the repayment of liabilities from the ability to incur new ones. Nowadays, payable liabilities, both in their interest part and in the capital part, are regulated by funds generated internally by the company (eg revenues from the sale of goods or services) or by households (remuneration), while the form of regulating matured liabilities due to their refinancing, ie the repayment of liabilities from funds obtained from a new loan (rollover), is becoming more and more popular. The reason for susceptibility to crisis phenomena of the modern financial system can also be seen in the dynamic development of the segment of “exotic” financing instruments. Because the “inventors” who are rewarded with the interest of issuers and investors and finally additional revenues for the creation and successful launch of a new generation financial instrument, entire staffs of professionals and financial engineers are working on more and more exotic and dynamic solutions for the financial market.

Deregulation also introduced changes in the concept of regulating the financial market. Modern “legislative thought” aims at influencing economic processes to a minimal extent, only in what it is necessary to stimulate economic growth. Legislation also affects the mechanisms of the financial market (through legal acts and central bank policy) and attitudes of participants in this market, but the legislative initiative in the field of financial market is undertaken mostly only in those areas in which the market directly affects the real economy. As Minsky pointed out, one of the most important reasons for the greater crisis threat of the modern financial system is the increase in risk appetite among financial institutions. Banks, like most business entities, are institutions geared to profit in their operations. Banks also have their owners – shareholders who in return for providing capital institutions (through the purchase of shares) have specific expectations as to the rate of return on this investment. Because the relationship between risk and return on investment has a positive slope, only by accepting a higher level of risk, banks are able to generate high returns on capital for their owners. It can also be said that the growing tendency of banks to risk in recent decades was “supported” in the past by government intervention measures in critical moments for the banking sector; Bankrupt banks on the verge of bankruptcy received government assistance.

## 5. SUMMARY

The article attempts a descriptive-systematizing approach to the phenomenon of convergence, security and stability in the banking system, and thus introducing the issue of convergence and its relationships with the mentioned categories. On the basis of the considerations, some observations may be made, which, however, are not general conclusions. These require further research into the relationships of financial convergence with the security and stability of the banking system.

First the issue of financial stability and security can be considered from the perspective of institutional, functional and regulatory changes understood as convergence. Models of financial systems are constantly changing under the influence of conscious or unintentional actions. In addition to shocks and technological changes, the evolution of national coordination mechanisms (macroregulation, economic policy), these models are subject to modifications, especially under the influence of globalization resulting from the expansion of global capitalism. Financial stability is a public good in a market economy. Secondly the importance of financial stability results from the role and functions of financial institutions in the economy, regardless of the model of the financial system. There is agreement that the stability of the banking system is a sine qua non condition for maintaining the stability of the entire financial system, which together with its security determines the smooth and proper functioning of financial markets. Thirdly it was noted that the definitions of financial stability underline the relationship between the condition (safety, situation) of the financial system and the real sphere of the economy. This means that the economic situation may cause disruptions in the functioning of the system. However, it should be emphasized that the financial system may operate even under conditions of individual disturbances (incidental problems in some institutions, changes in asset prices), as long as they do not destabilize the whole financial system. Fourthly, the convergence in the financial system, except for the positive phenomena, also brought about other threats that can be divided into: macroeconomic sources of instability and sources specific to the banking sector. According to H.P. Minsky deregulation in the 1980s has developed a new, more flexible structure of the

financial system, which provides benefits for market participants with an open approach to innovative market practices. However, due to its complex structure, it is less stable and more vulnerable to the occurrence of crises. Important reasons for the possible instability of the modern financial system include changes in the structure of financing enterprises and households, making repayment of liabilities conditional on the ability to incur new ones and an increase in risk appetite among financial institutions.

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## AN ANALYSIS OF THE COSTS OF THE INITIAL PUBLIC OFFER ON THE POLISH MARKET AS DETERMINAL OF THEIR OF THEIR BEHAVIOURS

Undertaking the decision to carry out the public offering requires maturity and great knowledge regarding the complex time- and capital-intensive IPO process from the owners. The main purpose of the deliberations conducted by an author is to define the concept of the initial public offering, the characteristics of the advantages and disadvantages, with particular emphasis on its costs as well as factors determining the success of the initial public offering on the stock market in Poland in the years 2008-2017. The calculations were based on information included in the current reports that – according to the binding law in Poland – the entity introducing securities to trading on the official stock exchange market is obliged to publish after subscription or sale of shares.

**Keywords:** first public offer, market, direct cost, indirect cost, stock exchange, share.

### 1. INTRODUCTION

Among an increasingly broader range of financing possibilities, implemented investment activities, a wide offer in this area is offered by the regulated stock market. This market, also subject to the international competition, concentrates the demand for financial instruments offered by issuers more and more effectively. It is a place for raising capital on more and more competitive conditions. As compared to others, alternative sources of financing, including private placements on a regulated market, it is easier to find investors and get a higher sale price of the offered securities. These securities are usually of a share or debt nature. Skillful use of the public market offer enables to provide the company with funds for development, to improve its market position gradually, find a strategic investor or create an attractive image among clients and contractors (Wisła, 2007).

The decision on the company's debut in the stock market is not strictly a financial choice, resulting only from the need to obtain funds necessary for its development, however, it undoubtedly has a strategic dimension. Making the company public makes is connected with the necessity of its earlier creation of the good image that will attract the interest of the investors and – as a consequence – will bring capital to the company. The success of the Initial Public Offering (IPO) is largely dependent on the quality of the conducted process,

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the involved entities and efficient communication with the participants of the capital market through a wide range of the information channels (Furmanik, 2017).

The main purpose of the author's deliberations is to define the concept of the initial public offering, the characteristics of the advantages and disadvantages, with particular emphasis on its costs and factors determining the success of the initial public offering on the stock market in Poland in the years 2008–2017. The research period which was chosen by the author was dictated in particular by events that took place in 2008 when the global financial crisis broke out and the crisis phenomena are still present in the economic and financial reality of the world. This will allow us to answer the question whether joint-stock companies in Poland also decided to conduct the initial public offering during the time of crisis and how the direct costs of raising capital through the IPO were changing.

## 2. THE CONCEPT AND THE ESSENCE OF THE INITIAL PUBLIC OFFERING

Pursuant to the definition included in the Act on Public Offering and Conditions Governing the Introduction of Financial Instruments to Organized Trading and Public Companies (Act of 25 July 2005...), 'a public offer is providing access to at least 150 people or to an unlimited addressee, in any form and manner, information about securities and conditions of their acquisition, constituting a sufficient basis for the decision to acquire these securities'. An important element of this definition that determines that the offer is 'public' is a wide circle of its addressees. All offers addressed to designated recipients, the number of which does not exceed 149, are legally treated as private offers<sup>2</sup>. In addition, all offers in which the addressee is unmarked are treated as public offers. All offers whose information is disseminated via mass media, including the internet, are of such nature and the information about a particular offer is available to all interested investors. At this point it is worth noting that conducting a public offer does not always have to be related with introduction of shares into organized trading, and in particular their introduction to trading on a regulated market. The mechanisms of the initial public offering in specific countries differ taking into account the manner of valuing shares and its further allocation, the role and share of the issuer, the underwriter and the investor. From the issuer's point of view, the optimal mechanism of this offer is one that enables to maximize the income from the issue of shares (Draho, 2004).

Currently, Polish law defines only the concept of public offering and it does not define the concept of the original public offering. However, it is easy to say that this is public offering that is being carried out for the first time. This means that before this offer is conducted, the company is non-public, i.e. the group of its shareholders is limited. In the case of public offers, it is important to provide investors with all the information that will allow them to assess the investment risk adequately. This is so important in the aspect that the offer can reach investors who do not have broad knowledge and experience in the capital market (Sieradzki, 2016). The issue of new shares can be carried out according to three main models:

- closed subscription, by directing shares only to current shareholders by implementation of their pre-emptive rights,

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<sup>2</sup> In the period covered by the study, the criterion of the number of entities determining whether the offer was treated as public or as private has changed. In the period from January 2003 to July 2005. this limit was 300 people, in the period from August 2005 to April 2013 it was 100 people, and after that period 150 people.

- private subscription, by submitting an offer to a marked recipient, most often a strategic investor,
- open subscription, by raising capital on the open financial market.

Under the terms of a closed subscription, the issue price determined by the current owners will take into account both the capital needs of the company and the financial capabilities of the shareholders. Possible underestimation of the value of shares (relative to book value and market value) and expectation of higher capital gains, discounting ones, e.g. earlier decisions regarding the distribution of net profit may be in their interest. This group of investors interested in the purchase of shares and maintaining their position in the company also expects future participation in the benefits resulting from the implementation of the anticipated investment projects covered by the acquired capital. It has the most comprehensive range of information about the company's intentions, as a result the scope of asymmetry of information, which does not always limit conflicts of interest between owners and management is the lowest here.

Resignation of subscription rights by shareholders and other mode of issuance may occur in cases when the market prices the company higher in relation to the estimated value of the investment projects. This may also apply when the following are expected:

- significant dispersion of shares to secure the liquidity of the market, acquisition of a larger block of shares by the owners than it results from pre-emptive rights,
- obtaining significant financial resources in the shortest possible time, gaining strategic investors, with possible appointment of entities responsible for the implementation of the development strategy,
- creating the possibility of setting the issue price via the market (e.g. making the issue public).

It is vital to pay attention to the situation in which the issue of shares is directed to a strategic investor that is supposed to ensure, among others, access to specialist know-how, more effective management methods, improve the competitive position on the market, often secure the implementation of a specific development strategy or reduce the dominance of the founders of the company. In this case, it is possible to negotiate the issue price that is favourable to the investor and the company directly, with its possible possibly increase for additional privileges (e.g. in the field of dividends or voting rights).

An open subscription requires market verification of the company's operations, and in this case a wider assessment of numerous factors determining the expected and actual share issue price is necessary. It is essential to pay attention to the highlighted stage of enterprise development and the adopted development strategy. This is always related to additional elements of risk and uncertainty, the need for extra information about investment plans, assessment of the future structural changes, which may reduce the chances of optimal determination of the issue price. The issuer expects full market acceptance of the assumptions of the development strategy, securing capital needs and accepting the expected benefits related to this. Two situations which may determine – to a different extent – the final level of the issue price should be distinguished:

1. The company is a public company and previous share issues are traded on the market and may constitute a possible basis for comparison for determining the price.
2. The initial public issuing of shares is made and possible comparison with similar companies is possible (with the assumed comparability criteria).

In these cases, investors' assessments are made under conditions of a more or less effective market, different access to the market information and possibility of assessing the actual and future economic potential of the issuer as well as different levels of expected and accepted risk. Therefore, it is important to know and assess the factors that determine the final determination of the issue price which secures the expectations of both the issuer and the investor.

### **3. FACTORS DETERMINING THE SUCCESS OF THE INITIAL PUBLIC OFFERING AS WELL AS ITS ADVANTAGES AND DISADVANTAGES**

The success of the public offering measured by the company's accomplished valuation, the scale and variety of demand for shares and its public reception is closely related to numerous factors influenced mainly by the issuer, its management and shareholders, but also professional advisors involved in the preparation of the transaction. In the literature, examples of these major elements influencing the level of the issue price include (Łukasik, 2010):

- the impact of the share issue on the company's ownership structure and the form of their subscription,
- size and type of capital needs of the company as well as capital management,
- the stage of the company's current development, its further development strategy,
- planned investments and the accompanying risk,
- the company's position on the market.

The fact that assessment of issuers and investors is made in the conditions of a more or less effective market, with a diversified access to information (asymmetry of information) regarding the current and future potential of a particular company is also of great importance while determining the share issue price (Golec, Wrońska, 2014).

D. Sukacz divides the factors determining the issue price into internal ones, directly related to the condition and perspectives of the company's development and other factors which include primarily the situation on the equity market, the condition where a specific industry is located, the size of the public offering, size and frequency of the public offers made by companies in the industry in which the company operates (Sukacz, 2005).

U. Malinowska also emphasizes that both in the group of issuers and investors, success depends on familiarization with the mechanisms of the capital market functioning and acquisition of relevant knowledge regarding the factors influencing the changes in share price levels (Malinowska, 2011). Furthermore, the intense development of the financial markets and the turbulence occurring on it have caused that the complex process of determining, forecasting stock prices should include the fundamental and market factors as well (Fig. 1).

That determine effectiveness of business entities and influence its economic value (economic added value) while assessing the risk of decisions and actions taken. The fundamental determinants of setting the issue price can be considered in two perspectives:

- retrospective, including the current economic position of the company,
- prospective, including the impact of the company's capital development on its market value.

In the first case, the current situation of the company, its financial condition, operational and financial risk and payment capability based on basic information included in financial reporting are analyzed. The fundamental factors in the retrospective approach refer to the current economic position of the company and assessment of the basic financial values,

synthesizing past choices and actions (e.g. book value, capital and property structure, cash flow). At the same time, it is a preliminary assessment of securing the economic interests of the owners and the degree of the risk taken.

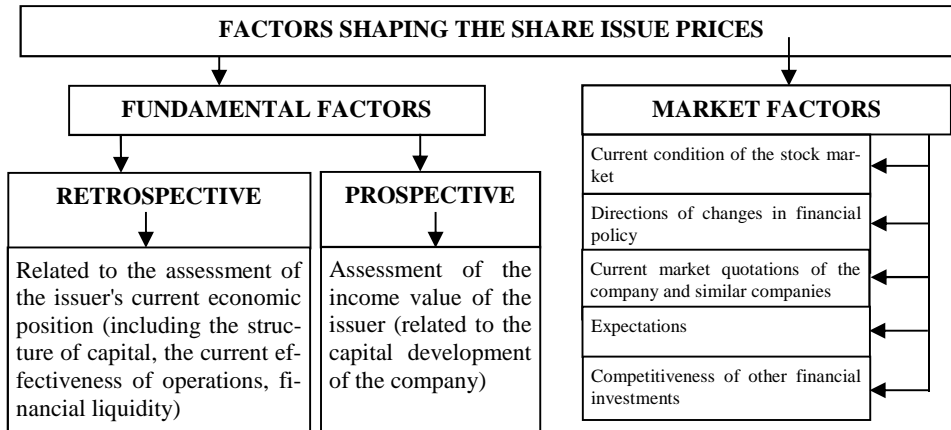


Figure 1. The scope of factors determining the level of the share issue price

Assessment of the current dividend policy, using the measures expressing: the level of dividend per share, the dividend rate, dividend coverage ratios may complete the analyses. However, attention should be paid to the various reactions of investors to the information on the applied dividend policy depending on the structure of shareholders, preferring current benefits to a varying extent (the so-called Dividend Magnetism) or future capital gains (the so-called profit magnetism).

In addition to retrospective factors, the information regarding the changes in the company's income position related to its capital development, the way capital is used and the change in the market position play an important role in determining the amount of the share issue price. The issuer will try to report the issue price to the expected income taking into account the fact that it 'sells' the right to participate in the economic effects of the company to future owners. However, this does not mean that assessment of the company's income value made by an issuer will be concurrent with the investor's assessment. The latter may strive to select companies that are undervalued in the investor's assessment as compared to the companies falling into a similar risk class. The prognostic assessments are difficult, requiring access to a wide range of the information about factors shaping the future economic value (economic added value) and risk areas, in conjunction with the assessment of effectiveness of the future investment plans financed by the raised capital (Karmańska, 2009).

Among the market factors, it should be emphasized that the choice of the right moment of the market determines the level of the issue price accepted by the market. Setting the correct issue price requires consideration of static and dynamic factors, using financial market analysis, matching technical and fundamental elements as well as the factual expectations and preferences of the investors. This is a difficult problem as decisions are made under conditions of uncertainty, it is necessary to take into account numerous elements that can occur with varying intensity at the moment of the actual market introduction and market

verification of the earlier arrangements. The approximation of the issue price to the market price, i.e. the price accepted by market participants, requires a comparison and assessment of the profit rate expected by investors, with the expected profitability of the purchase of shares and the market interest rate. This is an area of the conflict of interest between the issuer and the investor that increases the cost of issuance and directs the investors' interest in other securities. The maximum share purchase price determined by the investor in the primary market, providing the expected rate of return does not have to correspond to the minimum price accepted by the issuer. The issuer's options may be different. On the one hand, it is possible to lower the issue price, its flexible shaping depending on development of the market situation, assess the ratio of the amount of expected capital to the identified needs or resign from raising capital in this segment of the financial market. On the other hand, appointment of the underwriter obliged to take over the shares that do not find buyers, and thus the risk of a deposit on the market with specific financial consequences for the issuer. Acceptance of the lower issue price may force a change in the direction of allocation of the acquired capital into areas ensuring higher economic efficiency. This is particularly important in the implementation of development processes where capital budget settlements may limit the possibilities of free shaping the level and cost of the acquired capital.

Table 1. The most important advantages and disadvantages of conducting IPO and listing on the regulated market

<b>Advantages</b>	<b>Disadvantages</b>
Access to a wide range of investors that enables to obtain large amounts.	The debut of the stock market is connected with the costs of conducting the offer and maintaining the shares on the regulated market.
Better perception of the company by financial entities (banks, venture capital funds), which allows easier and cheaper acquisition of funds outside the stock market.	Maintaining shares in the stock market requires regular informing investors about the issuer's activity in the form of current, quarterly and annual reports.
Increasing the company's credibility among its contractors.	Conducting the offer involves the disclosure of significant data about the company's activities to which their competition has access.
Regular and free advertising of the company in the media.	The sale of a large block of shares to investors may mean a partial or total loss of control over the company by its current shareholders.
Implementation of IPO is often associated with the restructuring of the company which leads to increased efficiency of its operation	
No need to reward shareholders for shared capital. Share capital does not require regular, obligatory liquidity in the form of interest.	

Source: (Sieradzki, 2016).

From the point of view of the (existing) company owners, conducting the first public offering and introducing the shares to trading on the organized market has numerous advantages, yet, it also has certain drawbacks. Certainly, the biggest advantage of this process is the possibility of acquiring large funds due to the potential unlimited number of stock investors who can purchase the offered shares. The biggest disadvantages of maintaining

shares in trading on the regulated market include the necessity to publish the financial data and all other relevant information that the company's competitors also have access to as well as investors. Furthermore, maintaining shares in the stock market involves the necessity to pay fees to the trading organizer, securities depository and market maker if the one has been contracted. The main advantages and disadvantages of conducting the IPO and listing of shares on the regulated market are presented in Table 1.

A thorough analysis of the advantages and disadvantages of introducing the company's shares to trading on a regulated market is very important and the management boards of companies often repeal the initial decision. This is most frequently related to the concerns about the possibility of losing control over the company or even its hostile takeover as well as loss of the current market position due to the necessity to publicize the sensitive market and financial data. These factors certainly have different meanings for individual companies. For those of them that have no other possibility to obtain financing, they will be of secondary importance (Sieradzki, 2016).

#### 4. COSTS RELATED TO THE CONDUCTING THE INITIAL PUBLIC OFFERING

In addition to numerous benefits, the decision to carry out an IPO involves the costs. In the subject literature, the cost classification proposed by Ritter is known that distinguishes three cost groups (Ritter, 1987):

- a) costs resulting from the underestimation of the issue price<sup>3</sup>,
- b) underwriting costs (the gross underwriter spread)
- c) other expenses, e.g. expenses related to legal advice, audit and printing related prospectus (Wawryszuk-Misztal, 2015).

In the empirical studies, the costs of stock exchange debuts are usually classified as direct and indirect costs.

Pursuant to the Polish law, direct public offer costs should be made public in the form of the current report which includes, among other, the information on the number of shares covered by the offer, issue price, value of inflows, values and types of offer costs consisting of:

- a) the costs of preparing and conducting the offer,
- b) costs of remuneration of underwriters<sup>4</sup>,
- c) costs of drawing up the prospectus, including consultancy costs,
- d) costs of offer promotion. In addition, the issuer should provide the information regarding the method of settlement of these costs in the accounting books and the manner of their inclusion in the financial statement (Regulation of the Minister of Finance of 19 February 2009, par. 33 section 1 item 12).

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<sup>3</sup> One of the methods of measuring the underestimation of the share issue price is the original rate of return measured as the difference between the share price on the first trading day and the issue price divided by the issue price (Mamcarz, 2010).

<sup>4</sup> These are costs resulting from the signed underwriting agreement. The Public Offering Act distinguishes between two types of underwriting agreements: service and investment [art. 14–15]. The subject of the service sub-service agreement is the acquisition by the underwriter of the service on its own account of all or part of the securities of a given issue in order to further their sale. In the case of an investment sub-issue, the underwriter undertakes to purchase, on its own account, all or part of the offered securities for which no subscriptions have been submitted within a specified period.

Indirect costs are the benefits lost by the seller or issuer of shares when the share price on the first trading day is higher than the issue price or the selling price. Underestimation of the price of offered shares is a common phenomenon on the financial markets and constitutes a kind of incentive to purchase shares in a public offer.

The most important costs of conducting the public offering include remuneration of advisers helping the company at all stages of the process. This group includes an investment firm (a brokerage house or bank conducting the brokerage activity) that primarily works pursuant to a commission on the value of placed shares (success fee) as well as a legal adviser who is usually responsible for drawing up the legal documentation (including, first of all, the prospectus). Furthermore, it is the market practice to employ an image advisor (public relations /investor relations) who is experienced in the proper communication with the media and with individual investors. After the publication of the prospectus, companies usually conduct an advertising campaign in the media (mainly press and the Internet) in order to attract a wider group of the potential shareholders with their shares. Subsequently, the company must be prepared to pay fees to the Polish Financial Supervision Authority (approval of the prospectus and to cover the costs of supervision over the capital market), the National Depository for Securities (dematerialization of securities) and the WSE (admission and introduction to trading).

Generally, the higher the offer, the higher its absolute costs. At the same time, they constitute – of course – a much smaller value as compared to the value of shares issued than those in very small offers (up to 10 million PLN).

The statistical combination of values and number of IPO of the new issue shares is shown in the chart 1.

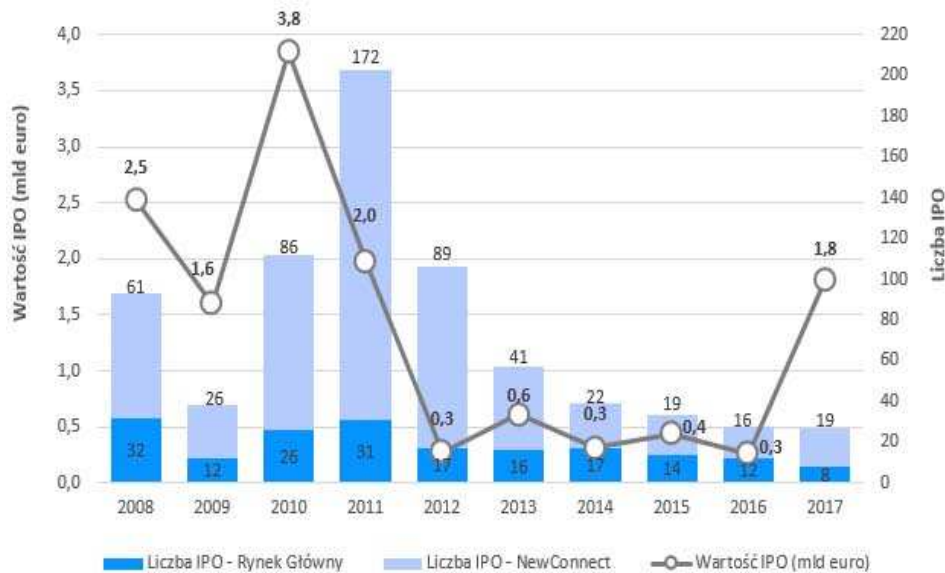


Chart 1. The statistical combination of values and number of IPO of the new issue

Source: author's own elaboration based on data from the Warsaw Stock Exchange, PwC, IPO Watch Europe, report for 2017.



In 2018, 20 initial offers were recorded on the Warsaw Stock Exchange (which means a decrease in 7 offers as compared to 2017), 5 of them took place on the main market. The total value of IPO in Warsaw amounted to only 81 million EUR, which means the weakest year in terms of the value of the offers since 2003. The low activity on the primary market on the Warsaw Stock Exchange last year is particularly visible in comparison with the record year 2017 when the total value of IPO reached the level of 1.8 billion EUR (the offer of the company Play Communications SA worth 1 billion EUR was the largest debut).

In order to obtain the status of the listed company in 2009, it was necessary to pay approximately 10.4% of the value of the offer, which was a record sum in the analyzed period. The average cost was significantly raised by, among others, GPM Vindexus, specializing in receivables and debt collection services – the company obtained 1.75 million PLN from the issue bearing the cost of approx. 0.9 million PLN (51.5%) (Kwiatkowska, 2010).

## 5. ANALYSIS OF THE COSTS OF THE INITIAL PUBLIC OFFERING OF SHARES IN POLAND IN 2008–2017

The analysis includes 100 domestic companies which conducted the IPO on the main share market of the WSE in 2008–2017 (Table 2). Due to the necessity of the accurate estimation of the costs of obtaining own capital and their structure in the research group, only companies whose public offer included only the issue of new shares were taken into account. The research did not include the entities that – as part of the public offering – simultaneously issued new shares and sold existing shares.

Table 2. The number of debuts on the domestic exchange market in 2008–2017

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>The number of domestic joint-stock companies</b>	328	354	373	387	395	403	420	433	434	432
<b>Number of listed companies</b>	374	379	400	426	438	450	471	487	487	482
<b>The number of debuts</b>	33	13	34	38	19	23	28	30	19	15
<b>Foreign debuts</b>	25	25	27	39	43	47	51	54	53	50
<b>Number of withdrawals</b>	10	8	13	12	7	11	8	13	19	20

Source: author's own compilation on the basis of data from WSE.

The calculations were based on information included in the current reports which – according to the binding law in Poland – the entity introducing securities to trading on the official stock exchange market is obliged to publish after subscription or sale of shares.

The costs of share issue are largely fixed costs, hence in the case of emissions with a significant value, the share of emission costs in total inflows is relatively low. For this reason, the surveyed group of companies was divided into two groups: companies raising up to 50 million PLN of capital and above 50 million PLN. For each of these groups, share issue costs were analyzed separately, using descriptive statistics methods (Table 3).

Table 3. Average inflows from issue and issue costs in terms of value in the period 2008–2017

Year	Issue value	No of companies	Average value of inflows from issues in thous. PLN	Average cost of issue in thous. PLN	The average cost of preparing a prospectus and consulting in thous. PLN	The average cost of the offer in thous. PLN
2008	< 50 mln PLN	12	12,308	957	327	266
	> 50 mln PLN	4	628,772	9,178	3,376	2,451
2009	< 50 mln PLN	7	9,883	1,091	570	175
	> 50 mln PLN	2	3,248,405	25,391	5,751	1,659
2010	< 50 mln PLN	6	18,858	2,322	1,320	234
	> 50 mln PLN	3	89,904	5,169	1,668	289
2011	< 50 mln PLN	3	32,154	2,457	1,207	534
	> 50 mln PLN	1	118,500	6,372	1,263	782
2012	< 50 mln PLN	4	18,054	3,251	1,235	504
	> 50 mln PLN	0	-	-	-	-
2013	< 50 mln PLN	7	18,987	1,148	351	169
	> 50 mln PLN	2	98,730	5,365	1,906	445
2014	< 50 mln PLN	3	14,526	1,134	358	141
	> 50 mln PLN	1	50,520	2,961	2,247	193
2015	< 50 mln PLN	3	60,543	3,421	1,342	539
	> 50 mln PLN	2	16,573	2,465	467	1,342
2016	< 50 mln PLN	4	4,325	2,579	1,372	690
	> 50 mln PLN	2	3,567	968	2,682	489
2017	< 50 mln PLN	3	3,890	1,896	478	2,412
	> 50 mln PLN	1	7,320	1,248	493	689

Source: Author's own compilation based on WSE prospectuses.

The table above shows that 432 companies debuted in the years 2008–2017, 50 foreign entities introduced their shares to trading on the WSE market, of which 41 companies carried out a new share issue. The majority of foreign companies were the entities that chose the WSE as the only place of quoting their shares. The factor conducive to the increase in the number of foreign entities on the WSE was entry into EU structures. First of all, these were companies from other EU countries that introduced shares to trading on the WSE.

Poland's accession to the European Union improved the image of our market in the eyes of foreign investors, which contributed to a greater inflow of foreign capital into the stock market. The stock exchange is often referred to as the economy barometer. Therefore, if indeed the trends prevailing in the stock market are caused by the economic situation of a specific country, enterprises operating in this market also experience these changes. Consequently, the macroeconomic situation changes into microeconomic. However, the market value of the company is not only a reflection of the market situation. To a large extent, it is shaped by decisions made within the organization. The skills of the management and the level of business risk of the enterprise are of crucial importance. However, it should be noted that the level of risk is affected not only by microeconomic factors but also macroeconomic factors, such as (Szyszko, 2000):

- unfavourable economic situation,

- imprecisely estimated level of inflation,
- rapid changes in the market situation,
- changes in the fiscal and monetary policy (Paździor, 2008).

The analysis allows to state that in the case of issues up to 50 million PLN, statistically significant differences were noticed only in the case of the issue price and the cost of preparing the prospectus, i.e. those costs were higher only in the years 2008–2015. In the same period, one can notice a reduction in the promotion costs of the offer, which may be the result of a crisis, however, this change is not statistically significant. While analyzing the cost structure, the following are noted: the increase in the share of the costs of preparing the prospectus, the reduction in the share of the costs of preparing the offer and its promotion, although these differences are also not statistically significant. A similar situation also applies to companies raising more than 50 million PLN of capital.

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The range of the results obtained in the analyzed period can also be explained by the fact that since 2007 we have had to deal with a significant and long-lasting upward trend in share prices, which not only encouraged companies to enter the stock market, however, it also enabled the investors to achieve high rates on the day of their debut. In 2008 when the stock exchange already had a complete financial crisis, the situation was not as favourable as before. Undoubtedly, this year, companies were less able to use the underestimation of the share issue price as a signal. In contrast to the year 2007, sending a stronger signal would require determining the lower share issue prices, which would reduce revenue from issuance. The situation in this respect is improving in 2009, however, the number of debuting companies was still small.

The financial crisis significantly changes the operating conditions of enterprises and – as a result – influences their decisions (Porada-Rochoń, 2013). The effect of the crisis is usually a limited access to capital. Enterprises postpone investment projects while waiting for more favourable conditions when it is easier to raise capital and the number of the profitable investment projects increases (Puławski, 2013).

On the financial markets during the crisis there is a significant reduction in the number and value of IPOs (Henry, Gregoriou, 2014), which was also the case at the Warsaw Stock Exchange (Puławski, 2013). In this context, the question arises as to whether and how in the aftermath of the financial crisis the direct costs of raising capital through the IPO change. It can be assumed that in the conditions of a crisis the tendency of enterprises to incur optional costs, for example related to the promotion of the offer, is changing. At the same time, entities cooperating with the company in the run-up to their debut on the WSE may be tempted to reduce the fees charged as a result of the reduced demand for their services. It is also impossible to ignore the fact that the financial crisis negatively affects the amount

of inflows from the issue of shares and the relationship between expected and actual inflows.

## 6. ENDING

The initial public offering and introduction of shares to stock exchange trading enable companies to take full advantage of the opportunities offered by the stock market. Not only do the companies collect the necessary capital for further development but also they undoubtedly gain credibility and prestige, which owners and managers of companies are increasingly dependent on (to improve the competitive position in the target market). The issue of shares via the stock exchange also opens the possibility of benefiting from subsequent issues of securities in the future. Obtaining the status of a listed company also enables wider access to funds that are in the possession of a large number of entities actively operating on the trading floor.

The obtained results allow to state that the objective set at the beginning of the work was accomplished. It should be emphasized that as a result of the financial crisis the costs of issuance of shares under the IPO increased. This phenomenon can be observed only in the case of issues with a value of 50 million PLN with regard to 'large' emissions.

At the same time, it is worth noting that the subject of undervaluation of the initial offers is so extensive that it requires further work because a significant part of the factors determining the success of the public share issue may be exogenous, not always dependent on the issuer's activities. It may also be a consequence of an information gap on the part of investors, treating it as an additional investment risk. In the situation of a public share issue, this may also indicate a lack of the appropriate activities of the issuer in the area of active investor relations. Therefore, the needs of the modern market require active communication with the market, increase its information efficiency, which will allow the to set the issue price of the shares properly at the stage of obtaining the capital, taking into account the investor's and issuer's expectations and limit the phenomenon of undervaluation (re-evaluation) of public offers. The conducted analysis has allowed to draw the following conclusions:

- the number and value of the issue of new shares are sensitive to changes in the stock market situation,
- the costs of public subscription of shares in relation to the issue value are relatively high in the case of smaller emissions and decrease as the value of the issue increases,
- the companies, while conducting a public subscription of shares, relatively rarely use the services of investment underwriters.

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## EXTENSION OF LNG TERMINAL IN ŚWINOUJŚCIE. CHALLENGES AND BENEFITS

The purpose of this paper is to show what challenges and benefits are related to the extension of the LNG terminal. Further development of the facility is a result of the increasing demand for natural gas in Poland. The author describes investments which are part of the LNG terminal extension (development of the LNG regasification system, construction of an additional tank, expansion of the railway infrastructure and building of a new wharf). According to the author, the expansion of the gas terminal including the introduction of innovative solutions and improvements, may result in significant reduction of natural gas imports from Russia to Poland. The extended gas terminal, together with the existing Baltic Pipe and interconnectors, may not only decrease the amount of gas delivered from Russia, but after 2022 also lead to resigning from a new long-term gas contract with that country. Enlarged terminal with more capacity as well as the option to import gas from various directions, often based on long-term contracts, make creation of a gas hub in Poland more feasible.

**Keywords:** LNG terminal, Świnoujście, development, logistics.

### 1. INTRODUCTION

The creation of the LNG Gasport in Świnoujście should be considered as an important event which increases Poland's gas security. This LNG Gasport is a source of additional supplies of raw material from anywhere in the world. The investment contributes clearly to the diversification of natural gas supplies to Poland, being an alternative to the import of this raw material through pipelines, especially from Russia.

Soon after the construction of the Gasport in Świnoujście was completed, the decision was made to develop the terminal further, which is the most important part of the entire facility. According to the plans the extended Gasport should significantly increase its capacity, satisfying even half of Poland's demand for gas. This is crucial for the energy security of the state.

The purpose of this paper is to show what challenges and benefits are related to the extension of the LNG terminal. As part of the problem analysis following research questions need to be considered: what infrastructure should be created as a result of the development project and how will the extended Gasport increase the gas security of Poland.

The paper includes mainly description required to present the meaning and characteristics of the terminal's extension. Additionally, prognostic method which is crucial when

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predicting the possible results of the extension, as well as the comparative method and the praxeological approach have been used.

## 2. THE ROLE OF THE GASPORT

Polish authorities have desired to diversify sources of natural gas supplies since years and the LNG Gasport in Świnouście is a way to achieve these aspirations. Poland has been dependent on gas import from the Russian Federation for decades, which wasn't a perfect situation as Russia as the main gas supplier could put pressure on the importer. Therefore, mainly in the first and second decade of the new century, Polish authorities searched for alternative sources of gas. Various contracts and investments, in particular Gasport in Świnouście, enabled gas supplies to Poland from non-Russian directions. Having the LNG terminal Poland can purchase the required natural gas at competitive prices. Should the terminal be further developed, Poland could even resign from supplies of the Russian raw material which is sometimes the declared goal of Polish energy policy.

Natural gas is a strategic raw material in Poland and annual demand of the country for this energy source exceeds 17 billion m<sup>3</sup> (Piszczatowska, Kadej, 2018). Gas extracted in Poland covers around 25% of its demand, hence the raw material is being imported from an increasing number of countries. The gas import grows as a consequence of the rapidly increasing demand of the Polish market – the consumption of this resource increased from 15 billion m<sup>3</sup> in 2015 up to 17 billion m<sup>3</sup> in 2017 (*Konsumpcja gazu w Polsce rośnie...*, [http](#)). In August 1993 Poland and Russia signed an important agreement on the construction of a gas pipeline system to send raw material to Western Europe as well as gas supplies to Poland. In 1996 the so-called Yamal contract was concluded on the import of Russian gas into Poland for the period of 25 years, which involved the construction of a gas pipeline crossing Poland from the East to the West. Another agreement concluded in October 2010 stipulates that Poland will annually buy 11 billion m<sup>3</sup> of gas imported from Russia till 2022 (Wojcieszak, 2012). This strong dependence on Russian gas encouraged Poland to look for diversified sources and directions of gas supply resulting in alternative pipeline projects, interconnectors with neighboring countries, as well as the construction of a Gasport The latter investment started 2011, however the first gas carrier came in December 2015 only due to some delays with commissioning the facility.

Liquefied natural gas is transported by special tank ships to terminals, where the raw material goes through the regasification process (process of converting liquefied natural gas [LNG] back to natural gas). Afterwards, the raw material is distributed via pipelines to recipients. The LNG terminal in Świnouście is a key investment increasing the gas security of Poland and enabling the import of gas from anywhere in the world. It is also a pioneering venture of that kind in Central and Eastern Europe as well as in the Baltic Sea region. According to the project of the investment, the LNG terminal should have a capacity to receive 5 billion m<sup>3</sup> of LNG per year in the first phase. In the next stage, the regasification capacity is planned to increase up to 7.5 billion m<sup>3</sup> (Świątkowska, 2013).

Poland imports LNG mainly from Qatar and the USA, which are the main LNG exporters in the world (next to Australia). The USA (Luciani, 2016) becomes the leader in this area with their key supplier, Cheniere Energy, which signed a long-term contract with Poland on LNG delivery. The contracts with American LNG exporters will provide PGNiG (Polskie Górnictwo Naftowe i Gazownictwo SA – the Polish state-controlled, largest oil and



gas exploration and production company) with additional 7.3 billion m<sup>3</sup> of gas after regasification for the period between 2012 and 2042 (*Coraz więcej LNG zamiast gazu z Rosji...*, http). The LNG terminal is an important part of the so-called North Gate, which facilitates the transmission of gas along the North-South line, and not from the East to the West as it has been for decades. Gas pipeline network which connects the Central and Eastern Europe will significantly increase the level of Poland's security, integrating at the same time the European gas transmission system. This is in line with the concept of the so-called Three Seas Initiative which encourages cooperation between countries located in the Baltic, Adriatic and the Black Sea region.

The Polish Gasport, before it is further developed, consists of an LNG terminal, a breakwater in the Baltic Sea and a connecting gas pipeline (about 6 km long) as well as a transmission pipeline (about 74 km long) – the latter connects the LNG terminal with the national transmission system (Kubiak, Janik, Szulc, 2016). The terminal is built on the Wolin Island, covers 48 ha and is situated 750 meters from the sea coast (Gałczyński, Zajdler, Ruszel, ed., 2017). The facility increases the scope of technological processes which can be managed there: upload LNG from a tanker at the unloading dock, LNG storage in tanks, LNG regasification, gas dispatch to the national transmission system and loading of LNG on tank trucks and ISO tank containers. The terminal has two cryogenic containers for LNG storage, which have capacity of 160 thousand m<sup>3</sup> each (*Terminal LNG w Świnoujściu...*, http).

According to Wojciech Jędrzejewski building of the terminal in Świnoujście and the subsequent increase of energy security may result in desecuritization of gas issues. Once this area is desecuritized it will be possible to look at the economic aspect of natural gas trade and consider economic profits rather than political benefits (Jędrzejewski, 2013). The LNG terminal, in particular after further development, will at the same time facilitate gas supply not only to Poland but also to other countries of Central and Eastern Europe. Over the years Poland has transmitted gas from the East to the West only, which was a weakness of the Polish gas pipeline network. The terminal can change this and introduce the North-South transmission route. The development of gas transmission infrastructure impacts Polish-Russian relations. Since Poland reduced its dependence on the gas imports from Russia both energy as well as political relations between those countries can change (Książkowski, 2013).

### 3. REASONS FOR EXPANDING THE LNG TERMINAL

Poland plans to expand the terminal to increase the security of its gas supply, as well as to adapt the facility to the requirements of the economy. Larger terminal is needed to satisfy growing market demand for imported gas. The terminal will be expanded by additional wharf, to make the port more flexible and able to serve as a LNG supply center for smaller Gasports that are being built and are planned to be built on the Baltic Sea. Increasing terminal's capacity to load LNG on truck and rail tank cars is part of the PGNiG strategy based on the so-called 'island gasification' to deliver gas to the places located far from the transmission network. According to the 'island gasification' concept regasification station and a local distribution network need to be built and the gas in liquefied form will be supplied to this station via LNG trucks or rail tank cars (Malinowski, 2018).

New functionalities and services based on LNG help to develop the natural gas market in Poland. The decision to extend the terminal was based on the results of the feasibility study from August 2017. According to the plans project will utilize EU funds from Opera-

tional Programme 'Infrastructure and Environment'; extension of the terminal by another wharf is planned to be finalized in 2021 (*Wspólnie na rzecz rozbudowy...*, [http](#)) (the investment will be implemented according to 'design-build' method). Call for bids has been announced for key works related to the extension of the gas terminal in Świnoujście. Experts estimate the cost of the investment for one billion PLN (Malinowski, 2018).

The LNG terminal can currently store 5 billion m<sup>3</sup> of gas, which is enough to cover 1/3 of Poland's needs. Once the third tank<sup>2</sup> is built, the terminal will have capacity to cumulate an amount of gas that will satisfy even half the demand of the country

The extension of this largest terminal on the Baltic Sea is part of a comprehensive development strategy of the Gaz-System group, gas transmission operator who finances this investment. The further development of the terminal is planned to be completed in 2022 (Rudnicki, 2017). Project works have already started, 2019 the construction works will commence (Gonera, 2018).

In November 2017 the Agreement was signed in the voivodeship office between representatives of the company Polskie LNG (Gaz-System Group) and the management of Szczecin and Świnoujście Seaports to build another wharf in the terminal. In result the parties will cooperate exchanging information and documentation related to the construction of the second wharf (*Wspólnie na rzecz rozbudowy Terminalu LNG w Świnoujściu...*, [http](#)).

#### 4. DEVELOPMENT PLANS

The company Polskie LNG has published a periodic information to inform the market about proceedings planned in the nearest future aimed at finding a contractor for further development of the LNG terminal in Świnoujście (*Polskie LNG przygotowuje proces przetargowy...*, [http](#)). The extension of the terminal will increase its regasification and re-loading capacity to ensure best utilization of the facility's potential and create good environment for market development in the coming years. Four projects are planned to extend the LNG terminal in Świnoujście:

1. SCV (Submerged Combustion Vaporizer) project – covers further development of the existing LNG regasification system based on two additional Submerged Combustion Vaporizers with a maximum vaporizing duty of approximately 328,000 Nm<sup>3</sup>/h gas as well as associated installations.
2. Tank – includes a new complete LNG full containment tank with a gross volume of 180,000 m<sup>3</sup>, with required equipment and installations enabling full service of the new tank and its cooperation with two existing tanks.
3. Railway project – covers building of a complete railway siding with turnouts and an access railroad with equipment required to operate the LNG rail loading facility for rail tank cars and ISO tank container, consisting of twelve LNG loading stations. This facility introduces new service of the terminal, enabling loading of liquefied gas into rail tank cars and ISO tank container on the land part of the port (*Polskie LNG przygotowuje proces przetargowy...*, [http](#)).
4. Building of a new wharf in the Gasport along with the system to bunker and reload the LNG from tanks to ships. This is a sea-related part of the extension project which will be implemented independently to the other projects, in cooperation with the

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<sup>2</sup> It was not certain for a long time if the third tank will be built at all (see M. Gałczyński, Zajdler, Ruszel, ed., 2017).

management of Szczecin and Świnoujście Seaports (*Rusza przetarg na rozbudowę terminalu...*, [http](#)). New wharf will introduce additional services, i.e. loading and unloading of small- and medium-sized tankers, transshipment of LNG (from the ship at the unloading wharf to the ship at the trans-shipment wharf), loading of LNG bunkering vessels and natural gas bunkering (Januszek, 2018).

The project on the extension of the terminal was discussed in April 2018 during technical consultations – meetings to give the ordering party an opportunity to learn about the best solutions available on the market. Representatives of the construction companies took part in the meetings as well. The construction works assume a comprehensive execution of the project including project plan, design and construction (Ciepiela, 2018). In June 2018, parliamentary representatives from the Committee for Energy, Treasury and Environmental Protection, Natural Resources and Forestry promised to support the draft amendment to the act regarding the investment in the Gasport of Świnoujście. The existing legal solutions were considered insufficient and not permitting necessary investments to be made within the required timeframe to ensure stable and safe supply, as well as transmission of natural gas (Januszek, 2018).

## 5. BENEFITS OF THE EXTENSION

The amount of imported liquefied gas increased at the end of the second decade of the 21st century. According to PGNiG, LNG volumes of gas import from Qatar, Norway and the USA increased then times faster than gas imports from Russia. The increase in LNG imports compared to gas delivered from Russia was higher. Between January and July 2018 PGNiG imported about 0.6 billion  $\text{cm}^3$  more LNG than in the same period in 2017. At the same time, gas imports from Russia in the period between January and July 2018 increased by less than 0.4 billion cubic meters compared to the same period of 2017 (which constitutes a growth of 6%). The percentage of gas delivered from Russia dropped again to 75% of the whole gas imported by PGNiG between January and July 2018. At the same time LNG import maintained an upward trend and, in this period, increased by 6% to 19% of the whole import (*Konsumpcja gazu w Polsce rośnie...*, [http](#)).

PGNiG makes preparations to start supplying the Polish market with gas extracted in Norway, which would be sent via the Baltic Pipe (gas pipeline connecting Poland and Denmark) and is planned to begin end 2022. As a result of the long-term contracts which Poland negotiates with various countries, starting 2022 PGNiG will have an annual portfolio of over 4 million tones of LNG delivered from the USA (approximately 5.5 billion  $\text{m}^3$  of gas after regasification) (*Konsumpcja gazu w Polsce rośnie...*, [http](#)). PGNiG signed a long-term agreement to ensure LNG supplies from USA for the next 24 years – the contract guarantees deliveries of 0.7 billion  $\text{m}^3$  gas after regasification between 2019 and 2022 and around 39 billion  $\text{m}^3$  between 2023 and 2042. In October 2018 PGNiG concluded two long-term contracts for the supply of the liquefied gas. As part of each agreement the company will buy around 1 million tones of LNG (which makes about 1.35 billion  $\text{m}^3$  of the raw material after regasification) per year for the next 20 years. The gas is planned to be delivered through pipes which will be available in 2022 and 2023 the earliest, once the Yamal contract reaches its end. Poland seeks to conclude contracts for LNG supplies with gas producers from various parts of the world. In particular, the agreement signed with Qatar is crucial (with a significant annex from May 2017) (Jakóbik, 2018), but the potential import of raw material from other directions is also important.

Currently the LNG-powered machines become more and more important, especially considering the low-emission standards. This is a stimulus to further increase the volume of LNG supplies as well as expand the gas distribution network. According to the president of Polski LNG, Paweł Jakubowski, the terminal in Świnoujście could become a gas hub in the Baltic Sea region. In the gas hub concept, the raw material could even be delivered to places where there is no traditional transmission infrastructure. The LNG fuel is used in maritime transport which constitutes another impulse to increase regasification capacity of the terminal. The Sulphur Directive forces companies to significantly reduce the amount of this element in fuels; therefore LNG – powered ships become a good, environment friendly, alternative for maritime transport (*Prezes polskiego LNG...*, http).

After extension of the terminal Poland will be able to import 50% more LNG gas than before. When exploring new functionalities of the facility, prospects for the development of the LNG market not only in Poland but also in the Central and Eastern Europe will be taken into consideration. Moreover, the extension of the terminal which boosts its regasification capacity to 7.5 bcm, considerably increases the level of gas security in Poland. Using the current technological improvements in the LNG industry and implementing innovative solutions the Gaz-System company will be able to choose the most optimal path for the development of terminal's infrastructure and services, making full use of the market potential in the region at the same time (Furman, 2017).

Expansion of the terminal will result in an increased gas supply in Poland, which in turn will lead to price drop of this raw material for the final consumer. PGNiG reloads the imported LNG to tank trucks, delivers it to small regasification stations and from there the raw material is sent via gas pipelines, providing supplies on a particular area only. The company would like to use the additional quantities of LNG to supply industrial customers as well as deliver LNG to ships, cars and small LNG terminals in the Baltic Sea region. LNG from the Gasport in Świnoujście is transported by road tank trucks to Estonia, and is used there as fuel for ferries built in the Gdańsk shipyard (Furman, 2017).

## 6. CONCLUSION

The Gasport needs to be further developed to satisfy the growing demand for the raw material as well as accommodate the increase in gas imports to Świnoujście. The investment will follow the "design-build" method. The Gasport in Świnoujście provides diversification of gas supplies to Poland, even before it got extended. The LNG imported to terminal can compete with gas delivered from Russia, which has dominated in the Polish market for years. The first years of the LNG Gasport's operation can therefore be considered as the time to reduce the dependence on one key supplier. At the same time, however, the amount of gas imported via the terminal is still relatively small compared to the volumes imported via pipelines, especially from the Russian Federation.

The conclusion after analysis of the first research question is that the expansion of the LNG terminal in Świnoujście should consist of four important investments. Further development of the regasification system, additional tank, expansion of the railway infrastructure as well as construction of a new wharf are significant initiatives that clearly increase the capacity of the facility. Considering the expected increase in the volume of imported gas, it is particularly important to establish a second LNG transshipment point, as well as to increase the regasification capacity of the terminal. After construction of another tank the facility will have more bandwidth.

The analysis of the second research question confirms that expansion of the gas terminal may lead to a significant reduction of natural gas imports from the Russian Federation to Poland. When the Gasport is further developed, the Baltic Pipe is operational and other investments (in particular interconnectors) are implemented, theoretically it could be even possible to resign from the gas imports from Russia. Increased capacity of the gasport makes creation of a gas hub in Poland more likely. Furthermore, it is possible that Poland will significantly reduce the dependence on gas imported from Russia, in particular even resign from signing a new long-term gas contract with Russian Federation.

Further development of the Gasport will strengthen Poland's gas security. This is important because the demand for raw materials is growing both in Poland as well as in the Three Seas region. At the same time, after 2022 Poland will no longer be so heavily dependent on gas supplies from Russia as the existing contract may not be extended; this will create opportunity to buy more raw material from other directions. Particularly large amounts of gas are planned to come from the USA. The terminal, which gets extended in the early twenties of the 21<sup>st</sup> century, can significantly contribute to the real diversification of gas supplies to Poland. In the future the Gasport can be further developed if required.

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