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CONTENTS

ARTICLES

CHINESE FDI IN CENTRAL AND EASTERN EUROPE. AN OVERVIEW OF FACTORS MOTIVATING CHINESE MNES IN THE CEE REGION[1]

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Abstract: *The rise of multinational enterprises (MNEs) from emerging markets is topical, important and poses a number questions and challenges that require considerable attention in the future from academia as well as business management. This rise is driven by the Asian economy, mainly China, as Chinese MNEs have become important players in several regions around the globe, ranging from the least developed countries to the developed markets, including Central and Eastern Europe (CEE). Although several components of the strategy and attitude of Chinese MNEs are in line with what can be observed for MNEs from developed countries, but some components – with regard to motivations, operational practice and challenges – are different. Therefore, this paper will focus on these specificities of Chinese outward foreign direct investment (OFDI) in order to better understand the rise of Chinese MNEs.*

Keywords: *FDI, internationalisation, Chinese MNEs, Central and Eastern Europe*

1. Introduction

The rise of multinational enterprises (MNEs)[2] from emerging markets is topical, important and poses a number of questions and challenges that require considerable attention in the future from academia as well as business management. Outward foreign direct investment (OFDI) from non-European emerging regions is not a new phenomenon, what is new, is the magnitude that this phenomenon has achieved over the past one and a

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[2] As UNCTAD uses the term "multinational enterprise" or "MNE" in its latest publications (such as World Investment Report 2016) we chose to use this terminology during the research. Under this term we mean business organization whose activities are located in more than two countries.

half decade. Chinese OFDI has increased in the past decades, however, in the last decade this process accelerated significantly. Several factors fuelled this shift, including the Chinese government's wish for globally competitive Chinese firms or the possibility that OFDI can contribute to the country's development through investments in natural resources exploration or other areas (Sauvant – Chen, 2014, pp. 141-142).

Although traditionally Chinese OFDI is directed to the countries of the developing world, Chinese investments into the developed world, including Europe also increased significantly in the past decade. According to the Clegg and Voss (2012), Chinese OFDI to the European Union (EU) increased from 0.4 billion US dollars in 2003 to 6.3 billion US dollars in 2009 with an annual growth rate of 57 per cent, which was far above the growth rate of Chinese OFDI globally. In 2016, Chinese companies invested 35 billion EUR in the EU, a 77 per cent increase from the previous year (Hanemann-Huotari, 2017, p. 4). While the resource-rich regions remained important for Chinese companies, they started to become more and more interested in acquiring European firms after the financial and economic crisis. The main reason for that is through these firms Chinese companies can have access to important technologies, successful brands and new distribution channels, while the value of these firms has fallen, too, due to the global financial crisis (Clegg – Voss, 2012, pp. 16-19).

In line with the above, the paper will focus on Chinese MNEs strategies, operation and challenges in Central and Eastern Europe (CEE). The aims of the paper are to better understand the rise of Chinese MNEs in CEE and to specify their motivations. Therefore, the research will address the following questions:

1. What are the driving forces behind the international expansion strategy of Chinese MNEs?
2. How important is the CEE region in their localization strategies?
3. What are the main factors which makes the CEE region attractive for Chinese MNEs?

In order to assess the role and importance of OFDI from China towards CEE region, it must be evaluated within a global context, taking into account its geographical, as well as sectoral distribution. Therefore, after the theory and literature review, the third chapter briefly examines Chinese foreign direct investment globally, considering trends, patterns and investors' potential motivations when choosing a specific destination for their placements. The fourth chapter describes the changing patterns and motivations of Chinese OFDI in CEE region, based on desk research, company interviews and observations with a brief case study on Chinese FDI in Hungary. The final chapter presents the author's conclusions.

2. Theory and literature review

Majority of research on motivations for FDI apply the eclectic or OLI paradigm by Dunning (1992, 1998) that states that firms will venture abroad when they possess firm-specific advantages, i.e. ownership and internalization advantages, and when they can utilize location advantages to benefit from the attractions these locations are endowed with. Different types of investment motivations attract different types of FDI which Dunning (1992, Dunning-Lundan 2008) divided into four categories: market-seeking, resource-seeking, efficiency-seeking and asset-seeking. Localization advantages "comprise geographical and climate conditions, resource endowments, factor prices, transportation costs, as well as the degree of openness of a country and the presence of a business environment appropriate to ensure to a foreign firm a profitable activity" (Resmini, 2005, p

3). Much of the extant research and theoretical discussion is based on FDI outflows from developed countries for which market-seeking and efficiency-seeking FDI is most prominent (Buckley et al., 2007; Leitao-Faustino, 2010).

Nevertheless, traditional economic factors seem to be insufficient in explaining FDI decisions of MNEs. In the last decade international economics and business researchers acknowledged the importance of institutional factors in influencing the behaviour of MNEs (e.g., Tihanyi *et al.*, 2012). According to North, institutions are the "rules of the game" which are "the humanly devised constraints that shape human interactions" (North, 1990, p 3). Institutions serve to reduce uncertainties related with transactions and minimize transaction costs (North, 1990). Meyer and Nguyen (2005, p. 67) argue that informal constraints are "much less transparent and, therefore, a source of uncertainty". As a result, Dunning and Lundan (2008) extended OLI model with the institution-based location advantages which explains that institutions developed at home and host economies shape the geographical scope and organizational effectiveness of MNCs.

The rapid growth of OFDI from emerging and developing countries resulted in numerous studies trying to account for special features of emerging MNEs behaviour that is not captured within mainstream theories. Although MNEs from various emerging countries differ in many respects but to some extent they share common characteristics. For example, Peng (2012) reports that Chinese MNEs are characterized by three relatively unique aspects: (1) the significant role played by home country governments as an institutional force, (2) the absence of significantly superior technological and managerial resources, and (3) the rapid adoption of (often high-profile) acquisitions as a primary mode of entry.

Extant literature suggests diverse institutional factors that influence inward FDI. In the case of CEE, the prospects of their economic integration with the EU increased FDI inflows while in CEE countries that lagged behind with implementation of transition policies, which postponed their EU accession, FDI inflows were discouraged (Bevan-Estrin, 2004).

The example of extra-EU foreign investors in CEE is presented in a study by Kawai (2006) who analysed motivations and locational determinants of Japanese MNEs. The author found that Japanese MNEs' investment in CEE was motivated by relatively low labour and land costs, well-educated labour force necessary in manufacturing sectors and access to rich EU markets. Szunomár and McCaleb (2017) found that in the case of Chinese MNEs' motives in CEE significant role is devoted to institutional factors and other less-quantifiable aspects: besides EU membership, market opportunities and qualified but cheaper labour important factors are the size and feedback of Chinese ethnic minority, investment incentives and subsidies, possibilities of acquiring visa and permanent residence permit, privatization opportunities, the quality of political relations and government's willingness to cooperate.

3. Chinese foreign direct investment globally

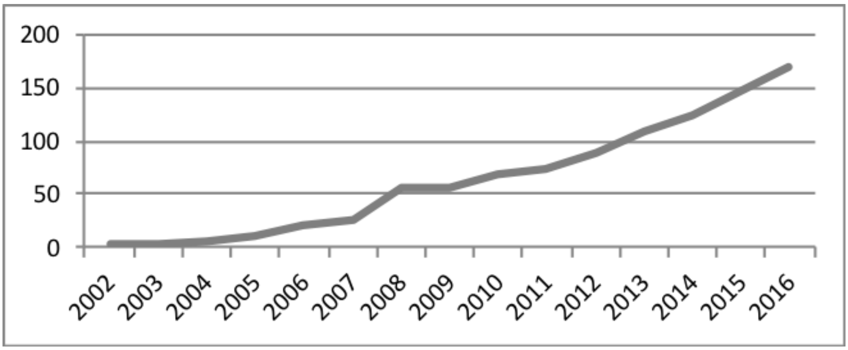
In 2000, before joining the World Trade Organization (WTO), the Chinese government initiated the "go global" or "zou chu qu" policy, which was aimed at encouraging domestic companies to become globally competitive. They introduced new policies to induce firms to engage in overseas activities in specific industries, notably in trade-related activities. In 2001 this encouragement was integrated and formalized within the 10th five-year plan, which also echoed the importance of the *go global* policy (Buckley *et al.* 2008). This policy shift was part of the continuing reform and liberalization of the

Chinese economy and also reflected Chinese government's desire to create internationally competitive and well-known companies and brands. Both the 11th and 12nd five-year plans stressed again the importance of promoting and expanding OFDI, which became one of the main elements of China's new development strategy.

Chinese OFDI flows and stock have steadily increased after the New Millennium (see Figure 1 and 2 below), particularly after 2008, due to the above-mentioned policy shift and the changes in global economic conditions, that is, the global economic and financial crisis. The crisis brought more overseas opportunities to Chinese companies to raise their share in the world economy as the number of ailing or financially distressed firms has increased.

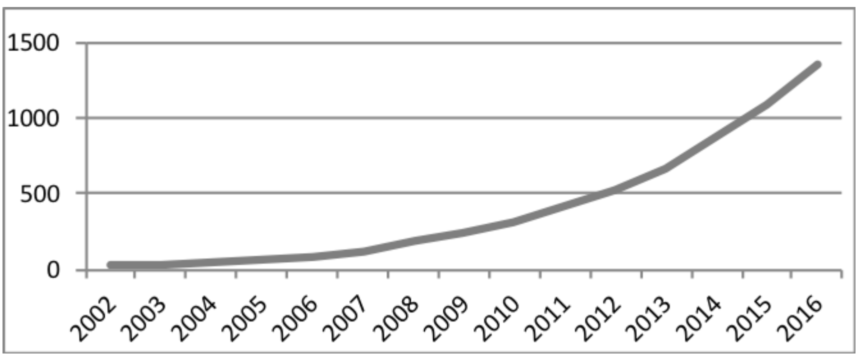
While OFDI from the developed world decreased in several countries because of the global financial crisis, Chinese outward investments increased even greater: between 2007 and 2011, OFDI from developed countries dropped by 32 per cent, while China's grew by 189 per cent (He and Wang, 2014, p. 4). As a consequence, China moved up from the sixth to the third largest investor in 2012, after the United States and Japan – and the largest among developing countries – as outflows from China continued to grow, reaching a record level of 84 billion US dollars in 2012. Thanks largely to this rapid increase of China's outward FDI in recent years, China also became the most promising source of FDI when analysed FDI prospects by home region (UNCTAD 2013, p. 21).

Figure 1: China's outward FDI flows, billion USD, 2002-2016



Data source: Chinese MOFCOM / NBS (2017).

Figure 2: China's outward FDI stock, billion USD, 2002-2016



Data source: Chinese MOFCOM / NBS (2017).

According to the *go global* strategy, Chinese companies should evolve into globally competitive firms, however, Chinese companies go abroad for varieties of reasons. The most frequently emphasized motivation is the need for natural resources, mainly energy and raw materials in order to secure China's further development (resource-seeking motivation). Mutatis mutandis, they also invest to expand their market or diversify internationally (market-seeking motivation). Nevertheless, services such as shipping and insurance are also significant factors for OFDI for Chinese companies if they export large volumes overseas (Davies, 2013, p 736). Despite China's huge labour supply, some companies move their production to cheaper destinations (efficiency-seeking motivation). Recently, China's major companies also looking for well-known global brands or distribution channels, management skills, while another important reason for investing abroad is technology acquisition (strategic asset-seeking motivation). Scissors (2014, p. 4) points out that clearer property rights – compared to the domestic conditions – are also very attractive to Chinese investors, while Morrison (2013) highlights an additional factor, that is, China's accumulation of foreign exchange reserves: instead of the relatively safe but low-yielding assets such as US treasury securities, Chinese government wants to diversify and seeks for more profitable returns.

Regarding the entry mode of Chinese outward investments globally, greenfield FDI continues to be important, but there is a trend towards more mergers and acquisition (M&A) and joint venture projects overseas. Overall, greenfield investments of Chinese companies outpace M&As in numerical terms, however, greenfield investments are smaller in value in total as these include the establishment of numerous trade representative offices.

4. Changing patterns and motivations of Chinese OFDI in CEE region

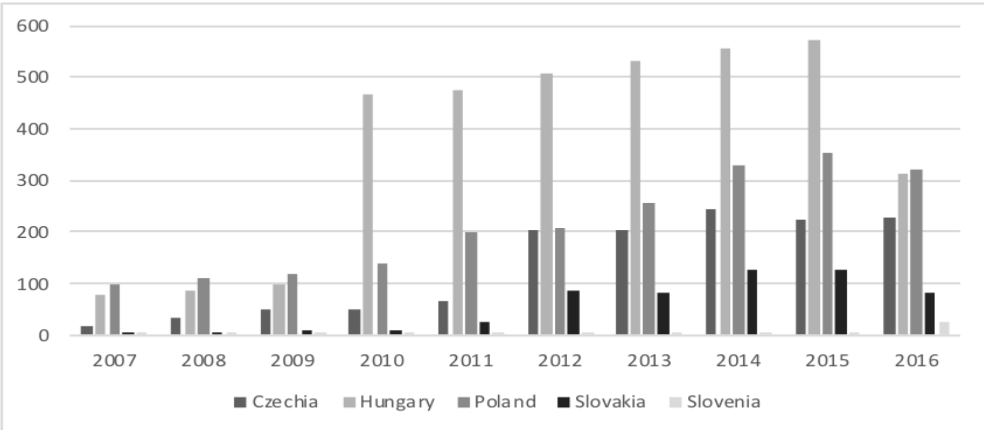
The change of CEE countries from centrally planned to market economy resulted in significant research on FDI flows to these transition countries. However, most of the studies focus on the period before 2004 which is the year of accession of the eight CEE countries – the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia – into the EU (Carstensen and Toubal, 2004; Janicki and Wunnawa, 2004; Kawai, 2006). Investors, mainly from EU-15 countries, were attracted by relatively low unit labour costs, market size, openness to trade, and proximity (Bevan and Estrin, 2004; Clausing and Dorobantu, 2005).

Extant literature suggests diverse institutional factors that influence inward FDI. In the case of CEE countries, the prospects of their economic integration with the EU increased FDI inflows while in other CEE countries that lagged behind with implementation of transition policies, which postponed their EU accession, FDI inflows were discouraged (Bevan and Estrin, 2004).

When analysing the impact of institutional characteristic of CEE countries such as form of privatization, capital market development, state of laws and country risk, the studies show varying results. According to Bevan and Estrin (2004, p 777) institutional aspects were not a significant factor impacting investment decisions of foreign firms. Carstensen and Toubal (2004) argue that they could explain uneven distribution of FDI across CEECs. Fabry and Zeghni (2010, p 80) point out that in transition countries institutional weaknesses such as poor infrastructure, lack of developed subcontractor network, and unfavourable business environment may explain FDI agglomeration more than “positive externalities”. Campos and Kinoshita (2008) based on a study of 19 Latin American and 25 East European countries in the period 1989-2004 found that structural reforms, especially financial reform and privatization, had strong impact on FDI inflows.

Although the countries of the CEE region differ in many respects, they have some common features as well. They have been in the process of economic catching up over the last decades, their development paths are defined mainly by the global and European powers, rules and trends and FDI has a key role in restructuring of these economies. Most of the above-mentioned countries started to get more interested in Chinese relations – more properly in attracting Chinese investments and boosting trade relations – since the new millennium, however, the economic and financial crisis of 2008 drew the attention of these six countries more than ever to the potential of Chinese economic relationship.

Figure 3: China’s outward FDI stock in selected CEE countries, 2007-2016, million USD



Source: MOFCOM/NBS (2017).

When calculating the percentage share of Chinese FDI in selected CEE countries to all the invested capital, using UNCTAD’s statistics on total inward FDI stock as well as MOFCOM data on Chinese FDI in selected five CEE countries, we found that only 0.22 % of total inward FDI in selected CEE countries were from China. The highest percentage is in Hungary: 0.4%, in other countries it is even lower (the lowest is in Poland with 0.17%). When using the data of China Global Investment Tracker (CGIT) instead of MOFCOM, as CGIT tracks back data to the ultimate parent companies, we found that 2.08% of total inward FDI in selected CEE countries were from China: the highest percentage is again in Hungary: 7.84%, while the lowest (below 0,5%) in Slovakia and Slovenia.

As detailed above, the role of Chinese capital in CEE – compared with all the invested capital here – is still very small, but in the last one and a half decade this capital inflow accelerated significantly. In the case of the selected countries – with the exception of Hungary – there is a growing demand for attracting Chinese companies in the last nine to ten years. In Hungary this process has already begun in 2003.

Chinese investors typically target secondary and tertiary sectors of the selected five countries. Initially, Chinese investment has flowed mostly into manufacturing (assembly), but over time services attracted more and more investment as well, for example in Hungary and Poland there are branches of Bank of China and Industrial and Commercial Bank of China as well as offices of some of the largest law offices in China, Yingke Law Firm (in Hungary in 2010, in Poland in 2012), Dacheng Law Offices (in Poland in 2011, in

Hungary in 2012). Main Chinese investors targeting these six countries are interested primarily in telecommunication, electronics, chemical industry, transportation and energy markets. Their investments are motivated by seeking of brands, new technologies or market niches that they can fill in on European markets.

4.1. Macroeconomic and institutional factors influencing Chinese companies in CEE

When searching for possible factors which make the region a favourable investment destination for China, the quality and the cost of labour is to be considered first. A skilled labour force is available in sectors for which Chinese interest is growing, while labour costs are lower in the CEE region than the EU average. However, there are differences within the region – and the selected five countries, for example, in terms of unit labour costs.

The change of institutional setting of CEE countries due to their economic integration into the EU (in 2004 and 2007) has been the most important driver that spurred Chinese OFDI in the region, especially in the manufacturing sector. Majority of Chinese firms that invested in CEE countries after their EU accession were motivated mainly by accessing the old EU-15 markets and CEE or CEE markets were of secondary importance. CEE countries' EU membership allowed Chinese investors to avoid trade barriers and the countries served as an assembly base due to the relatively low labour costs.

Chinese investment in CEE in the years 2004-2006 were dominated by firms from electronics sector, especially LCD TVs producers as their exports to the EU were restricted by quota. The examples of such investors are: TCL, Victory Technology, Digital View in Poland; Hisense in Hungary; Changhong in the Czech Republic. There are already cases of companies from renewable energy sector such as Orient Solar in Hungary and media news inform about some companies from the solar sector that consider investing in Poland. The motive of overcoming trade barriers shows similarity with Japanese investments in the region in the second half of the 1990s. Japanese MNCs established assembly plants here, but sold their products mainly in the affluent Western European markets (Woon, 2003).

Another aspect of the EU membership that is inducing Chinese investment is institutional stability (e.g., protection of property rights) as one of the drivers of Chinese OFDI is unstable institutional, economic and political environment of their home country (e.g., Morck *et al.*, 2007). It is in line with the findings of Clegg and Voss (2011, p. 101) who argue that Chinese OFDI in the EU shows "an institutional arbitrage strategy" as "Chinese firms invest in localities that offer clearer, more transparent and stable institutional environments. Such environments, like the EU, might lack the rapid economic growth recorded in China, but they offer greater planning and property rights security, as well as dedicated professional services that can support business development".

In their investment decisions in CEE countries Chinese firms might also be attracted by Free Trade Agreements between the EU and third countries such as Canada, the USA (being negotiated), and the EU neighbouring country policies etc. as they claim that their CEECs subsidiaries are to sell products in the host, EU, Northern American or even global markets. For example, Nuctech (Poland), security scanning equipment manufacturer, sells also to Turkey; machinery producers such as Shantuo Agricultural Machinery Equipment (Romania) for which were planned as important export markets Canada, Russia, USA; and Liugong Machinery subsidiary in Poland that targets the EU, North American and CIS markets. This driver might also explain some of the Chinese investment in Bulgaria and Romania before their EU accession, such as SVA Group in Bulgaria. However, this type of institutional factor requires further research. Besides, there are cases of Chinese companies following their costumers to CEE countries, like in the case of Victory Technology (supplier to Philips, LG and TPV) or Dalian Talent Poland (supplier of candles to IKEA).

Moreover, Chinese firms' CEE subsidiaries may allow them to participate in public procurement. Example is Nuctech company that established its subsidiary in Poland in 2004 and initially targeted mainly Western European market. In 2011 the company stated that the old-EU market became saturated and it focused now more on CEE which benefit from the EU aid funds. However, in case of government procurement one of the conditions is "Made in the EU" and Nuctech's Polish manufacturing plant allows it to meet this requirement.

Recently Chinese firms interested in investing in countries of the CEE region became more inquisitive about food safety standards and certificates. They would be interested in exporting agricultural products with EU safety certificates to China where food safety has been a problem.

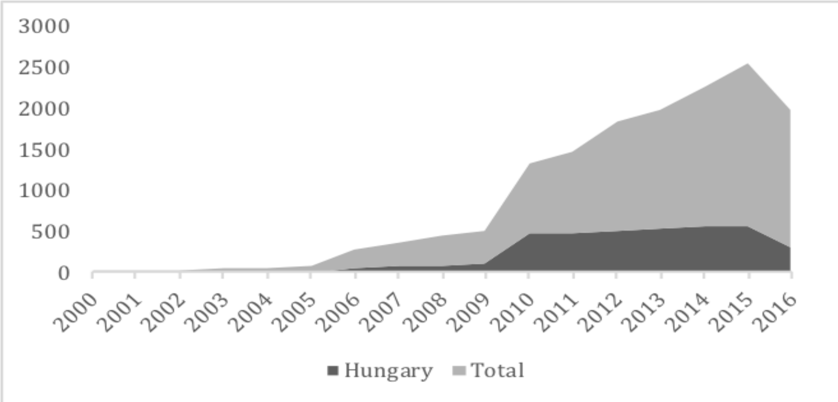
4.2. A special partner: Hungary?

Before their integration with the EU, CEE countries were mostly focused on fulfilment of the EU entry criteria and generally neglected relations with countries from other regions, except for Hungary. Only since the aftermath of the global financial crisis can we observe increased interest of the CEE (as well as other CEE) governments in attracting Chinese investors. For example, Poland started actively promoting itself with Chinese firms only at the EXPO 2010 in Shanghai.

Hungary is a country where the combination of traditional economic factors with institutional ones seems to play an important role in attracting Chinese investors. Hungary has had historically good political relations and earlier than other CEECs, since 2003, intensified bilateral relations in order to attract Chinese FDI. Hungary is the only country in the region that introduced special incentive for foreign investors from outside the EU, which is a possibility to receive a residence visa when fulfilling the requirement of a certain level of investment in Hungary. Moreover, Hungary has the largest Chinese diaspora in the region which is an acknowledged attracting factor of Chinese FDI in the extant literature, that is a relational asset constituting firm's ownership advantage (Buckley *et al.*, 2007). Example is Hisense's explanation of the decision to invest in Hungary that besides traditional economic factors was motivated by "good diplomatic, economic, trade and educational relations with China; big Chinese population; Chinese trade and commercial networks, associations already formed" (CIEGA, 2007).

Although Hungary is not a priority target of the intensive Chinese FDI outflows of recent years, since the turn of the millennium Chinese investments show a growing trend here. Chinese investment to Hungary started to increase significantly after the country joined the EU in 2004. According to Chinese statistics, it means a really rapid – more than a hundredfold – increase from 5.43 million USD in 2003 to 571.11 million USD in 2015 (see Figure 2). According to Chen (2012), in 2010, Hungary itself took 89 percent of the whole Chinese capital flow to the region. Although this share has been decreasing since then as other countries of the CEE region became also popular destinations for Chinese FDI, but the amount of Chinese investment in Hungary has continued to increase and it is by far the highest in the CEE region.

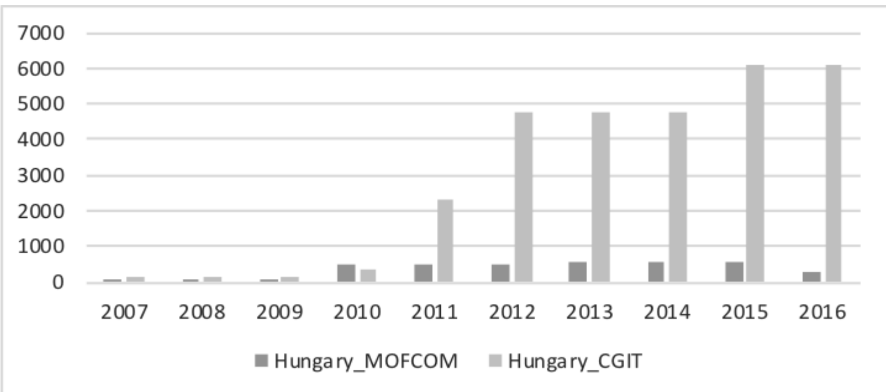
Figure 4: China's OFDI stock in Hungary compared to Chinese OFDI stock in CEE, 2000-2016, million USD



Data source: MOFCOM/NBS (2017).

As mentioned above, according to Chinese statistics, Chinese OFDI stock in Hungary was 571.11 million USD in 2015 but – due to disinvestments – turned to 313.7 million USD in 2016. Nevertheless, this amount is far greater when taking into account cumulative Hungarian data, since a significant portion of Chinese investment is received via intermediary countries or companies, therefore it appears elsewhere in national (Chinese and Hungarian) statistics. According to the Hungarian National Bank's statistics, Chinese investment in Hungary by 2016 was about 1,8 billion USD, while China Global Investment Tracker indicates a stock of more that 6 billion USD (see Figure 5). More than 1.5 billion USD from that is the investment of the Chinese chemical company Wanhua, which acquired a 96 percent stake in the Hungarian chemical company BorsodChem through its Luxemburg subsidiary in 2010 and 2011. This subsidiary also made some investment for the development of BorsodChem later. It is the largest Chinese investment in CEE so far.

Figure 5: Comparing MOFCOM and CGIT statistics – China's OFDI stock in Hungary, 2007-2016, million USD



Data source: MOFCOM/NBS (2017) and CGIT (2017).

Although Chinese multinational companies represent a relatively small share of total FDI stock in Hungary, they have saved and/or created jobs and contributed to the economic growth of Hungary with their investments and exports during the crisis.

Furthermore, many of them (e.g. Lenovo, ZTE, Huawei, Bank of China) have turned their Hungarian businesses into the European regional hub of their activities (Szunomár *et al.*, 2014).

In addition to the chemical industry, the investment of Chinese companies in Hungary covers industries such as manufacturing, telecommunications, trade, wholesales or retails, banking, hotels and catering, logistics, real estate and consultancy, etc. According to Hungarian statistics, more than 5000 Chinese companies operate in Hungary, most of them being small businesses operating in the service or retail sector: restaurants, perfumeries, and so called ‘Chinese shops’, selling everything from shoes and clothes to plastic toys.

Beijing government often emphasizes that it treats Hungary as a hub for Chinese products in the European Union. In order to do so, it plans several infrastructure-related investment recent years: they want to transform Szombathely airport into a major European cargo base, develop the infrastructure and the services of the Debrecen airport and – as a part of the Belt and Road initiative – they support and finance the modernization project of the Belgrade-Budapest railroad connection.

5. Conclusion

As mentioned above, while Chinese OFDI in emerging or developing countries is characterized more by resource-seeking motives, Chinese companies in the developed world are rather focusing on buying themselves into global brands or distribution channels, getting acquainted with local management skills and technology, so-called strategic assets. Regarding modes of entry, investments shifted from greenfield investments to mergers and acquisitions currently representing around two-thirds of all Chinese OFDI in value. This shift is driven by the financial crisis, however it also seems to be a new trend of Chinese FDI to the developed world, while greenfield investment remains significant in the developing world with some cases in Central and Eastern Europe, too.

China’s OFDI has also become more diversified in the past years both in terms of sectors as well as geographically. From mining and manufacturing they turned towards high technology, infrastructure and heavy industry, and lately to the tertiary sector: business services and finance but also health care, media and entertainment. Asia continues to be the largest recipient, accounting for nearly three-quarters of total Chinese OFDI, followed by the EU, Australia, the US, Russia and Japan but numbers might be misleading though due to round-tripping phenomenon. As for Chinese OFDI to the European Union, the Eurozone crisis attracted Chinese investors due to falling prices. Here, Chinese investors prefer “old European” investment destinations not only because of market size but also because of well-established, sound economic relations with these countries.

Chinese investment in CEE constitutes a relatively small share in China’s total FDI in Europe and is quite a new phenomenon. Nevertheless, Chinese FDI in the region is on the rise and expected to increase due to recent political developments between China and certain countries of the region, especially Hungary, Czech Republic and Poland.

The investigation of the motivations of Chinese OFDI in CEE shows that Chinese MNEs mostly search for markets. CEE countries’ EU membership allows them to treat the region as a ‘back door’ to the affluent EU markets. Chinese investors are attracted by the relatively low labour costs, skilled workforce, and market potential. It is characteristic that their investment pattern in terms of country location resembles that of the world total FDI in the region.

Analysing the difference in motivations before and after the global financial crisis it can be assessed that although it did not have an impact on Chinese-CEE relations from the Chinese side directly but it did have indirectly because the crisis had an effect on the whole CEE region as most of them (not only the selected CEE countries) started to search for new opportunities after the crisis in their recovery from the recession. Country-level institutional factors that impact location choice within CEE countries seem to be the size of Chinese ethnic population, investment incentives such as special economic zones, resident permits in exchange for given amount of investment, privatization, but also good political relations between host country and China. For example, Hungary's Eastern opening policy was initiated after (and partly as a result of) the crisis. China just took these opportunities, which can be the reason of the wider sectoral representation of Chinese firms in CEE in recent years. Another reason for this higher representation can be the diversification strategy because recently Chinese global investment strategy places great emphasis on the diversification in all respects. A good example for that is China’s 16+1 initiative which provides a joint platform for all Central and Eastern European countries and China, as well as the Belt and Road initiative, which provides more and more connections for Chinese businesses.

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PROFESSIONAL EXO-JUDGMENT PERCEPTION – A QUANTITATIVE RESEARCH BASED ON AN INNOVATIVE CONCEPTUAL STRUCTURE

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Abstract: *This paper aims to describe an innovative concept – the professional exo-judgment. This concept implies a wide documentation and presents a high grade of originality. In the development of this article we will expose pilot-notions from the framework of the concept's explanations followed, in the near future, by a thoroughgoing and exhaustive description of all composing elements. A starting definition is referring to the professional exo-judgment as being a thorough approach of the professional judgment from general to particular, extrapolating the classical notion of professional judgment towards a constructive vision, towards a clear and open presentation and in the end is referring to the description of a concept with an interchangeable form, with influences related to affective and the internal structure of men, description realized through internal – external approach, through these exo-approaches obtaining an exo-judgment.*

Keywords: *exo-judgment, approach, innovative concept, originality, quantitative research*

1. Introduction

The central thematic of the research is focused on studying the elements contained by the complex mechanism of the professional judgment.

The main objective that guides the research's trajectory is represented by the limitations brought by the importance of the professional judgment's perception. In order to achieve the main objective we formulated a set of adjacent objectives to support the complex demarches started in our research. This way, we focused on the way the professional judgment is perceived on activity segments, on the role and influences of the professional judgment and also on the delimitation of the importance given to professional judgment into the organizational environment, on the identification of the existence within companies of regulations that impose the use of professional judgment, on the determination of information categories that rely on the professional judgment and on the frequency of use of it. Starting from the objectives established, we issued the hypothesis in accordance to the rigor of the professional judgment has a direct impact on the quality of decisions. Through “hypothesis” we understand the communication of a causal relationship in a manner that allows empirical verification (Caplow, Paris, pp. 119).

2. Steps made for the research

The procedure for issuing the questionnaire is in respect with the purpose of detailing the way in which the professional judgment is perceived. Professor Septimiu Chelcea describes the questionnaire as being “a technique and correspondingly an investigation tool consisting of an assembly of written questions and eventually graphic images, ordered in a logical and psychological order which, through its administration of the investigation by the operators or through self-administration, determines from the interviewed persons answers that will be recorded in writing” (Chelcea, 1975, pp. 140).

The questionnaire, containing a total of 20 questions, has been structured in several parts, as follows:

- an introductive part that informs the respondent regarding the scope of the research and the anonymous and confidential character of it;
- a part of questions effectively correlated with the proposed research;
- a part of questions for the identification and establishing a general profile of the respondent.

In order to distribute the questionnaire we opted for the Google Drive platform that facilitates the gathering and processing of data. This option allows the upload of the questionnaire in an electronic template and the quick sent option through direct emails by showing the actual questions or through a link. The centralization of data was realised in a tabular manner, easy to transfer as a database in order to be processed with the specialised software. The advantages of using an online platform include: access to respondents that are located in remote places or far away, the capacity of contacting several categories of respondents and also the ease way to obtaining a centralization of data, fact that reduces the time and effort of the researcher (Weight, 2005).

The representativeness of the sample has been outlined after the target group has been established for the questionnaire. The questionnaire, as the principal instrument of the investigation, has been sent towards employees of companies from domains such as: production, distribution, legal, academic, management and consultancy, medical services.

Because of the distribution of the questionnaire on various specialized platform in sociological studies, our research has obtained a high grade of visibility, fact that lead to the appearance of respondents that fit in other domains than the ones stated, out of which we mention: naval transportation, utilities, public services etc.

Also, the questionnaire has been sent through social networks (Facebook, Google + etc) and professional (LinkedIn etc) and also face to face through printing the questionnaire and provide it to the respondents. This last way of transmitting the questionnaire has triggered the effort for punctual detailing of the questions for guidance to the proper understanding by the respondent of all questions and objectives through the quantitative research.

The number of validated questionnaires is 229. The data has been tabular centralized through the Google Drive platform. This platform has allowed the export of the database in Microsoft Office Excel format. Through this software we processed the data, built charts and interpreted the results obtained. The statistical analysis are sole-varied and refer to one variable and also bi-varied, taking into consideration several variables.

The whole data collection process and the interpretation of data has as vector on one side the close follow of hypothesis, through the prism of its validation or invalidation, and on the other side the iteration of concentrated conclusions from the research's finalization.

3. Results and discussions

The interpretation of the research's results is the explication phase of the results obtained and involves the capitalization of information accumulated in accordance with the initial planning for carrying the quantitative research.

- **Defining the professional judgment through the optics of respondents**

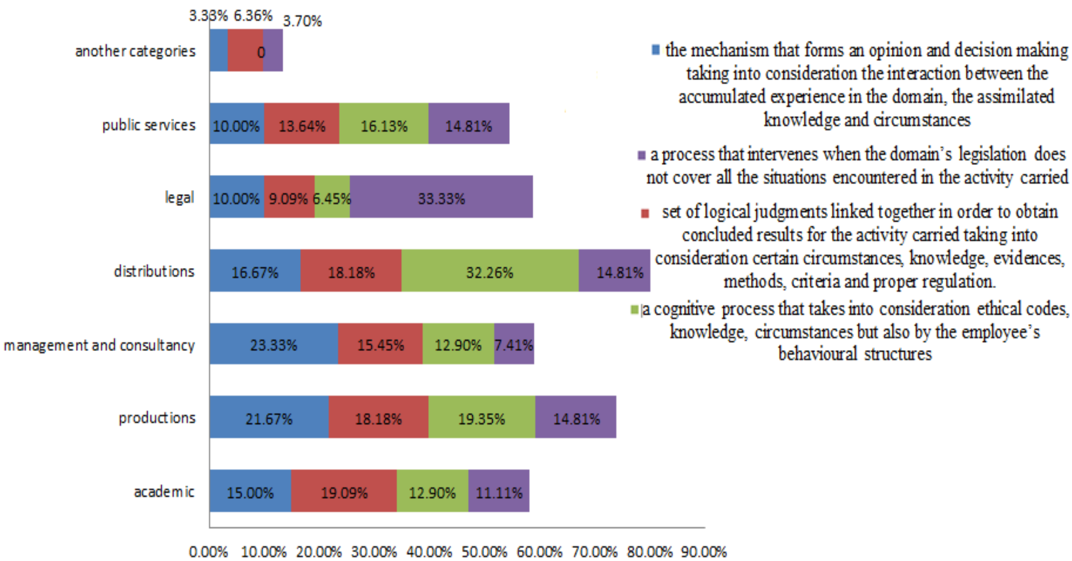
At a general level, almost half of the questioned population (48%) considers that the professional judgment is a set of logical judgments linked together in order to obtain concluded results for the activity carried taking into consideration certain circumstances, knowledge, evidences, methods, criteria and proper regulation.

The second preference among the respondents has labelled the professional judgment as being the mechanism that forms an opinion and decision making taking into consideration the interaction between the accumulated experience in the domain, the assimilated knowledge and circumstances in a percent of 26.2%.

With approximately 13 percent the professional judgment's definitions were a process that intervenes when the domain's legislation does not cover all the situations encountered in the activity carried and as a cognitive process that takes into consideration ethical codes, knowledge, circumstances but also by the employee's behavioural structures.

Taking into consideration the domains of activity for each company that employed our respondents we can make the following observations:

Fig. 1. Acceptations of the professional judgment on domains of activity



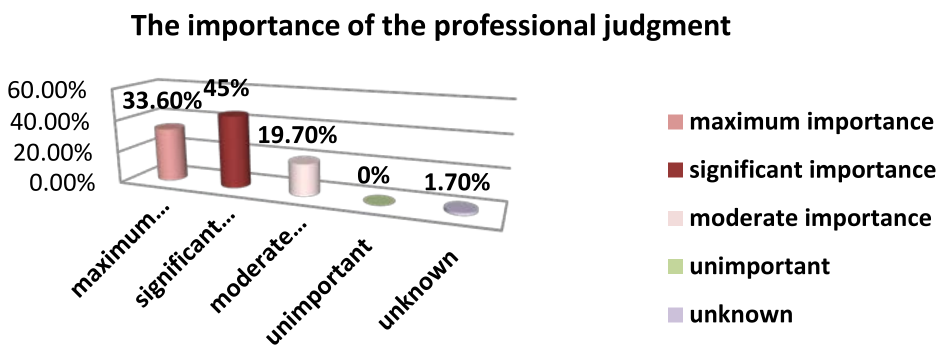
Source: issued by the authors

- **The importance given to the professional judgment**

The professional judgment represents the concept that directs the activity of the employee on certain trajectories depending on the specificity and implications of each activity carried out. The importance of this concept is given by the decisional mechanism resulted from the use of professional judgment.

The respondents, in a staggering proportion of 45% have signalled that the professional judgment has a considerable importance and 33.6% have tagged the professional judgment as an element of maximum importance.

Fig. 2. The importance of the professional judgment in the acceptation of our respondents



Source: issued by the authors

Depending on the domain of activity, the importance of the professional judgment varies as grade:

- In the academic and distribution domains, the professional judgment has a maximum importance

The respondents from the academic domain have exemplified the following situation that requires the use of professional judgment: the daily carrying of activity; activities for structuring the teaching material; in relationships between the members of the university's community; in establishing the teaching and evaluation methods; into taking the decisions regarding the teaching programme; for the organization of science group studies; elaboration and presentation of courses.

- In the distribution domain, the responding population has listed situations that require the use of professional judgment: carrying major projects; department restructuring; instruction actions for the personnel; budgeting; financial control and IFRS reporting; meeting the objectives; the necessity of taking a fast decision with financial impact etc.
- in production, consultancy and management, and also in public services, the professional judgment develops a considerable importance. The attendees at the research have iterated the following situations that lead to the use of professional judgment: planning and risk assessment on each commitment; issue of working procedures; monthly closing; periodic checks; operational decision making; audit missions; issue of audit reports; perspective economic forecasts; etc.
- moderate importance is given to the professional judgment from the legal domain. This fact occurs because the strict legal framework imposed by the

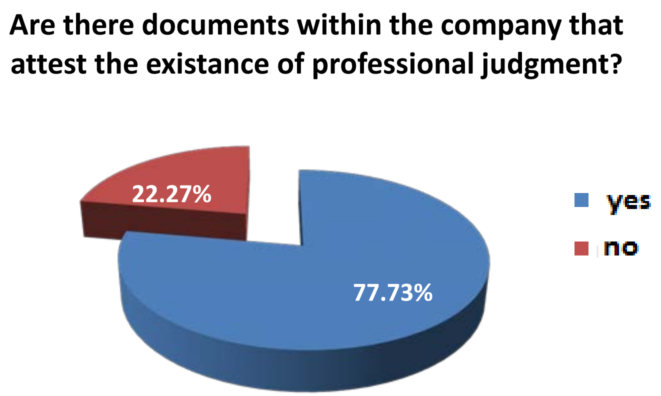
current legislation. We state some activities that imply the use of professional judgment named by the respondents: legal documents wording; legal activities; client's representation.

- **The existence within companies of documents that confirm the use of professional judgment**

77.73% of the respondents confirmed the existence within the company of documents that refer to the professional judgment. These documents have either a general or specific character depending on the domain in which the employee is working but also depending on his access to information. The general answers had in common that attesting documents for the professional judgment, regardless the domain, are internal regulation, working procedures and methodologies and ethical code.

The respondents that stated that there are no documents to attest the professional judgment in the company are related mostly to the service providing sector.

Fig 3. The percentage that disclose the existence of documents regarding the professional judgment within companies



Source: issued by the authors

In the academic environment, the respondents mentioned the following documents: the University Charta, study plans; Deontological and ethical codes; internal procedures and regulations.

In the distribution sector, the respondents named as attestation document of professional judgment: Ethical code, Job description; collective work agreement; internal rules and procedures; SSM responsible; IT policies, methodological norms.

Regarding the legal domain, the respondents mentioned the following documents: Procedure codes; internal regulation; Legislation; Legal opinions.

Within the public services category and other categories; the respondents have expressed their opinion regarding the documents used in using the professional judgment such as: Code of ethics, Job description; internal regulation; collective working agreement, Fiscal Code.

The participants from the service and consultancy along with the production sector have mentioned the following documents that lead to the professional judgment:

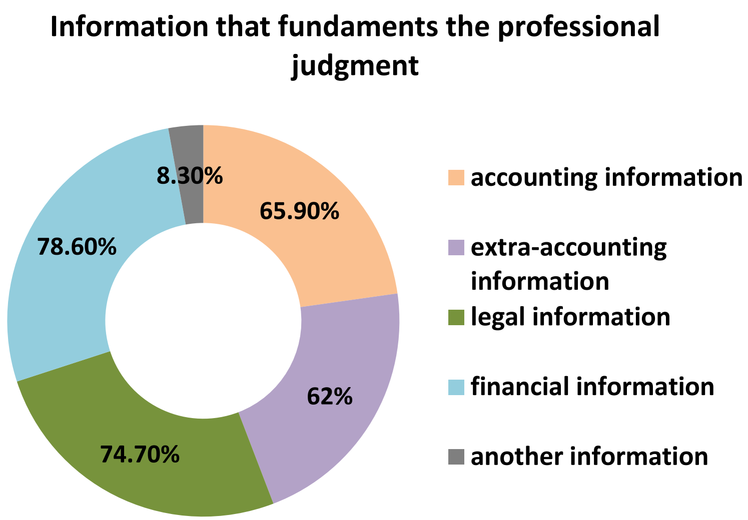
International professional and ethical Standards, Local regulation; Procedure norms and regulation; International audit standards (ISA); international reporting standards (IFRS); financial audit reports.

- **Types of information that the professional judgment relies on**

The elements that support and direct the professional judgment represent a foundation in carrying the activity of the employee. The informational system, under its various aspects, depending on the company's domain of activity at a general level and depending on each activity itself at a particular level, create a perfect environment for the development of the professional judgment.

In the research we carried, the participants appreciated that the financial information (78.6%), legal (74.7%) and accounting (65.9%) are the most predominant in the organizational field within the formation of the professional judgment. Excluding the three types of information stated before, the respondents chose also extra-accounting information (62%).

Fig. 4. Information that fundaments the professional judgment

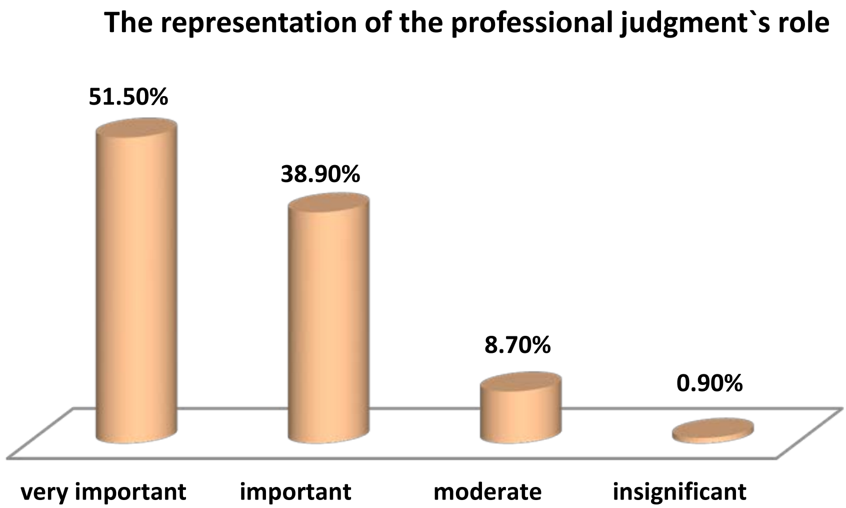


Source: issued by the authors

- **Role of the professional judgment**

In accordance with the centralized results, we ascertain that the professional judgment gets a determinant role in the professional activity. The respondents, in a percent of 90.4% have designated to the professional judgment a very important role. Regardless of restrictions in the practical activities, the professional judgment is a concept treated with seriousness within companies taking into consideration that its exertion establishes how it will macroeconomic fit into the market.

Fig. 5. The representation of the professional judgment`s role



Source: issued by the authors

4. The conclusions of the quantitative research based on the questionnaire

Our research was focused on the study of elements contained by the complex mechanism of the professional judgment. The hypothesis formulated at the beginning of the study was validated generating a plus of value to the research carried. The result obtained have enhanced the fact that the perception of the professional exo-judgment is an important process at the level of each company regardless its domain.

Following the exposure of the conclusions of the quantitative study carried we mention that the set of objectives has been completely realised.

When taking into discussion the professional judgment within a company, we have obtained after the study carries an important percent of 90.4% when appreciating that the professional judgment is important or very important. This fact is owed to the indissoluble bond established between the concept of "professional judgment" and the activities carried at an organizational level by doing the job's tasks having as background mechanisms and actions activated by the use of the professional judgment.

Another important description attribute of the professional judgment is represented by the importance when it gets appreciated at the level of the company. To be retained is the fact that in the research we carried a high importance was given to the professional judgment by the participants to the study in a high percent – 79.2%.

The objective regarding the identification of the existence within the company of regulation that suppose the use of the professional judgment has been fulfilled, meaning that the results obtained have led to the highlight and exemplification on areas of activity of documents and working procedures that imply the use of the professional judgment in the activity of the employee.

The objective that refers to the determination of categories of information on which the professional judgment relies has been realized. Through the centralization of information provided by the respondents, we conclude that the professional judgment is founded on a large diversity of information, on distinct categories, financial information gathering a 78.6%, legal 74.7% while the accounting got 65.9%. Beside these three categories, the participants attending the study have mentioned other categories of information, named extra-accounting.

The recognition of the influence of the professional judgment at a company level has been signalled by the majority of interviewed respondents and has been revealed with their help through the assembling of the complex content of the professional judgment that incorporate: the approach from the importance point of view, establishing the categories of information it relies on, the frequency use and highlighting its importance at an organizational level. All these contained elements provide to the professional judgment a high level of accuracy and rigor in carrying the activity of an employee within the company and presents a direct impact over the quality of their decisions, therefore lead to the validation of the hypothesis that states *"the rigor of the professional judgment has an impact over the quality of decisions"*

The present research represents just a part of a vast research based on a high number of hypothesis, sets of objectives and determinant factors. We aim to gradually share the construction of the concept of the professional exo-judgment through methodical exposure of the visions we issue in a manner that presents a high scientific degree and elements of innovative conceptualization.

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PREPARING THE BANKING SECTOR FROM THE REPUBLIC OF MOLDOVA FOR THE IMPLEMENTATION OF BASEL III

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Abstract: *Basel III Agreement is a framework of bank regulation which aims to strengthen the stability of the financial system by applying stringent standards designed to improve its ability to absorb shocks from the economic and financial sector and to reduce the risk of contamination from the financial sector to the real economy. The purpose of the article consists in the identification, analysis, monitoring and control of risks according to international standards in conditions of bank exposure to diverse risks. The research was made in base of analyzing the banking sector of the Republic of Moldova. For this the following measures were taken: identification of background of current situation of the banking system; disclosure and justification of credit risk; analysis of the European experience of implementing the Basel III Agreement and the identification of strategies for implementing this agreement in the banking sector of the Republic of Moldova.*

Keywords: *Basel III Agreement, banking system, financial crisis, bank regulations, macro prudential supervision, bank credits.*

1. Introduction

Basel III is a fundamental review of the regulatory and supervisory framework of the banking industry with the objective to strengthen the stability of the financial system, by applying the required standards to improve its ability to absorb economic and financial shocks and to reduce the risk of contamination from the financial sector to real economy.

The major difference from the previous agreements is the much broader covering area, the measures being both micro-prudential (covering individual bank risks) and macro-prudential (covering the entire banking system).

Full implementation of the Basel III Standards, in line with the strict deadlines, is essential for strengthening the financial system. Implementation responsibility falls not only to regulatory bodies, but extends the scope of specialists to risk managers of banks and implicitly to auditing, which has a key role in the independent and disciplined review of management efforts. The challenge is that implementation takes place during an uneven and uncertain post-crisis recovery of states.

The scope of research is risk identification, analysis, monitoring and control according to international standards, in the context of diversified risks exposure by banks. The investigation was carried out on the basis of analysing the banking sector of the Republic of Moldova.

Methodology of research. For the elaboration of the article general scientific knowledge of economic principles was applied, as well as concrete historical approaches that would allow the consideration of development phenomena and processes. The techniques used were: induction, deduction, comparison methods, synthesis and analysis.

2. The quality of regulation and supervision of the banking system in the Republic of Moldova

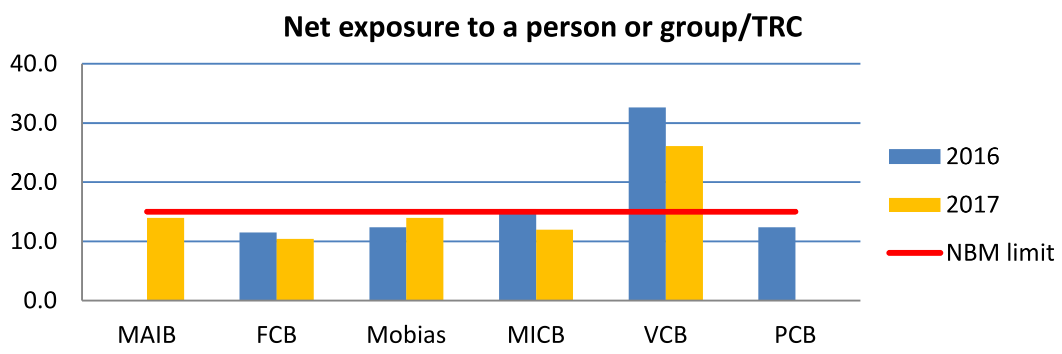
The banking sector of Moldova is in a recovery phase after the crisis from 2014 and is characterised through severe systemic problems: insufficient transparency of shareholders and actual beneficiaries, vague lending procedures, poor management, poor internal control procedures and audits, and so on.

As a result of this crisis 3 banks stopped their activity and were declared bankrupt due to non-compliance with the National Bank of Moldova (NBM) regulations; also, the crediting activity of the banking sector was reduced from 40,842 million MDL in 2014 to 33,473 million MDL in 2017, as a result the short-term liquidity increased from 33,76% in 2013 to 55,48% in 2017. At the same time, the NBM managed to stop the process of developing new dubious and compromised loans, so the level of this indicator reduced from 11,7% in 2014 to 10% in 2015. However, the loan portfolio has deteriorated since 2016, so that in 2017 the level of this indicator has reached 18,4%.

The NBM imposes the banking sector a number of limits to be respected, further a retrospective of the implementation of these regulations is realized:

1) ***Large exposures: The net exposure assumed by the bank towards a person or group of connected persons must not exceed 15% of the bank's total regulatory capital (TRC)***.

Fig. 1. Evolution of Net exposure to a person or group/TRC, Rep. Moldova



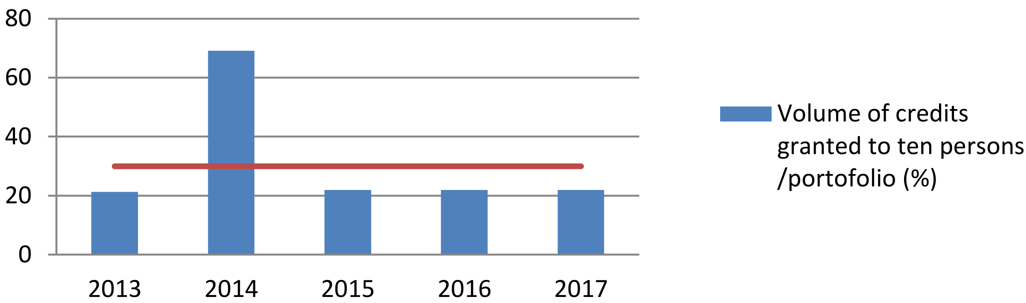
Source: elaborated by authors in base of data retrieved from the site of NBM

During 2013-2015, no bank records values for this indicator. In 2016-2017 all the banks respected this imposed limit except for the BC "VICTORIABANK" JSC, which in 2016 registers 32,6% and in 2017 its value decreases to 26,1%. The recorded values in the banking system are well above the limit imposed by NBM (see fig. 1).

The amount of net debt on loans granted to ten persons, including groups of connected persons, which are by size the first net credit, minus credit losses and provisions on those contingent liabilities, shall not exceed 30% of the total amount of the bank loans and contingent liabilities to ten individuals, including groups of connected persons, which are by size the first net debt on credit minus the provision for the contingent liabilities.

It is noticed that the value of this indicator is approximately static over the years, except for 2014 (see fig. 2). In 2014, two of the three problematic banks did not respect this imposed limit, namely: BC “Banca de Economii” JSC – 39,7%, BC "Social Bank " JSC – 1216,1%. In 2017 the banks with the highest values of this indicator were: BC “BCR Chisinau” JSC – 29,9%, BC "EXIMBANK - Gruppo Veneto Banca" JSC – 29,3% and BC "VICTORIABANK" JSC – 27,5% .

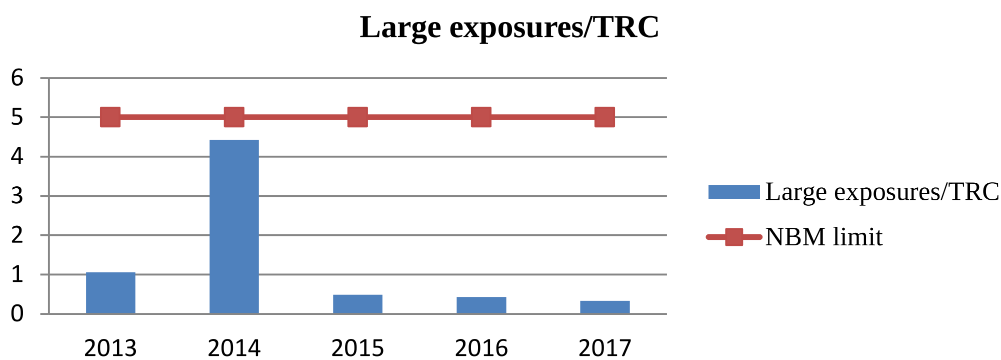
Fig.2. Evolution of net debt on loans to ten persons minus losses on loans / total portfolio indicator, Rep. Moldova



Source: elaborated by authors in base of data retrieved from the site of NBM

The sum of all "large" exposures should not exceed more than five times the TRC.

Fig. 3. Evolution of large exposures/TRC indicator, Rep. Moldova



Source: elaborated by authors in base of data retrieved from the site of NBM

It is noticed that over the years the banking sector shows a decreasing trend of this indicator from 1,06% in 2013 to 0,33% in 2017 (fig. 3). In all years, the limit of large exposures imposed by the NBM is respected. In 2014, the value of this indicator is distorted by the values recorded at the three problematic banks, as follows: BC "Banca Sociala" JSC registered 40,71%, BC "Banca de Economii" JSC - 32,15 % and BC "UNIBANK" JSC – 5,94%. In 2017 the banks with the highest level of this indicator were: BC "Moldindconbank" JSC – 0,76%, BC "VICTORIABANK" JSC – 0,71% and BC "MOBIASBANCA - Groupe Societe Generale" SA – 0,35% %.

The total amount of the bank's net exposures in Moldovan Lei to foreign currency exchange in respect to natural persons, including those engaged in entrepreneurial activity or other type of activity, must not exceed 30% of the TRC, of which the total amount of net exposures, other than mortgages, must not exceed 10% of the TRC.

The aggregate amount of net debt on loans granted and contracted with the bank by shareholders directly or indirectly controlling or controlling less than 1% of the bank's share capital, including their affiliated persons, must not exceed 20% of Tier 1 bank capital.

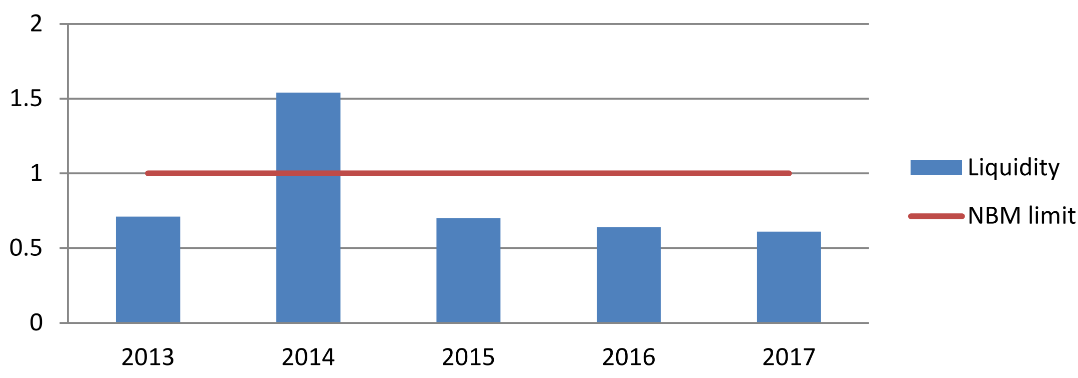
The aggregate amount of net debt on ***loans granted*** and contracted with the bank by shareholders directly or indirectly controlling or controlling less than 1% of the bank's share capital, including their affiliated persons, must not exceed ***20% of the Tier I capital of the bank.***

Banks from the domestic banking sector have respected this limit over the years, so the level of this indicator registeres a declining trend from 11,28% in 2014 to 6,28% in 2017. Banks with the highest values are BC. "Energbank" JSC – 13,9%, BC "Moldindconbank" JSC – 9,01% and BC "Moldova - Agroindbank" JSC – 8,98%.

2) Liquidity.

The bank's long-term liquidity (principle I) indicator must not exceed 1. A downward trend of this indicator is recorded over the years, from 0,71 in 2013 to 0,61 in 2017 (fig. 4). The value of this indicator in 2014 was not respected because some banks recorded violations (for example, BC "Banca Sociala" JSC – 19,69).

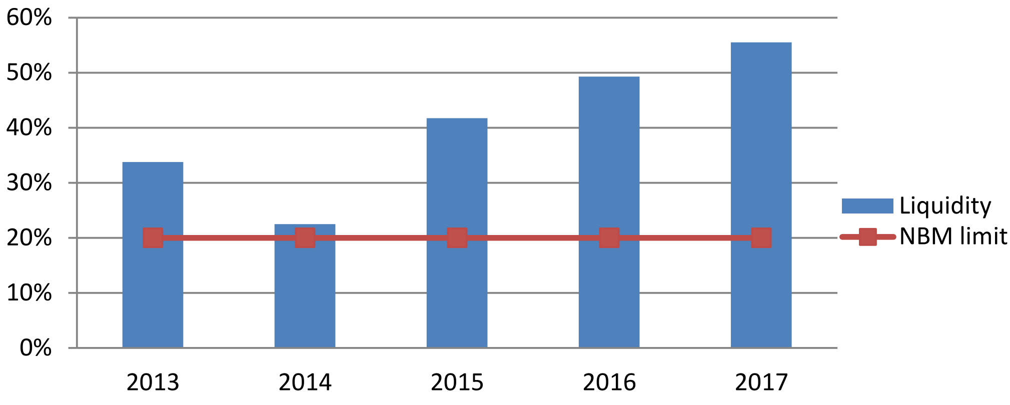
Fig. 4. Evolution of long-term liquidity (principle I), Rep. Moldova



Source: elaborated by authors in base of data retrieved from the site of NBM

From November 30, 1998, banks must achieve and maintain the current liquidity ratio ***(principle II) of at least 20%.***

Fig. 5. Evolution of short-term liquidity (principle II), Rep. Moldova



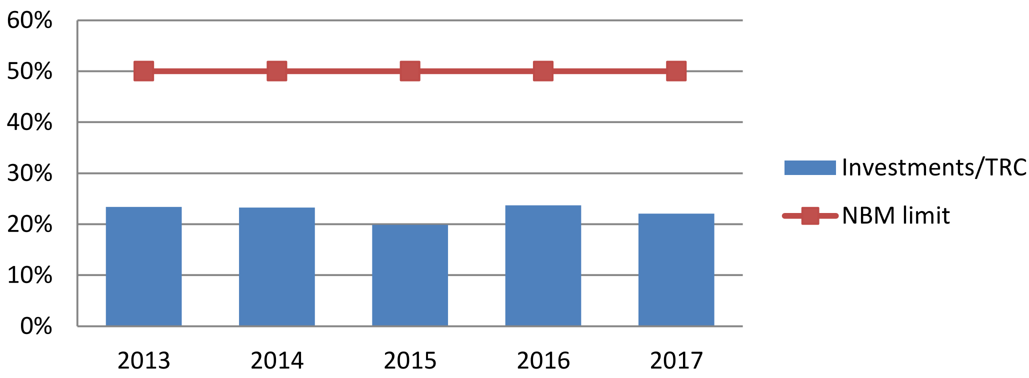
Source: elaborated by authors in base of data retrieved from the site of NBM

It is noticed that there is a steady upward trend in short-term liquidity from 33,76% in 2013 to 55,48% in 2017, so over the years the banking sector respects this limit (fig. 5). In 2017, the banks with the highest liquidity level were: BC "Victoriabank" JSC – 68,09%, BC "Comertbank" JSC – 61,08% and BC. "Energbank" JSC – 60,5%.

3) Investments' limit.

A bank's investment in tangible assets should not exceed ***50% of its TRC [7].***

Fig. 6. Evolution of bank's investments in tangible assets/TRC indicator, Rep. Moldova



Source: elaborated by authors in base of data retrieved from the site of NBM

During 2013-2017, banks comply with the limit imposed by the National Bank of Moldova (fig. 6). This indicator fluctuated from 23,38% in 2013 to 22,08% in 2017. In 2017 the banks with the highest level of this indicator were: BC "FinComBank" JSC – 46,14% BC "EXIMBANK - Gruppo Veneto Banca " JSC – 38,93% and BC "ENERGBANK " JSC – 30,28%.

The total value of a bank's investment in tangible assets and participation rights in the capital of legal entities, except for banks, should not exceed 100% of its TRC [7].

It is noticed that banks in the banking sector have respected this limit over the years. There is an increasing trend of this indicator from 23,38% in 2013 to 27,06% in 2017. The banks that recorded the highest level of this indicator in 2017 were: BC "FinComBank"

JSC – 48,21% BC "VICTORIABANK" JSC – 40,23% and BC "EXIMBANK - Gruppo Veneto Banca" JSC - 39%.

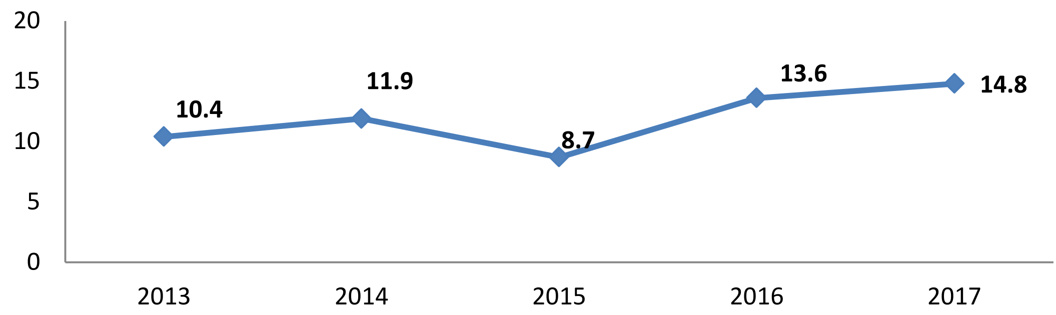
4) Bank' shareholders

Without the prior written permission of the National Bank of Moldova: No potential acquirer can in any way acquire a substantial share in the bank's share capital or increase its substantial share so that its proportion (s) of voting or shareholding in the share capital to reach o r exceed the level of 5%, 10%, 20%, 33% or 50%, or so that the bank becomes a branch of it [6].

5) Bank performance indicators:

- *K1=expired credits/credit portfolio*

Fig. 7. Evolution of K1 indicator, Rep. Moldova

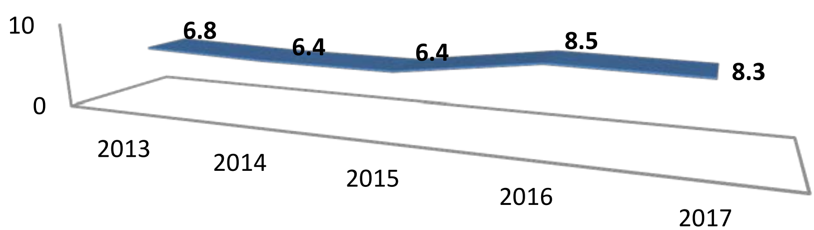


Source: elaborated by authors in base of data retrieved from the site of NBM

It is noticed that K1 indicator has grown from 10,4 in 2013 to 14,8 in 2017, due to the fact that the volume of expired loans increased at a higher rate than the value of credit portfolio (fig. 7). The banks that recorded the highest level in 2017 of this indicator were: B.C. "EXIMBANK - Gruppo Veneto Banca" JSC - 43%, B.C. "VICTORIABANK" JSC - 26%, B.C. "ENERGBANK" JSC – 12,5%. The banks that recorded the lowest level of this indicator were: B.C. "FinComBank" JSC - 1.9%, B.C. "MOBIASBANCA Groupe Societe Generale" JSC – 3,0%, B.C. "COMERTBANK" JSC – 3,7%.

- *K2= provisions for loan losses/Total Assets*

Fig. 8. Evolution of K2 indicator, Rep. Moldova



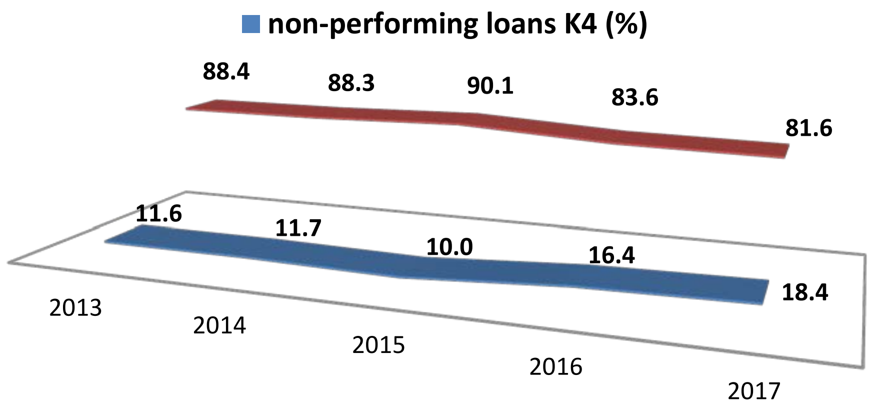
Source: elaborated by authors in base of data retrieved from the site of NBM

This indicator registers a growing trend so that in 2013 it reached 6,8 while in 2017 it increased to 8,3 (fig. 8). This is due to the fact that banks recorded more provisions for loan losses than in previous years.

- *K3 = performing loans/credit portfolio*

- *K4 = non-performing loans/credit portfolio*

Fig. 9. Evolution of K3 and K4 indicators, Rep. Moldova

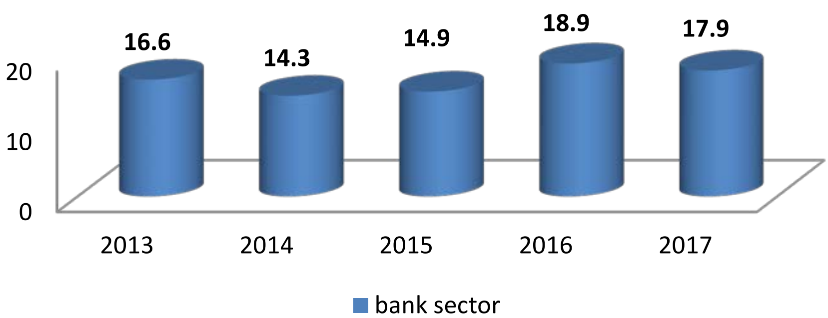


Source: elaborated by authors in base of data retrieved from the site of NBM

We note that the quality of the credit portfolio of the banking sector worsens year by year, in 2013 the ratio of non-performing loans to total portfolio was 11,6% and in 2017 the level of this indicator increased to 18,4% (fig. 9). This increase is due to the fact that the following banks worsened their credit portfolio considerably: BC "Moldindconbank" JSC this indicator rose from 16% in 2016 to 29,4% in 2017, BC. "EXIMBANK - Gruppo Veneto Banca" JSC level of this indicator rose from 28,9% in 2016 to 34,05% and BC "COMERTBANK" JSC increased this indicator from 16,1% in 2016 to 20,26% in 2017. The banks with the most non-reforming loan portfolio are: BC "EXIMBANK - Gruppo Veneto Banca" SA - 34%, BC "VICTORIABANK" JSC - 33% and BC "Moldindconbank" JSC – 29,4%. The banks with the highest credit portfolio are: BC "FinComBank" JSC – 4,02%, BC "MOBIASBANCA - Groupe Societe Generale" JSC – 7,4% and BC "EuroCreditBank" JSC – 8,82%.

- *K5 = non-performing credits/TRC*

Fig. 10. Evolution of K5 indicator, Rep. Moldova



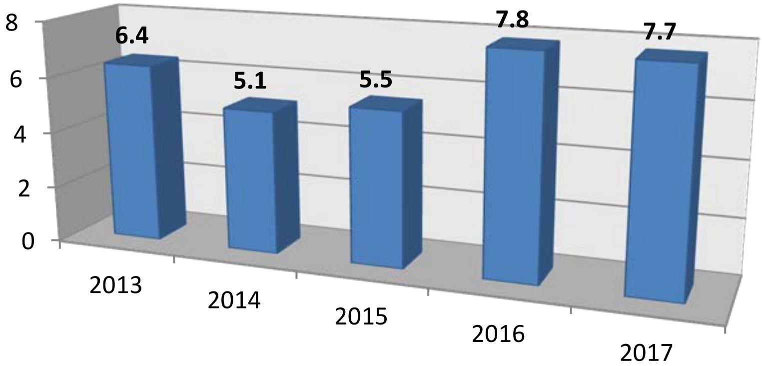
Source: elaborated by authors in base of data retrieved from the site of NBM

We observe an increasing trend of this indicator, so that in 2013 this indicator reached 16,6 and in 2017 rose to 17,9 (fig. 10). Banks with the highest level are: BC

"Moldindconbank" JSC – 46,6%, B.C. "COMERTBANK" JSC – 18,8%, BC "MOBIASBANCA - Groupe Societe Generale" JSC – 18,7%. The lowest level is recorded by BCR Chisinau JSC -3,8%. This is due to the fact that non-performing loans have increased to a greater extent than TRC.

- *K6 = non-performing credits/Total Assets*

Fig. 11. Evolution of K6 indicator, Rep. Moldova



Source: elaborated by authors in base of data retreived from the site of NBM

An increasing trend of this indicator is observed, so that in 2013 this indicator reached 6,4 and in 2017 rose to 7,7 (fig. 11). This is due to the fact that non-performing loans have increased to a greater extent than the bank's assets.

The NBM has considerably tightened bank supervision and reporting standards, including those related to compromised loans**.** However a number of systemic problems persist, among them: issues of transparency of shareholders and effective beneficiaries, corporate governance and inefficient management, weak internal control procedures and audits. Although the NBM stopped creating new, dubious and compromised loans, the solution of the existing ones is difficult.

The intervention of the NBM at the three largest commercial banks, MAIB, MICB and VictoriaBank, which hold about 75% of the total assets in the banking system, highlighted a number of systemic problems of the banking sector. These problems have determined NBM's banking regulatory and supervisory policy for the next 2-3 years [4]. These issues can be grouped into five categories: *shareholders' transparency; credit risk, including bad loans, "large" exposures and exposures to affiliated persons; operational risk; internal governance; combating money laundering and terrorist financing*.

The success of overcoming these vulnerabilities of the banking system depends on how quickly banks will be able to recover from the crisis and will operate normally. Regarding shareholders 'transparency, most banks have long been facing problems with the opaque structure of shareholders, which can significantly affect corporate governance and jeopardize banks' financial standing. In this context, more attention should be paid to interacting with affiliated persons and exposures to affiliated banks, in order to avoid a negative influence on the bank's financial condition. In 2016, the NBM found two largest groups of two groups of shareholders operating in concert and holding substantial shares without the prior written permission of the NBM. The NBM has proposed that, by the end of June 2017, all banks should carry out the exercise of shareholders' transparency [4]. For this purpose, exhaustive information on the shareholders' reputation, criminal history, professional activity, financial soundness, including the provenance of the financial resources used to acquire the share of participation in the bank's capital, was requested. At the same time, the transparency of the banking sector could be achieved by attracting high-quality investors with an impeccable reputation at local and international level, demonstrating financial soundness capable of ensuring the bank's financial resistance to internal and external shocks and a strong corporate governance.

Credit risk is another major vulnerability in the banking sector. During the years 2016-2017 both bad loans and the loan portfolio had a negative trend. Thus, non-performing loans increased by 12% in 2016 vs 2017, accounting for 18.4% of the loan portfolio in 2017. In 2017, credit risk continues to be the most significant. The NBM aims to carry out controls to verify asset quality, "large" exposures, exposures to affiliated persons, and assess credit risk policies and practices. Particular attention should be paid to non-performing loans, the modalities of their primary reimbursement, and the quality of the secondary reimbursement source, namely the quality and value of credit provision. In this context, banks' procedures, policies and strategies for managing and diminishing the level of non-performing loans, identifying groups of people acting in concert to determine "large" exposures and not allowing the set limits to be exceeded should be thoroughly examined.

Operational risk is another danger to banks. Potential losses may be caused by operational risks such as human factors, including scams, security of IT systems, misconduct of the bank's internal processes, external environment, etc. The NBM proposed in 2017 to assess banks' policies and practices in identifying and preventing these risks. Thus, policies and practices will be evaluated through the minimization of the impact on capital as a result of the damage, the allocation by banks of the means to ensure data security, cyber-prevention, etc. Additionally, on-the-spot controls should address bank compliance with internal policies on operational risk management.

3. Estimation of the degree of preparing the banking sector from the Republic of Moldova for the implementation of Basel III

In the case of the Republic of Moldova, the degree of preparation of the banking sector for the implementation of Basel III is primarily focused on the fact that the national banking system, through decision-makers at the central bank and credit institutions, needs to know the provisions of the new agreement. The new situation requires the national banking system:

- transposition of Directive 2013/36 / EU of 26 June 2013 and of Regulation 575/2013 of 26 June 2013, acts included in the EU-Moldova Association Agreement and, respectively, in the National Implementation Plan of the Association Agreement;
- transposing of the provisions of the Basel III Capital Requirements and, at the same time, regulate the prudential treatment of the various risks (credit, market, operational, etc.) for the calculation of risk-weighted exposure.

Based on the analyzed situation, we underline that the implementation of the Basel III Agreement implies the need to act on two main directions, namely [1]:

- Revision of the capital requirements in qualitative and quantitative terms;

- developing short and long term requirements for liquidity.

Revision of the qualitative aspect of capital consists in the elimination of the third tier capital. Another requirement regarding the qualitative aspect of capital is the restriction of the Tier II capital. Thus, the requirements for capital adequacy will amount to 4,5%, and to the first tier capital - 6% [3].

The review of capital requirements in quantitative terms implies three types of surplus (buffer) for the risk-weighted capital adequacy indicator. These are overcapacity to cover procyclical risk (+ 2,5%), overcapacity to maintain capital (+ 2,5%) and additional over-provision to systemically important financial institutions (+ 2,5%).

The new requirements for short-term bank liquidity refer to the maintenance of liquid resources required to honour all one-month obligations and long-term obligations to maintain the necessary resources for obligations fulfilment over a year.

Although the implementation of Basel III regulations is projected for the next 5-7 years, banks' compliance with capital requirements and liquidity requirements will not be difficult for some reasons. First, banks, in accordance with current bank capital regulations, do not have third tier capital. Second, the indicators of the capital adequacy of the social and the first grade banks are at a level that allows them to meet the eventual requirements for that purpose. Thirdly, banks' compliance with liquidity indicators reveals the existence of adequate sources of funding to meet potential needs both in the short and long term.

Similarly, the degree of preparation of the national banking system for the implementation of Basel III results from the approval of *the Law on Banking Activity no. 202 of 06.10.2017.* This normative act attests to the fact that the Moldovan banks will no longer operate after the Basel I system, which was approved in 1988, but will pass to Basel III.

Banks will have a period of three years until 2020 to fully comply with the new rules. The document will come into force on January 1, 2018. According to the law, the rights and powers of the NBM in the process of assessing and supervising banks will be extended, including the sanctions applied to them. At the same time, the law provides for the improvement of the corporate governance framework in banks and their obligation to have adequate capital in relation to the risks to which they are exposed. The new law will also allow the harmonization of national banking legislation with international standards and principles.

In order to improve corporate governance in banks, the regulation on the bank's activity management framework came into force on July 1, 2017, with provisions for risk management, requirements for risk and risk management policies on appetite and risk profile, which ensures a gradual transition to the Basel III framework transposition package.

At the same time, in order to improve the system of continuous promotion in the position of administrator in the banks of the persons who correspond to the appropriate and appropriate principle and, respectively, to ensure the efficient management of the bank, on 27 July 2017 the new regulation was approved in the new regulation towards the administrators [8]. The amendments provide for the improvement of the qualification and experience criteria of the proposed person for the position of administrator, the assessment being carried out by the bank and the supervisor for each person, by applying the judgments on the basis of the significant information related to all the evaluation criteria and taking into account any other relevant circumstances, including the size of the bank, the nature and complexity of its business.

For the final analysis of the banking sector's level of preparedness in the context of the transition to Basel III capital requirements, the National Bank initiated an impact assessment of the Basel III capital change, the first pillar, which aims to determine the quantitative and qualitative impact of regulations on the regulated capital requirements of banks.

Following the publication of the new bank law in the Official Gazette of the Republic of Moldova, the draft secondary normative framework under the Law on the activity of banks (more than 20 regulations) and the COREP reporting framework, which will enter into force on stages. These regulations were elaborated within the Twinning project of the European Union to strengthen the capacity of the NBM in the field of banking regulation and supervision in cooperation with the Central Bank of the Netherlands and the Central Bank of Romania.

At the level of the RM, the NBM endorsed the Basel III Implementation Strategy in the light of the European legislative framework in April 2016. At that time, the document aimed at identifying the measures needed to implement the European Banking Regulation and Surveillance Package and raising awareness of the sector banking for the purpose of proper compliance [3].

The strategy outlined describes how the European Union's legislative package will be transposed and implemented between 2016-2020. Thus, it is now necessary to establish a timetable for entry into force and implementation of the provisions of the new legislative framework after its elaboration. These clarifications will give the banking sector more predictability of the measures and actions that will be undertaken by the NBM as a supervisory authority.

4. Conclusions

It is necessary to continue the process of promoting reforms in the banking sector, in particular establishing a transparent shareholder structure in order to attract new solid investors, adequately assessing the bank's management and identifying transactions with affiliated banks. At the same time, the implementation of the Basel III standards will increase the safety and soundness of the banking sector, as well as the strengthening of its resistance to shocks and crises.

To implement Basel III in the Republic of Moldova, the following recommendations are proposed:

1) Creating a sound basis for prudential regulation, including capital adequacy, financial leverage and liquidity, development of supervisory processes, market discipline, and risk management principles and maintenance of financial stability.
2) Employing qualified staff or training existing staff not only within the NBM but also at the level of each bank to ensure that the new requirements are implemented in an efficient and qualitative manner.
3) Presentation by banks of the detailed plans for the implementation of the new requirements and identification of the necessary resources for this process and reporting on the process of assessing the adequacy of the internal capital, the process of assessing the adequacy of internal liquidity.
4) At the same time, in order to ensure a harmonious implementation at the level of the banking system, it is necessary to create transitional provisions specific to each regulated area, which will allow for the timely distribution of regulatory pressure on banks. Transitional arrangements will be discussed and negotiated with banks both at the start of the transposition process and before the implementation phase;

5) Banks should assess how changes resulting from the application of the new requirements correspond to the risk profile and the ability of banks to discuss any issues arising during the implementation of the new requirements with the NBM as supervisor to ensure correct interpretation and coherent new rules.
6) The NBM must continuously ensure bilateral dialogue with banks in the implementation of Basel III requirements and aim to communicate the expectations of the NBM on a regular and effective basis.
7) Adjusting the business model. Banks should review profitability indicators in the context of a higher regulatory environment. Also, some business segments will be evaluated on "accessibility" criteria, given the funding and capital deficit in the future. Redesigning products and services to ensure that they continue to meet customer needs, while optimizing capital and bank liquidity [9].
8) Banks must strive to improve their ability to pass on risks. One way is closer cooperation between the bank and the creative institution of the product so that both teams are engaged in increasing the volume of credits that can be securitized, sold or syndicated. Another way of transferring risk is to expand the bank's partnerships on trade union and securitization issues, both geographically and by industry.

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COLLECTIVE REDRESS FOR CONSUMERS: TOWARD AN EU WIDE COLLECTIVE ACTION MECHANISM

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Abstract: *At this moment there are strong signals that is a need for pursuing a solution for European consumers - by way of EU legislation - regarding a mechanism of collective redress of the mass harm produced to EU spread consumers. This study examines the different mechanisms available to consumers to resolve disputes, from private complaints handling to ADR and class actions. This paper aims to analyses the advantages and disadvantages of different approaches to dispute resolution and redress mechanisms, the limits of the out of court settlements and the current situation in the EU Member States, and the cross-border cases and solutions. It also approaches the enhance and the interconnection of the existing national ADR systems in creation of a powerful unified pan-EU mechanism, provided by Directive 2013/11/EU of the European Parliament and of the council on alternative dispute resolution for consumer disputes. At this moment there are strong signals that is a need for pursuing a solution for European consumers - by way of EU legislation - regarding a mechanism of collective redress of the mass harm produced to EU spread consumers.*

Keywords: *consumer disputes, collective redress, alternative dispute resolution, cross-border cases, settlement.*

1. Introduction

Even certain collective redress mechanisms exist all over Europe, their efficiency is contentious. Surveys such as “Fitness check of consumer law[3]” and “Evaluation of the effectiveness and efficiency of collective redress mechanisms in the European Union[4]”

[3] http://ec.europa.eu/newsroom/just/item-detail.cfm?item_id=59332
[4] http://ec.europa.eu/consumers/redress_cons/collective_redress_en.htm#Studies

have revealed that the existing redresses are rarely used or they do not determined the expected results, in almost all Member States.

Collective redress for compensation, also known as a group action or a class action, reunites consumers who have suffered the same or very similar loss or harm caused by the same trader. They come in court as a group and seek redress, in one legal claim.

Alternative dispute resolution it’s a collective term for the ways that parties can settle a dispute by means of extra-judicial mechanisms with (or without) the help of a third party.

Even if these two notions of „collective redress” and „ADR”, at first sight, apparently have little in common, these two topics have become closely related in disputes regarding consumers who have had their rights violated by traders.

Even if judicial collective redress procedures cannot be replaced by Alternative Dispute Resolution (ADR) or amicable settlements, we must put aside the assumption that the courts offer the only technique that can deliver redress or that is not possible an amicable settlement procedure for mass claims. Parties in dispute should remain free to recourse to alternative means of dispute resolution before or in parallel to the formal introduction of the judicial claim, taking into account all available options.

According to international and European human rights law, the notion of access to justice obliges states to guarantee each individual’s right to go to court - or, in some circumstances, an alternative dispute resolution body - to obtain a remedy if it is found that the individual’s rights have been violated.

Non-judicial pathways to justice are also considered, including non-judicial bodies and alternative dispute resolution methods. Alternative dispute resolution (ADR) procedures, such as mediation and arbitration, provide alternatives to accessing justice via formal judicial routes. The EU has encouraged the use of ADR with legislation such as the EU Mediation Directive and a variety of consumer protection initiatives.

Dispute Resolution is one of the most talked-about topics nowadays. An area barely known or practiced a decade ago, it has now become the most reachable 'tool' for people who seek justice. Now we know that Court is not the only solution, and even more, we have begun to see it as a last resort solution.

The legal needs of ordinary people as consumers in their disputes with traders have changed over the last decade. After years of litigations and due to the large amounts of money and lengthy judicial procedures involved in the trial process, the consumers and the consumer’s communities or consumer’s associations have increasingly turned to legal alternatives that are more prompt, private and economical than the courtroom. Also, when the traders are faced with a dispute regarding the consumer’s right, due to the changes in consumer protection legislation, the companies are learning that, whenever possible, it is more advantageous to them to solve their differences between themselves rather than relying on an expensive, time-consuming and sometimes inefficient judicial system. Now, the parties in dispute can reach practical and private agreements instead to fight for years and spend huge amounts of money in endless courtroom battles by using the ADR bodies and the Online Dispute Resolution (ODR) bodies have been created and linked together thorough the European Union. Almost all of the ADR systems use one or more of the same elementary dispute resolution techniques of negotiation, mediation, conciliation and arbitration.

Generally, the procedural rules regarding arbitration are more formal that the rules of mediation, but not as strict as procedural rules that govern litigation in court. Therefore, mediation is seen as a non-binding process and arbitration as a binding action, or, simplifying, in ADR, binding arbitration replaces the trial process with the arbitration procedure.

2. Romania's experience in ADR

Alternative Dispute Resolution mechanism in Romania provides arbitration and mediation, according to Government Ordinance no. 38 of 26 August 2015 on Alternative Dispute Resolution between Consumers and Traders. While arbitration procedure is very similar to the common judicial procedure due to provisions regarding the arbitration from the Romanian Civil Procedural Code, that regulate notifications, summoning, compatibilities and binding effect (general legal framework on arbitration is governed by the Code of Civil Procedure, Law No. 134/2010 on the Civil Procedure Code, republished in articles 541-621), mediation is far more different due to the fact that the mediator's activity involves mostly counseling and the mediation agreement is essentially non-binding. Even that arbitration is less formal than court, though the claimant/ the consumer and the other party may present evidences, appear at hearings etc. Unlike mediation, an arbitrator or panel of arbitrators makes a decision and the decision may be legally binding. But, in case an alternative dispute resolution does not settle the problem, the consumer may choose to sue the trader.

Nowadays, after the explosion of the trials against the financial institutions, the insurers, cars producers telecom, internet or energy providers or even against governments illegal actions, we live in a changed reality where many judicial systems face increasing workloads and where access to courts can be expensive. And so, in many aspects of life when a conflict arise, due to the vast amounts of time and money involved in the trial process, the consumers and business communities start increasingly to choose the legal alternatives that are more prompt, private and economical than the courtroom. The principles of shared costs, and the power that multiple complainants can have, are well understood and appreciated by European consumers.

But, despite the advantages provided by these quasi-judicial procedures brought before the non-judicial bodies (these ADR methods are recognized as more expeditious, private, less formalistic and generally much cheaper than a trial), however, the large majority of non-judicial bodies do not have the power to issue binding decisions, and their powers of compensation are generally limited. Also, in case of consumers who have suffered the same or very similar damage from the same trader and gather in a group of claimants, the very large numbers of consumers complicates the evaluation of the case and of damages, and the total value of claim is so high that surpass the capacity of ADR bodies to provide proceedings for mass claims. There are a very few alternative dispute resolution bodies which developed the procedures for mass claims: Swedish and Finnish Consumer Complaint Boards, Spanish Arbitration System. Another limitation of the power of the ADR bodies is that it is impossible to take provisional measures during the negotiations, like to immobilize a company's assets. In these situations of multiple claims situations, ADR or the amicable settlements could be part of the „consumer toolkit", but judicial collective redress procedures cannot be replaced by alternative dispute resolution.

As example of the limits of the ADR use are eloquent in the Volkswagen case, where the company refused to negotiate for compensation with consumers from European Union. In September 2015, in Dieselgate scandal, Volkswagen admitted that 11 million of its vehicles were equipped with software that was used to cheat on emissions tests. In the

United States, where the scandal was uncovered, Volkswagen reached a settlement agreement with American consumers. The VW group has agreed to pay $1,000 to 500,000 drivers. US owners of VW diesel cars with proposed to pay $500 on a prepaid visa card and $500 in dealership credits as compensation because it cannot yet remove the illegal software. Even if in Europe over 8 million cars have had this defeat device installed and VW may have broken two directives of EU legislation - the consumer sales and guarantees directive and the unfair commercial practices directive[5], the carmaker has said rules in Europe are different and an engine repair is sufficient compensation.

This is one reason for in many EU's Member States jurisdictions, litigation culture still remains dominant; change may be resisted by parties unwilling to submit their disputes to an unfamiliar process, courts still strain under growing pileup of cases, even that the new consumer rights legislation adopted aims to reduce the burden and the pressure, and inspiring prospective litigants deterred by the prospect of a lengthy court process to pursue alternative options.

3. Collective redress for compensation

What is collective redress for compensation: also known as a group action or a class action, it's the situation when consumers who have suffered the same or very similar harm or loss, caused by the same trader, gather and seek redress in court as a group, in one legal claim. Consumer regress for compensation enables a group of consumers who have had their rights violated, to be represented by a third body (for example, by a consumer organization or by a state authority) which seeks remedies for them especially by litigation against the trader.

The role of collective redress results from the reality that, in our mass consumption society fueled by mass production and the globalization of the markets, violation of legal norms can affect a great number of consumers and individual consumers would not go to court fearing high financial costs, expensive or lengthy procedures, time consuming, emotionally draining process, even intimidating tactics and not to forget the unpredictable result.

Also, there are several advantages for what class action lawsuits can be preferable to individual litigation for consumers. Aggregating multiple suits into one suit expedites the legal process and makes it easier for a case to move through the court system, as a class action lawsuit is decided by one judge in one court. A class action is a unique procedure which implies lower litigation costs (costs will be divided among group members), the opportunity for plaintiffs to seek relief when claiming for small amounts of money and opportunity for all plaintiffs to receive damages. When violated rights have low value for each plaintiff, a class action will allow plaintiffs to seek relief who would not have found it financially prudent to do so in an individual lawsuit. This is the case, for example, in consumer lawsuits pertaining to deception or overcharging, where the only damage produced is monetary damage of low value. Also, the use of collective redress mechanisms

[5] Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council ('Unfair Commercial Practices Directive')

attract a large media coverage than individual litigation and/or individual ADR. In case a class action is won by consumers, the judicial precedent is so powerful that the corporation or the authority which would be tempted to abuse its power in the future will retain from such type of abuse.

As example, after the financial crisis caused the inflation of class actions against the financial institutions, the defendants are increasingly wary of their reputation, and media coverage increases the deterrent effects caused by such collective cases than the concomitant abundance of individual litigation.

The downside of the class action brought in front of court is that if the plaintiff's litigator does not plead effectively or the class applicants do not have strong claims, then the legitimate claims of other class members can be hurt.

Also, if the group action is unsuccessful in their lawsuit then individual class members likely do not have the right to bring individual lawsuits in another trial (non bis in idem rule). This is the reason for what the group should consider as first option alternative dispute resolution procedures as a safer way of obtaining redress in mass harm situations. Collective alternative dispute resolution procedure should always be available alongside, or as a voluntary element of judicial collective redress. Even that the principle of party disposition remains the ground principle for the allegations and evidences, applications during the trial and appealing to remedies between the parties and the court in civil proceedings, there is an undeniable tendency, across the Member States, towards a more active role being played by the court. In the content of the principle of the active role of the judge comes in the obligation (and the right of the judge, of course) to put all the diligence as the parties to choose another way of solving the conflict between them, namely the amiable way.

4. Collective redress in Romania

Under Romanian law, class action is not expressly regulated nor collective redress action. Although, there is not currently explicit regulation of procedure in group action in Romanian law, the Civil Procedural Code allows collective actions considering the regulation of such institutions, as joinder of actions, joint claimants, co-plaintiffs, co-defendants, co-participation in trial etc. Also, the Romanian law does not offer a special proceedings for complex class action.

The notion of collective/class actions is not provided within the Civil Procedure Code, but some elements are regulated in certain special laws related to consumer law, labor rights and in Competition Code (modified recently by Emergency Ordinance 39/2017 on damage claims related to cases of competition law infringements and amending the Competition law no. 21/1996).

However, several persons may file an unique claim, according to article 37 of Romanian Civil Procedure Code, in case of the object of the trial is a mutual right or obligation, or if their rights and obligations have the same cause or if there is a close connection between them e.g. their claims derive from similar contracts concluded with the same person.

Unfortunately, in some situations - like it happened in Romania in the class actions regarding misleading the borrowers to CHF loans (between 2013-2015) - this type of cases are discouraged by administrative reasons of courts. In many of these class actions regarding the freezing of the exchange rate of CHF at the level from the time of the concluding of the contracts, courts severed collective files in hundreds and even thousands of individual files, without scrutinized the identity of the legal issues raised collectively by hundreds of consumers and has disunited collective files in hundreds of individual actions.

Notwithstanding the above, a few type of class action developed in Romania and among them are the actions filed by consumer associations in the matter of infringement of consumers' legally established rights and interests. Social and economic sideslips led to infringements in consumers' rights by major economic actors such as commercial banks or non-banking financial institutions, by telecom, transport, touristic companies, by energy providers. The interest in collective claims has registered an increasing trend due to recent amendments in consume legislation. The Government Ordinance nr.21/1992 provides the possibility to establish consumer association, defined by law as non-profit legal persons founded in the purpose of representing the rights and interests of their members or as well as the general interest. On behalf on their members' rights and interests provided by the Government Ordinance 21/1992, Consumer's Code (Law 296/2004), Law no. 193/2000 regarding the abusive clauses in contracts concluded between consumers and traders and other relevant legislation, these associations, among other legal attributes, have the capacity to file claims before courts of justice for the protection of their members' rights and interests, to initiate claims when providers infringe their legal obligations and put to risk their members' rights and interests. Also, associations that meet legal requirements have the possibility to seek for judicial relief in matters of covering consumer‘s losses deriving from dangerous goods or inconsistent services, to obtain annulment of abusive clauses in contracts or to injunct dishonest practices that put consumers' rights and interests to risk.

In case of adhesion contracts that comprise abusive clauses, the law authorizes certain control authorities to notify the court from the professional's domicile or headquarters and to request asking to be bound by an order of court injunctions to change the contracts under development, by removing the abusive clauses, as it is provided by art.12 and 13 of Law no.193/2000. These authorities are represented according to art.8 of the law, by the National Authority for Consumers' Protection representatives, as well as by the authorized specialists of other public administration authorities, according to their competencies. Besides them, the consumers prejudiced through the respective contracts have the right to address to the court.

Especially after the amendment of Law no. 193/2000 by Law 76/2012, in the situation of an court action filed by the National Authority for Consumer Protection in front of a tribunal against a professional concerning abusive clauses in consumer contracts, if the court ruling confirms the abusive character of a contractual clause, the judicial decision will be mandatory for the professional with regard to all such on-going contracts and all pre-formulated standard agreements which are to be used. To receive compensation, if the injunction case was won by National Authority of Consumer Protection, a consumer must introduce a separate action in court, according to the Romanian Civil Procedural Code. The National Authority of Consumer Protection is not entitled to make these kind of request in court. Through a civil case, against a trader the professional need to fully repay the price (and interest) and to compensate damages to the consumer and also to pay the judicial charges.

Recently, in Romania, was adopted the Emergency Ordinance no. 39 of 31 May 2017 on the actions in damages in cases of breach of the provisions of the legislation in competition matters, as well as to change and completing Competition Law no. 21/1996. The Government Emergency Ordinance deals with the transposition into national law of

Directive 2014/104 / EU of the European Parliament and of the Council of 26 November 2014 on certain rules governing actions for compensation under the of national law in the event of infringements of the provisions of competition law in the Member States and the European Union.

5. Collective redress mechanisms and ADR in the European Union

An European Commission consultation6 from 2011 it has been Furthermore, it has been revealed that majority of consumers (an EU average of 79%, rising to 90% in Ireland) would be more willing to defend their rights in court if they could join a collective action. The same consultation showed the consumers strongly prefer collective actions in mass claim situations, 96% said they would certainly or likely join a group action with other persons affected by the same business behavior.

Also, in 2011, in all EU Member States (with the exception of Hungary), a majority of respondents agreed that they would be more willing to defend their rights in court if they could join with other consumers who were complaining about the same thing, according to Flash Eurobarometer 299 "Consumer attitudes towards cross border trade and consumer protection", March 2011

In conclusion, consumers in Member States, which do not have collective redress mechanisms in place, are likely to suffer a detriment as a result of the unavailability of such mechanisms.

Therefore, existing individual redress mechanisms are unsuitable for mass consumer claims. For example, only the internal market of the European Union has 500 million potential consumers and the non-compliance of the producers or providers of services or of the sellers with the legal rules regarding the consumers' rights produce mass harm or hazardous situation for the consumers. Only in a few EU Member States as Spain, Portugal, Belgium and Italy it was possible for consumers to make collective redress claims against the company because very few national mechanisms can really be used with positive results, even if there are an amalgam of national collective redress mechanisms currently in place in the European Union.

These inefficient mechanisms cause lack of compensation for harm suffered by the mass of consumers and is an elapse of the legal system that allows for illegal profit to be retained by unfair traders. Moreover, there are numerous cross border mass detriment situations where consumers are not protected because lack of an appropriate mechanism.
But, do collective redress in court works? Does obtains cheaply, rapidly and effective mass solutions? Collective actions also take long time and are also expensive.

In the OECD's Recommendation on Consumer Dispute Resolution and Redress7, OECD recommends that all states should adopt mechanisms that enable consumers to be able to resolve disputes effectively, whether individually, collectively or through public authorities, and accentuates the need for a combination of mechanisms, preferring direct negotiation as the first option. Early settlement of disputes should be encouraged whenever possible, and the litigation in court should be viewed as a last choice.

[6] http://ec.europa.eu/competition/consultations/2011_collective_redress/ocu_en.pdf
[7] OECD Recommendation on Consumer Dispute Resolution and Redress (Paris: OECD, 2007) at http://www.oecd.org/dataoecd/43/50/38960101.pdf

Collective out-of-court dispute resolution schemes should take into account the requirements of Directive 2008/52/EC of the European Parliament and of the Council of 21 May 2008 on certain aspects of mediation in civil and commercial matters43 but should also be specifically tailored for collective actions.

In the past decade, and especially after adopting the Directive 2013/11/EU on alternative dispute resolution (ADR), alternative dispute resolution has been included within court procedures and separate structures of Consumer ADR have been constructed that are set to expand considerably (Hodges et al. 2012a). Alternative dispute resolution bodies have to meet strict EU quality criteria, which guarantee that they handle the disputes between traders and consumers dispute in an effective, fair, independent and transparent way. Also, under European Union law, consumers can use these bodies to handle all contractual disputes they have with a trader established in the European Union. Alternative dispute resolution can be used for any market sector (such as financial services, e-commerce, tourism, transport, telecoms and energy).

Some of them reached a pan-European coverage, as FIN-NET. FIN-NET is a network of national organizations responsible for settling consumers' complaints in the area of financial services out of court. The network covers the countries of the European Economic Area8 (the European Union, Iceland, Liechtenstein and Norway). As good example of instrument in consumer tool-kit, FIN-NET was set up by the European Commission in 2001 to promote cooperation among national ombudsmen in financial services provide consumers with easy access to alternative dispute resolution (ADR) procedures in cross-border disputes about provision of financial services.

On 11 June 2013, European Commission adopted a Recommendation 9 on common principles for injunctive and compensatory collective redress mechanisms in the Member States concerning violations of rights granted under Union Law. The purpose of this Recommendation is "to facilitate access to justice, stop illegal practices and enable injured parties to obtain compensation in mass harm situations caused by violations of rights granted under Union law, while ensuring appropriate procedural safeguards to avoid abusive litigation". The Recommendation is a proposed framework, is not mandatory and many aspects remained subject to internal national rules for each of Member States. Also, European Commission has published on 26th January 2018 a report10 regarding the progress made by Member States on the implementation of collective redress measures following the Commission's 2013 Recommendation11.

The Commission's 2013/396/EU Recommendation stresses that all Member States should have collective redress mechanisms at national level, both injunctive and

[8] In Romania, Center of Alternative Solution of litigations in Banking System (CSALB) was constituted according the Government Ordinance no. 38/2015 with the purpose of organizing and managing the alternative solution of litigation in banking sector, respectively between the consumers and credit institutions. *Since September 2017 the Ministry of Economy has the responsibility to analyze the requests of bodies wishing to be alternative solution entities litigation, to ensure that they comply with the legal provisions and to notify the list entities admitted to the European Commission.* This is the first step of including the Alternative Dispute Resolution Center for Banking (CSALB) in the European Alternative Dispute Resolution Platform, FIN-NET.

[9] Commission Recommendation of 11 June 2013 on common principles for injunctive and compensatory collective redress mechanisms in the Member States concerning violations of rights granted under Union law (2013/396/EU) (OJ L 201 of 26.7.2013)

[10] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2018:40:FIN

[11] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOL_2013_201_R_NS0013

compensatory, available in all cases where rights granted under Union law are, or have been, violated to the detriment of more than one person.

Regarding collective out-of-court dispute resolution, the 2013/396/EU Recommendation requests Member States to encourage parties to settle their disputes consensually or out-of-court, before or during the litigation and to make collective out-of-court dispute resolution mechanisms available alongside or as a voluntary element of judicial collective redress. Also, suggests that limitation periods applicable to the claims should be suspended during the alternative dispute resolution procedure. Regarding the binding outcome of a collective settlement, the Commission proposes it should be controlled by a court (paragraphs 25 to 28 of the Commission Recommendation, Collective alternative dispute resolution and settlements). Recommendation also provides that the use of collective out-of-court dispute resolution should depend on the express consent of the parties involved, whereas in relation to individual claims it may be mandatory.

The advantages of introducing such schemes of collective alternative dispute resolution and settlements in collective redress mechanisms are the potential positive effects on the length of the proceedings, lowering the costs for parties and for judicial systems, and I foresee them as being an efficient way of dealing with mass harm situations. Using ADR procedures does not prevent parties from exercising their right of access to the judicial system in case does not settle the problem by out-of-court resolution. At the last resort, the only truly convincing incentive for traders to respond seriously and in good faith to collective redress ADR is the final threat of collective redress.

As we see, in fact these two solutions – alternative dispute resolution and collective redress – have become recently closely connected, promoted politically and put in practice.

The report shows that the availability of collective redress mechanisms as well as the implementation of safeguards against the potential abuse of such mechanisms is still not consistent across the EU. „Collective redress in the form of injunctive relief exists in all Member States with regard to consumer cases falling within the scope of the Injunctions Directive[12]" (…) Compensatory collective redress is available in 19 Member States (AT, BE, BG, DE, DK, FI, FR, EL, HU, IT, LT, MT, NL, PL, PT, RO, ES, SE, UK) but in over half of them it is limited to specific sectors, mainly to consumer claims." The scope of the Injunctions Directive covers infringements of EU consumer laws as enumerated in its Annex I.

But, also the report reveals that "among the 19 Member States that have compensatory relief schemes, 11 have introduced specific provisions on collective out-of-court dispute resolution mechanisms (BE, BG, DK, FR, DE, IT, LT, NL, PL, PT, UK). This list includes the three Member States that have adopted new legislation after the adoption of the Recommendation (BE, FR and LT) as well as the UK which introduced a specific provision on out-of-court dispute resolution in the competition mechanism. In its legislative proposal, SI is largely following the Recommendation. The remaining 8 Member States that have collective redress schemes apply general provisions on out-of-court dispute resolution to such situations, for instance as implemented in the national legislation pursuant to Directive 2008/52/EC.

Regarding *cross-border cases*, the Recommendation requires Member States to not prevent, through national rules on admissibility or standing, participation of foreign groups of claimants or foreign representative entities in a single collective action before their

[12] Directive 2009/22/EC of the European Parliament and of the Council of 23 April 2009 on injunctions for the protection of consumers' interests

courts. In present, in cross border situations, consumers have to act individually to obtain compensation. But, European Court of Justice, in the recent judgment in Case C-498/16 Maximilian Schrems v Facebook Ireland Limited, stated that European consumers cannot group their claims and go to one single court in their home country collectively when faced with the same misconduct and resulting damages by a company.

As still are a large number of European consumers which are deprived from using a collective redress tool, as several Member States have not introduced collective redress mechanisms in their national system, the ruling issued by the European Court of Justice has limited consumer options for better access to justice in mass harm cases. A great divergence between the Member States persists in terms of the availability and the nature of collective redress mechanisms,

Just few EU countries have introduced or amended legislation in this area following the European Commission's recommendation, and 9 countries still do not provide any possibility for consumers to claim compensation collectively.

For example, the Romanian procedural law does not provide expressly for a mechanism for class action or for collective redress and Romanian law does not offer special proceedings for complex class action litigations. The Civil procedure code only provides the legal possibility for claims between different Parties to be united and the fact that the Romanian procedural law allows multiple claimants, it contains no actual legal provisions implementing the Commission Recommendation of 11 June 2013 on common principles for injunctive and compensatory collective redress mechanisms in the Member States concerning violations of rights granted under Union Law (2013/396/EU).

The consumers that suffered damages due to the inclusion of unfair terms in their respective agreements concluded with professionals may claim damages from the professional.

The Government Ordinance nr.21/1992 provides the possibility to establish Consumer Association defined by law as non-profit legal persons founded in the purpose of representing the rights and interests of their members or as well as the general interest.

On 31 May 2017, he Romanian government adopted Government Emergency Ordinance no. 39/2017 on damage claims related to cases of competition law infringements and amending the Competition law no. 21/1996, which transposes to Romanian law Directive 2014/104/EU of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union (the "Damages Directive"). The 39/2017 GEO establishes the right of any person that suffered harm caused following an infringement of competition law by an undertaking or association of undertakings to claim full compensation before the competent courts.

6. Toward a New Deal for Consumers

The proposal for the Directive (New Deal for Consumers Directive) allows "qualified entities", such as consumer organisations but also ad hoc bodies, to initiate actions on behalf of all consumers. These entities will have to satisfy minimum reputational criteria (they must be properly established, not for profit and have a legitimate interest in ensuring compliance with the relevant EU law). Compensatory collective redress actions will also be available. A very important feature of these actions is that, in order to protect the interests of consumers, the above-mentioned entities will be entitled to seek redress to seek redress, such as compensation, replacement or repair, on behalf of a group of consumers that have been harmed by an illegal commercial practice. A very challenging novelty is that if a prior administrative or court decision has assessed an infringement, it should be taken as incontestable evidence in any further redress action, not just in the same, but also in other Member States. This acceptance of court and administrative decisions should avoid legal uncertainty and unnecessary costs for all parties, including the ones involved in litigation. This new development could positively remodel the redress tools for consumers. Collective actions will be made possible in all EU countries. To ensure that it is different from US-style class actions, representative actions according to the New Deal for Consumers will not be open to law firms, but only to organisms such as consumer organisations that are non-profit and accomplish strict eligibility criteria, checked by a public authority[13].

7. Conclusions

At this moment, there are powerful consumer protection rules in place in European Union, but regarding public enforcement by way of ceasing infringements and imposing fines, does not in itself enable consumers to be compensated for damage suffered. Through injunctive actions, consumer organizations and/ or national authorities for consumer protection act in court to put an end to illegal practices. European consumers suffering from damage caused by the same trader should be able to coordinate their claims effectively and efficiently into one single action in all European Member States. The integration of European markets and the consequent increase in cross-border activities highlight the need for EU-wide, consistent, redress mechanisms, available in out-of- court, alternative dispute resolution system and also in judicial system. Because of the demand is for a binding instrument at Community level. A collective redress mechanism should be available to every European consumer, for both national and cross border cases, irrespective of the value of the claim. Without functioning collective redress procedures, consumers do not have chances to get remedies even in cases of evident infringements of their rights. The introduction both to judicial and out-of-court of more effective collective actions and collective redress mechanisms that should be common across the Union, while respecting the different legal traditions of the Member States, could yield benefits to consumers in countries where collective redress mechanisms have not been introduced yet, as well as to consumers in countries where collective redress mechanisms are already available.

It is possible that the existence of collective redress mechanisms at Community level to create a higher exposure to liability for a company, because other means of redress (such as individual court action) may be in practice unavailable to consumers due to the costs of litigation or other obstacles. Also, existing collective redress mechanisms, both out-of-court or by litigation, may decrease rather than increase the costs for traders, in case that a multitude of separate litigations, potentially in different courts, is replaced by one collective procedure. Therefore, a procedure is necessary to be available in all EU Member States, based on minimum requirements: an equilibrium between the rights of both parties and not making the system too complex and overburdened with procedural requirements

[13] https://ec.europa.eu/info/files/proposal-directive-representative-actions-protection-collective-interests-consumers_en

and rules. to address certain identified shortcomings of the Consumer Rights Directives could be beneficial by introducing EU-level rights to remedies (such as right to terminate the contract or to receive a refund of the price paid) for victims of unfair commercial practices, improving the awareness, enforcement of the rules and redress opportunities to make the best of the existing legislation.

As the Report on the implementation of collective redress mechanisms by Member States shows that the availability of collective redress mechanisms as well as the implementation of safeguards against the potential abuse of such mechanisms is still not consistent across the EU. Without simple, clear and performable collective redress mechanisms, the enforceability of consumer rights will not improve in the situation of the mass harm produced by the same trader across the EU. At the same time, this is a strong signal for other EU institutions that there should be no hesitation in encouragement a EU wide collective action mechanism that effectively compensates harmed consumers.

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TECHNOLOGICAL INNOVATION AND TOTAL FACTOR PRODUCTIVITY GROWTH OF RICE PRODUCTION IN BANGLADESH IN THE POST-LIBERALISATION ERA

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Abstract: *The objective of this study was to assess the impact of technological innovation on the total factor productivity (TFP) growth of rice in Bangladesh during the post liberalisation era. The study used data from secondary sources and estimated the Data Envelopment Analysis (DEA)-based Malmquist productivity index for assessing the TFP-growth. It also estimated the Cobb-Douglas (C-D) production function using Ordinary Least Square (OLS) regression method for assessing determinants of rice output. The study found that agricultural trade liberalisation positively influenced the TFP-growth of rice through technological innovation in the post-liberalisation era. The increase in the TFP-growth was driven by technological innovation – a cropping shift from local varieties to high yielding varieties (HYV) of rice and reallocation of resources in favour of the HYV-dominated Boro rice production. However, after the first decade the TFP-growth gradually slowed down, which was attributed to the technological contraction or non-improvement and negative productivity of labour. The study suggests that the government should formulate policies to increase investment in research and development for technological innovation, and in human resource development through training and agricultural extension services for the efficient use of inputs to improve TFP-growth in rice production in the future.*

Keywords: *Total factor productivity (TFP), Malmquist productivity index, rice production, post-liberalisation, Bangladesh*

JEL classification code: *C63, F14, O47*

1. Introduction

Bangladesh went through a series of deregulation and agricultural trade liberalisation measures in the late 1980s and early 1990s with a view to increasing productivity in agriculture and achieving self-sufficiency in food-grain production. Major reforms in agricultural policy included liberalisation of input markets, shrinking the role of government agencies in the distribution of inputs, substantial reduction and rationalisation of tariffs, removal of quantitative restrictions, moving from a multiple to a unified exchange rate, and shifting from a fixed to a flexible exchange rate system (N. Ahmed, Bakht, Dorosh, & Shahabuddin, 2007, p. 9; S. Ahmed & Sattar, 2004, pp. 11, 12; Hoque & Yusop, 2010, p. 39; M. I. Hossain & Verbeke, 2010, p. 78; Islam & Habib, 2007, p. 4; Moazzem, Ahmed, Manzur, & Chowdhury, 2012, p. 9; Salim & Hossain, 2006, p. 2569). Agricultural trade liberalisation generated significant impacts on major structural reforms and technological innovation in rice production, enabling the country to achieve self-sufficiency in food-grain production in the early 1990s (S. Ahmed & Sattar, 2004, p. 19; Faroque, Kashem, & Bilkis, 2013, p. 2; Islam & Habib, 2007, p. 4; Klytchnikova & Diop, 2006, p. 3). Although other factors might also have affected the growth in output, agricultural trade liberalisation was the most important policy reform because of households' critical dependence on rice in terms of both income and consumption.

In Bangladesh, amongst agricultural products, rice is dominant in terms of volume of production and cultivated areas. Therefore, farmers use the main proportion of agricultural inputs such as fertilisers, pesticides, irrigation, and seeds for rice cultivation (Anderson, 2004, p. 1; Klytchnikova & Diop, 2006, p. 5; Ministry of Agriculture, 2007; OECD, 2010, p. 11). Rice captured the largest share of the agricultural sector, accounting for 75 percent of the total crop production value, 63 percent of total crop sales, and 75 percent of total cultivated area of the country in 2005 (Klytchnikova & Diop, 2006, p. 13; Ministry of Agriculture, 2007). In addition, rice is the staple food in the economy. Agricultural trade liberalisation influenced the volume of rice production significantly through a technological transformation (combination of irrigation, fertilisers, and HYV seeds). The study assumed rice as the representative of agriculture, thereby, considering analysis of the impact of agricultural trade liberalisation on productivity of rice.

Bangladesh was a large country in terms of the size of its population (164 million) with a very high density – 1246 people per sq km in 2010. However, it was a very small economy in terms of gross domestic product (GDP) (89.38 billion US dollars) and gross national income (GNI) per capita (590 US dollars) in the same year (Ministry of Finance, 2012; World Bank, 2011a, 2011b). Agriculture played an important role in supplying food as well as in maintaining food security of this very large and fast-growing population. The food security and self-sufficiency in food grain production of the economy depends mainly on how agricultural trade liberalisation impacted productivity of rice in the post-liberalisation era and how farmers would response to rice production in the future. Therefore, the main objective of this study is to examine the impact of technological innovation on the TFP growth of rice in the post-liberalisation era with a view to suggesting a policy framework for the government to cope with the food security and food production issues in the future.

The following sections include agricultural trade liberalisation scenarios in Bangladesh, a literature review, a methodology and research design, discussion and analysis of results, and conclusions.

2. Agricultural Trade Liberalisation Scenarios in Bangladesh

Like many other developing countries in the world, Bangladesh had pursued inward-looking policies and strategies for trade and development since its independence in 1971. These policies involved high government interventions in almost all economic activities, including agriculture (N. Ahmed, et al., 2007, pp. 2, 7; Draper & Sally, 2005, p. 3; Hoque & Yusop, 2010, p. 1; Rahman, 2008, p. 5). Bangladesh encouraged cooperative farming with a view to developing a socialist system of agriculture during the 1970s. The government controlled the procurement and distribution of seeds, fertilisers, pesticides, irrigation equipment and all other agricultural inputs (N. Ahmed, et al., 2007, pp. 2, 7; S. Ahmed & Sattar, 2004, p. 11; Salim & Hossain, 2006, p. 2568).

The government adopted import substitution policies with restrictions on imports in order to protect and support domestic production. It controlled the foreign trade and exchange rate system for making interventions effective (S. Ahmed & Sattar, 2004, p. 11; Krueger, 2010, p. 2; Nahar & Siriwardana, 2009, p. 327; Salim & Hossain, 2006, p. 2568). A series of measures including quantitative restrictions, highly differentiated tariff rates (ranging from 0 to 400 percent), huge production subsidies, and overvalued exchange rates were put in place to protect domestic production from world competition (N. Ahmed, et al., 2007, p. 7; S. Ahmed & Sattar, 2004, p. 11; Nahar & Siriwardana, 2009, p. 327; Salim & Hossain, 2006, p. 2568).

The government reinforced this protective environment with domestic market policy interventions in the form of credit ceilings, price controls, and arbitrary licensing such as import licences. These licences were granted only when there was no domestic source of supply available (N. Ahmed, et al., 2007, p. 19; Islam & Habib, 2007, pp. 10, 14; Krueger, 2010, p. 2; Salim & Hossain, 2006, p. 2568). Moreover, traditionally, the Bangladesh Agricultural Development Corporation (BADC) – had the sole authority and responsibility for procurement and distribution of agricultural inputs including fertilisers, irrigation equipment, pesticides and seeds (N. Ahmed, et al., 2007, pp. 19, 21; Islam & Habib, 2007, pp. 10, 14; Rahman, 2008, p. 13; Salim & Hossain, 2006, p. 2568).

However, these inward-oriented trade policies were not successful in terms of trade expansion or import substitution. These policies did not result in a sustained increase in productivity. Rather, the gap between demand for and supply of agricultural goods widened over the years (N. Ahmed, et al., 2007, p. 7; Hoque & Yusop, 2010, p. 39; Salim & Hossain, 2006, p. 2568). With a growing dissatisfaction regarding inward-looking trade and development policies, the sustainability of government interventions towards long-term food-grain availability was questioned due to the increased inefficiency and corruption in the public management system and the heavy budgetary burden imposed by these operations (N. Ahmed, et al., 2007, pp. 6, 7; Dorosh & Shahabuddin, 2002, p. 38; Hoque & Yusop, 2010, p. 39; Krueger, 2010, p. 5; Salim & Hossain, 2006, p. 2569).

Realising such inefficiencies as well as constant pressures from the donor countries and international development agencies such as the World Bank and the IMF, the government started to pursue a policy-shift from state intervention to more market-oriented policies in the mid 1980s with a view to achieving high economic growth and reducing poverty (N. Ahmed, et al., 2007, p. 9; Hoque & Yusop, 2010, p. 39; M. I. Hossain & Verbeke, 2010, p. 78; Islam & Habib, 2007, p. 3; Nahar & Siriwardana, 2009, p. 327; Rahman, 2008, p. 11; Salim & Hossain, 2006, pp. 2567, 2569). Deregulation and agricultural trade liberalisation generated a momentum that began in the late 1980s and peaked in the early 1990s.

Similarly, the government pursued a wide range of policy reforms to liberalise agricultural input markets including privatisation of the distribution system of key agricultural inputs, initiatives for deregulation measures to improve the investment climate for private enterprises, gradual elimination of subsidies on fertilisers and small irrigation equipment, and improving the maintenance of agricultural equipment through encouraging participation of the private sector (M. U. Ahmed, 2004, pp. 11, 12; N. Ahmed, et al., 2007, p. 9; Klytchnikova & Diop, 2006, p. 3; Salim & Hossain, 2006, p. 2569).

As a consequence of these reforms, the fertiliser trade was almost entirely handled by the private sector in 2005 (N. Ahmed, et al., 2007, pp. 19, 20; S. Ahmed & Sattar, 2004, pp. 13, 19; Klytchnikova & Diop, 2006, p. 3; Salim & Hossain, 2006, p. 2569). Further policy reforms included the rationalisation or elimination of import duties on agricultural inputs and spare parts, elimination of the government monopoly in fertiliser imports, and abolition of standardisation requirements (N. Ahmed, et al., 2007, pp. 19, 20; S. Ahmed & Sattar, 2004, pp. 13, 19; Klytchnikova & Diop, 2006, p. 3; Salim & Hossain, 2006, p. 2569).

There were encouraging responses to these liberalisation and reform initiatives from market forces. Therefore, the private sector participation in the input market rose sharply. Irrigation equipment became cheaper and farmers had easy access to the equipment. Different types of high yielding variety (HYV) seeds were available to farmers, thereby promoting both extensive and intensive cultivation by increasing the irrigated area and use of fertilisers (Klytchnikova & Diop, 2006, p. 3; Salim & Hossain, 2006, p. 2569).

Consequently, agricultural trade liberalisation generated significant impacts on economic growth through productivity improvement in the agricultural sector. It contributed to technological innovation in agriculture, leading to productivity improvement of agricultural inputs (S. Ahmed & Sattar, 2004, p. 19; Islam & Habib, 2007, p. 4; Klytchnikova & Diop, 2006, p. 3). The reform measures – including liberalisation of the input markets for fertilisers, pesticides, and irrigation equipment and adoption of high yielding variety seeds for rice production – led to major structural reforms and technological transformation, resulting in a significant increase in productivity and growth in the agricultural sector. Technological changes in agricultural production enabled the country to achieve self-sufficiency in food grain production in the early 1990s (S. Ahmed & Sattar, 2004, p. 19; Islam & Habib, 2007, p. 4; Klytchnikova & Diop, 2006, p. 3). The rising volume of rice production was accompanied by a decline in rice prices during 1990-2009. Moreover, because of significant structural transformation and technological changes, productivity of this sector was at its highest level (BBS, 2009, p. 3; Klytchnikova & Diop, 2006, p. 2; Ministry of Finance, 2010, p. 84).

These structural transformations reflected the government’s efforts to open the economy, liberalise agricultural trade and reform domestic markets in the 1980s and 1990s (S. Ahmed & Sattar, 2004, p. 12; Klytchnikova & Diop, 2006, p. 2). They enabled the economy to achieve a significant growth in the 1990s – increase in real GDP by an average of 4.2 percent per year and significant increases in agricultural production (Klytchnikova & Diop, 2006, p. 2; Salim & Hossain, 2006, p. 2570).

3. Literature Review

Agricultural trade liberalisation in Bangladesh refers to reducing trade barriers that have been created over a number of years. These barriers are created to protect domestic agricultural production from competition of foreign producers (Agbeyegbe, Stotsky, & WoldeMariam, 2006, p. 261; Duncan & Quang, 2003, p. 15; Feenstra & Taylor, 2008, p. 272; Krueger, 2009, p. 37; Krugman & Obstfeld, 2006, p. 223; Panagariya, 2009, p. 557; Turner, Nguyen, & Bird, 2008, p. 15). These barriers include a complex and opaque assembly of instruments and regulations including various trade controls (such as tariffs, variable levies, import and export subsidies, quotas and other non-tariff barriers), price support measures, income transfers, production subsidies, investment grants etc. (Eicher, Mutti, & Turnovsky, 2009, pp. 144, 145; Feenstra & Taylor, 2008, p. 272; Husted & Melvin, 2007, p. 148; Krugman & Obstfeld, 2006, p. 186). Trade liberalisation has gained popularity since David Ricardo's analysis of comparative advantage which explains how trade will benefit economies with differences in opportunity costs of production (Amoroso, Chiquiar, & Ramos-Francia, 2011, p. 1; Rahman, 2008, p. 1; Whaples, 2006, p. 1; Zhang, 2008, p. 25).

As per arguments for trade liberalisation, agricultural trade liberalisation is likely to direct scarce resources into areas of Bangladesh's comparative advantage, promote specialisation resulting in higher productivity and growth, accelerate investment by allowing access to bigger markets and permit economies of scale, and encourage imports of previously unavailable or scarce capital goods and intermediate inputs for agriculture (S. Ahmed & Sattar, 2004, p. 1; McCulloch, Winters, & Cirera, 2003, pp. 15, 16; Montalbano, 2011, p. 1; Stone & Shepherd, 2011, p. 5; Zhang, 2008, p. 175). Liberalisation of import markets for fertilisers, pesticides and irrigation equipment might have facilitated farmers' access to the improved production technology, and enabled Bangladesh's agriculture to reallocate resources for specialisation in efficient rice crop cultivation (S. Ahmed & Sattar, 2004, p. 1; McCulloch, et al., 2003, pp. 15, 16; Montalbano, 2011, p. 1; Stone & Shepherd, 2011, p. 5; Zhang, 2008, p. 175).

Advocates of free trade argue that agricultural trade liberalisation would produce a knowledge spill-over effect through technological innovation that is embodied in imported machinery, leading to higher growth in Bangladesh's agriculture. This growth would enhance returns to the economy's relatively abundant factor of production – the unskilled labour – by raising real wages for them, thereby contributing to an improvement in income distribution (S. Ahmed & Sattar, 2004, p. 2; Gabre-Madhin, Barrett, & Dorosh, 2002, p. 2; Islam & Habib, 2007, p. 4; Klytchnikova & Diop, 2006, p. 6; Lee & Vivarelli, 2006, p. 7).

In Bangladesh, amongst agricultural products, rice is dominant in terms of staple food, volume of production and cultivated areas. Therefore, farmers use the main proportion of agricultural inputs such as fertilisers, pesticides, irrigation, and seeds for rice cultivation. From the theoretical point of view, agricultural trade liberalisation may affect productivity of rice farmers through technological transformation.

Since the 1980s, the re-emergence of the neo-classical orthodoxy as an important development paradigm, Bangladesh adopted agricultural trade liberalisation and market reform programmes (Gingrich & Garber, 2010, p. 2; Meijerink & Roza, 2007, p. 6; Meschi & Vivarelli, 2009, p. 287; Rahman, 2008, p. 11; Salim & Hossain, 2006, p. 2567). This paradigm is based on the argument and belief that agricultural trade liberalisation contributes to growth through facilitating technological innovation and re-allocation of productive resources (R. Chang, Kaltani, & Loayza, 2005, p. 2; McCulloch, et al., 2003, pp. 15, 16; Montalbano, 2011, p. 1; Stiglitz, 2003, p. 59; Stone & Shepherd, 2011, p. 5; Zhang, 2008, p. 175). There are arguments that agricultural trade liberalisation contributes to technological transformation and improves productivity of agricultural inputs allowing competition and efficient factor-allocation, leading to higher economic growth (Henry, Kneller, & Milner, 2009, p. 237; McCulloch, et al., 2003, p. 25; San Vicente Portes, 2009, pp. 944, 945; Stiglitz, 2003, p. 59; Stone & Shepherd, 2011, p. 5). The technological transformation is due to improved access to imported inputs, machinery and knowledge, leading to an increase in productivity (Foster, 2008, p. 545; Henry, et al., 2009, p. 237; Lipton, 2006, p. 60; McCulloch, et al., 2003, p. 25; Meijerink & Roza, 2007, p. 10). These arguments further suggest that the agricultural input market becomes more competitive through diffusion of modern production technology and knowledge in agriculture as a result of agricultural trade policy reforms (Foster, 2008, p. 545; Henry, et al., 2009, p. 237; Lipton, 2006, p. 60; McCulloch, et al., 2003, p. 25; Thirtle, Irz, Lin, McKenzie-Hill, & Wiggins, 2001, p. 4).

The achievement of significant growth in agriculture, particularly in rice production, induced by technological innovation was demonstrated in many Asian countries through the green revolution since the 1960s that spread rapidly as a demonstration effect throughout the region in the 1970s and 1980s, especially in densely populated regions (Adeoti & Sinh, 2009, p. 7; Barichello, 2004, pp. 2, 6; Byerlee, Diao, & Jackson, 2005, p. 1; Meijerink & Roza, 2007, p. 2). It is argued that the success of East Asian countries such as Japan, South Korea and China in rice production was generated by technological breakthrough in the form of high-yielding varieties of rice in association with farmers' access to fertilisers and irrigation, which provided a significant improvement in productivity growth (Adeoti & Sinh, 2009, pp. 6, 7; Byerlee, et al., 2005, p. 9; IFAD, 2002, p. 63). The East Asian success was a source of inspiration for many developing countries, including Bangladesh, to liberalise input sectors. This initiative was based on the objective to improve productivity of rice through technological innovation. Redistribution of resources via relatively efficient public school systems played an important role in technological transformation. East and Southeast Asian countries generated more competent governments than in South Asia and sub-Saharan Africa. In particular, they achieved much higher literacy rates among rural populations, and hence were able to profit from modern agricultural technologies to a much greater extent than South Asian countries.

Many studies attempted to shed light on productivity of rice in Bangladesh. Some of these major studies on this effect include: Rice Price Stabilization on Bangladesh: An Analysis of Policy Options (Dorosh & Shahabuddin, 2002); Trade Liberalisation and the Crop Sector in Bangladesh (M Hossain & Deb, 2003); Poverty Alleviation Through Agriculture and Rural Development in Bangladesh (Mahabub Hossain, 2004); Market Deregulation, Trade Liberalisation and Productive Efficiency in Bangladesh Agriculture: An Empirical Analysis (Salim & Hossain, 2006); Trade Reforms, Farm Productivity, and Poverty in Bangladesh (Klytchnikova & Diop, 2006); Impact of Shallow Tube-wells and Boro Rice on Food Security in Bangladesh (Mahabub Hossain, 2009); Evaluation of Rice Markets Integration in Bangladesh (M. I. Hossain & Verbeke, 2010); Welfare Impact of Policy Interventions in the Foodgrain Markets in Bangladesh (Alam, Buysse, Begum, Wailes, & Van Huylenbroeck, 2011); Factors Influencing Adoption, Productivity and Efficiency of Hybrid Rice in Bangladesh (Azad & Rahman, 2017); Financial Profitability and Resource Use Efficiency of Boro Rice Cultivation in Some Selected Area of Bangladesh (Sujan, Islam, Azad, & Rayh, 2017); and Government Input Support on Aus Rice Production in Bangladesh: Impact on Farmers' Food Security and Poverty Situation (Uddin & Dhar, 2018). However, these studies did not attempt to assess the TFP-growth in rice production in the post-liberalisation era, which is the main focus of this study.

4. Methodology and Research Design

The study used annual time series data from secondary sources. The main source was Handbook of Agricultural Statistics, December 2007 (Ministry Agriculture, 2007).

Other sources include BBS (2007) and Bangladesh Economic Review (Ministry of Finance, 2009-2015).

The study measured total factor productivity (TFP)-growth of rice. TFP-growth shows the relationship between the growth of output and the growth of input with the influence of technology and technical efficiency. It is generally calculated as a residual (Englander, 1988, p. 6; Hisali & Yawe, 2011, p. 14). Solow (1957) introduced the measurement of productivity growth and technical progress which was associated with a production function/cost function/profit function.

For the TFP-growth measurement, economists developed many techniques such as index number approaches including Malmquist productivity index (Caves, Christensen, & Diewert, 1982, p. 1394; Färe & Grosskopf, 1992, p. 158), Solow's residual (Raa & Shestwova, 2006, p. 3; Solow, 1957, p. 312), Törnqvist productivity index (Caves, et al., 1982, p. 1394) , and Fisher ideal index (Färe & Grosskopf, 1992, p. 158); stochastic production frontier estimation techniques (Sharma, Sylwester, & Margono, 2007, p. 218); Monte Carlo simulation techniques (Slade, 1986, p. 76); translog production function (T. Chang & Hu, 2010, p. 3263); growth accounting matrix (Griliches, 1996, p. 1324); and Durenberger productivity indicator (Barros, Guironnet, & Peypoch, 2011, p. 642).

Both mathematical and econometric models are used to measure TFP-growth. Using mathematical models, there are four main approaches to the measurement of TFP-growth namely: (a) Solow's residual analysis, (b) the index number approach, (c) input-output analysis, and (d) Data Envelopment Analysis (DEA) (Raa & Shestwova, 2006, p. 1).

The Malmquist productivity index is a widely-used index number approach because it is simple to measure, easy to understand, and produces reliable results. It provides high accuracy, has minimum restrictions for model specification, and is easy to decompose into two major components: technical efficiency change, and technological change – the main sources of TFP-growth. Similarly, the DEA method is a commonly used technique for the measurement of TFP-growth. The main advantage of using the DEA method is that it avoids model misspecification (Cook & Zhu, 2005, p. 1). This is a scale-neutral method using the measurement of inputs and outputs based on linear programming techniques. (T. Chang & Hu, 2010, p. 3263).

This study used the DEA method to calculate the Malmquist productivity index (TFP) with a view to identifying sources of productivity growth and efficiency in rice production. The advantage of the DEA-based Malmquist productivity index is that it calculates the efficiency of factors or inputs. The output-oriented factor-efficiency measures the maximum output from a given input. Similarly, input-oriented efficiency measures the use of minimum input to produce a given output. It is related to returns to scale such as increasing, constant, and decreasing return to scale.

This study adopted the pioneering works of Färe and Grosskopf (1992), and Färe *et al.* (1994) as below:

The production possibility set-

$$S^t = \{(x^t, y^t): x^t \ can\ produce\ y^t\},$$

where time period t = 1, 2 ...T. The technology is assumed to have standard properties such as convexity. The production (output) sets are defined in terms of S^tas:

$$P_t(x) = \{y^t: (x^t, y^t) \in S^t\}.$$

The successive production sets are essentially independent from each other. However, there is a certain form of dependence between sequential production sets across time. This dependence is based on the assumption that production units can always produce the same amount of outputs given the same amount of inputs what they have done before in the production processes (Färe & Grosskopf, 1992, p. 159; Färe, et al., 1994, p. 68; Yuk-Shing, 1998, p. 7). Thus, the construction of the latest set requires information on the previous period's inputs and outputs for measuring productivity performance.

In order to calculate the Malmquist productivity index using sequential DEA approach, the output distance function for each time period, *t*, can be written as follows:

$$d^t(x^t, y^t) = \min\left\{\lambda: \left({}^{y^t}/_{\lambda}\right) \in p_t^{seq}(x^t)\right\};$$

where superscript p_t^{seq} denotes sequential output set. When λ is minimised, then y^t/λ is maximised. Thus, this distance function measures the maximum possible output with a given input vector x^t and technology under period t. Therefore, the Malmquist productivity index can be defined as follows (Färe & Grosskopf, 1992, p. 159; Färe, et al., 1994, p. 70):

$$M(x^t, y^t, x^{t+1}, y^{t+1}) = \frac{d^t(x^t, y^t)}{d^{t+1}(x^{t+1}, y^{t+1})} \times \left[\frac{d^{t+1}(x^t, y^t)}{d^t(x^t, y^t)} \times \frac{d^t(x^{t+1}, y^{t+1})}{d^{t+1}(x^{t+1}, y^{t+1}}\right]^{1/2};$$

where, in the right hand side of the equation, the ratio outside the square brackets measures the change in technical efficiency between two periods (years), *t* and *t+1*. The geometric mean of the two ratios inside the square brackets captures the shift in technology between the two periods. In order to calculate output-oriented Malmquist productivity index under the assumption of constant return to scale (CRS) technology four distance functions are required to be calculated as follows:

$$\left[d_c^{t+i}(x_{\acute{k}}^{t+j}, y_{\acute{k}}^{t+j})\right]^{-1} = \max_{\theta, z_k^s} \theta^{\acute{k}},$$

subject to

$$-\theta^{\acute{k}} y_{\acute{k},m}^{t+j} + \sum_{s=1}^{t+i}\sum_{k=1}^{K} z_k^s\, y_{k,m}^s \geq 0, \quad m = 1, \dots\dots, M$$

$$x_{\acute{k},n}^{t+j} - \sum_{s=1}^{t+i}\sum_{k=1}^{K} z_k^s\, x_{k,n}^s \geq 0, \qquad n = 1, \dots\dots, N$$

$$z_k^s \geq 0, \qquad k = 1, \dots\dots, K, and\ s = 1, \dots\dots, T+i,$$

The symbol θ denotes a scalar of the proportional expansion in output for a given input vector and z_k^s is an intensity variable indicating at what intensity production unit k may be employed in production. The symbol M represents total output, implying a non-negative output constraint. The symbol N represents total input, implying a non-negative input constraint. The symbol K represents total number of farms and T represents total time periods, implying non-negative constraints of farms and time period. It is required to solve a linear programming problem to calculate each of the distance functions as follows:

$$\left[d_c^t(x_{\acute{k}}^t, y_{\acute{k}}^t)\right]^{-1} \qquad is\ calculated\ with\ (i,j) = (0,0);$$

$$\left[d_c^{t+1}(x_{\acute{k}}^{t+1}, y_{\acute{k}}^{t+1})\right]^{-1} is\ calculated\ with\ (i,j) = (1,1);$$

$$\left[d_c^t(x_k^{t+1}, y_k^{t+1})\right]^{-1} \quad is\ calculated\ with\ (i,j) = (0,1);$$

$$\left[d_c^{t+1}(x_k^t, y_k^t)\right]^{-1} \quad is\ calculated\ with\ (i,j) = (1,0);$$

where subscript c denotes the CRS benchmark technology. A short intuitive explanation on the Malmquist productivity index is included in Appendix A.

This study also estimated the Cobb-Douglas (C-D) production function to determine the returns to scale and the elasticity of output with a view to cross-checking the robustness of results of the DEA-based Malmquist productivity index. It has used a log-linear OLS regression model for the convenience of measuring the partial elasticity of output with respect to a particular input (labour or capital) (Greene, 2007, p. 890; Gujarati, 2006, p. 174; Maddala, 2008, p. 112). The C-D production function can be written as follows:

$$Y = AL^{\propto}K^{\beta};$$

where *Y* is total output, *L* is labour input, *K* is capital input, *A* is technology, and α and β are the partial elasticities of labour and capital respectively. These values are constant and are determined by available technology. Further, if:

$$(\alpha + \beta) \begin{cases} > 1: \text{increasing return to scale;} \\ = 1: \text{constant return to scale; and} \\ < 1: \text{decreasing return to scale} \end{cases}$$

The above equation can be re-written as follows:

$$Y = \beta_1 X_{2t}^{\beta_2} X_{3t}^{\beta_3}$$

This equation can be expressed as a log-transformation or log-linear regression model as follows:

$$LnY = Ln\beta_1 + \beta_2 LnX_{2t} + \beta_3 LnX_{3t} + u_t;$$

where u_t is the error term.

The study disaggregated capital input into irrigation, fertilisers, pesticides and seeds with a view to identifying their individual impact on rice output. It also included land in the model because land is an important factor of rice production. Therefore, the model can be re-written as follows:

$$LnY = Ln\beta_1 + \beta_2 LnX_{2t(land)} + \beta_3 LnX_{3t(labour)} + \beta_4 LnX_{4t(irrigation)} + \beta_5 LnX_{5t(fertilisers)} + \beta_6 LnX_{6t(pesticides)} + \beta_7 LnX_{7t(seeds)} + u_t;$$

The study used data from secondary sources for a period between 1986-87 and 2005-06 to achieve its objectives. The main source of secondary data includes the *Handbook of Agricultural Statistics 2007* (Ministry of Agriculture, 2007), and *Bangladesh Economic Review* 2008, 2009 and 2010 (Ministry of Finance, 2008, 2009, 2010). It also used data from various statistical yearbooks of Bangladesh Bureau of Statistics (BBS). These data were in both aggregated and disaggregated forms, such as total rice production (aggregated) and distribution of total rice production by three main rice crops – Aus, Amon, and Boro (disaggregated).

5. Result Discussion and Analysis

5.1. Descriptive Statistics of Data

The descriptive statistics represents the basic characteristics of data–whether the distribution of data (annual) is normal and symmetric or not. The descriptive statistics of input and output of rice– the mean, standard deviation, skewness and kurtosis–are presented in Table 1.

The values of standard deviations for all variables are large, suggesting that the data are dispersed away from the mean over a large range of values. The skewness values for variables irrigation, fertilisers and labour are negative, indicating that the distribution is left skewed or a large proportion of data are distributed on the right side of the mean with extreme values to the right, suggesting that the mean is smaller than the median. Conversely, these values for variables rice output, land and pesticides are positive, indicating a right skewed distribution of data, where the mean is greater than the median.

The kurtosis value for seeds is greater than 3, suggesting a leptokurtic distribution of data – sharper than a normal distribution, with values concentrated around the mean and thicker tails, indicating high probability for extreme values. The kurtosis values for all other variables are much smaller than 3, suggesting a platykurtic distribution of data – flatter than a normal distribution with a wider peak. In this case, the probability for extreme values is less than for a normal distribution and the values are widely spread around the mean as indicated earlier by high values of standard deviation for these variables.

Therefore, this study argues that data are not symmetric and not normally distributed around the mean, suggesting that a translog or log-linear model would be more effective to fit a regression line than a model without having a log transformation. The main advantage of log transform is to make a distribution more normal than the original distribution of data, while the ratio of each observation remains unchanged. Because a log-transformation reduces the effects of extreme values, thereby making the distribution of data more symmetric than the original data set.

Table 1: Descriptive statistics of input and output of rice production data: 1986-87 to 2014-15

Variables	Mean	Std. Deviation	Skewness	Kurtosis
Rice output (000 tonnes)	19634.650	3750.176	.617	-1.092
Land (000 hectare)	10378.221	280.558	.126	-1.058
Irrigation (000 hectare)	3047.779	714.937	-.029	-.811
Fertilisers (000 tonnes)	2670.200	705.520	-.339	-.792
Seeds (000 tonnes)	403.105	34.841	-1.978	3.495
Pesticides (000 tonnes)	10.737	5.223	.172	-1.332
Labour (000)	21772.538	2608.950	-1.019	-.237

Source: Authors' calculation using data from Table 1.03, 2.01, 4.01, 4.03, 4.08, 4.15, 5.05 and 7.03, (Ministry of Agriculture, 2007) and Statistical Year Book of Bangladesh (various years)

5.2. Total Factor Productivity Growth of Rice

Total factor productivity (TFP)-growth of rice measures the proportion of output, which is not explained by the amount of inputs used in rice production. Using the Data

Envelopment Analysis (DEA) method, the Malmquist productivity index is calculated to analyse the TFP-growth of rice in Bangladesh. The DEA-based Malmquist productivity index measures the changes in TFP-growth over time. It is decomposed into two main components – technical efficiency change (TE) and technological change (TC). The TFP-growth index represents the multiplicative impacts of these two components. Technical efficiency measures farmers' ability to produce the maximum output (rice) possible from a given set of inputs and production technology. On the other hand, technological change measures the frontier shift – the shift in production possibility frontier (PPF). It represents technological progress (outward shift of PPF) or contraction (inward shift of PPF). Thus, a TFP-growth level is determined by how efficiently and intensely the inputs are utilised in rice production as well as by the level of technological change. If the value of TFP-growth is greater than one then it represents progress in productivity and vice versa. Similarly, a unitary value of TFP-growth implies no change in productivity.

Bangladesh experienced a positive change in the TFP-growth of rice immediately after agricultural trade liberalisation as shown in Table 2. TFP-growth increased from 1986-87 through to 1998-99 then declined gradually. The value of TFP was greater than one over the period 1990-91 to 1998-99 suggesting that the TFP-growth of rice improved during this period, indicating an increasing return to scale in rice production. On the other hand, the value of TFP-growth was less than one for the period 1999-2000 to 2014-15, implying that there was a decline in productivity of rice during that period and suggesting a decreasing return to scale in rice production. The frontier shift or TC showed a trend similar to changes in TFP-growth – it started to increase immediately after liberalisation and slowed down after 1998-99. The value of TC was greater than one during 1988-89 to 1997-98 suggesting that Bangladesh experienced technological progress in rice production during this period. However, during the other periods – 1986-87 to 1988-89 and 1999-2000 to 2014-15 – the value of TC was less than one, indicating that there was a technological contraction or non-improvement during that period. Noticeably, the value of TE was close to one over two decades from 1986-97 to 2005-06, implying that there was little change in technical efficiency over that period. Over thirty years from 1986-87 to 2014-15 the mean value of TFP was 0.96 – close to one, implying that Bangladesh experienced an average increase in the TFP-growth of rice during that period on average. Similarly, the mean value of TC was 0.98 indicating that, on average, there was a technological progress, implying an outward shift of production possibility frontier during that period. The mean value of TE for that period was close to one (0.96), suggesting that there was a positive-but-insignificant technical efficiency change over that period. However, one of the shortcomings of the Malmquist index of TFP is that it cannot specify exactly how much (e.g. percent) the change was.

Table 2: Total factor productivity of rice in Bangladesh: 1986-87 to 2014-15

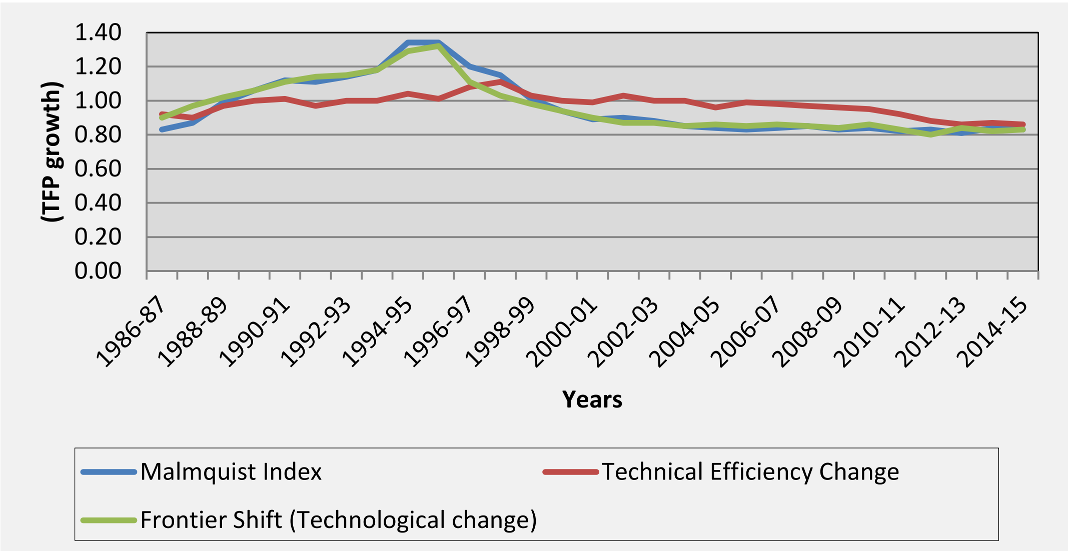
Year	Malmquist Index (Total Factor Productivity)	Technical Efficiency Change	Frontier Shift (Technological change)
1986-87	0.83	0.92	0.90
1987-88	0.87	0.90	0.97
1988-89	0.99	0.97	1.02
1989-90	1.06	1.00	1.06
1990-91	1.12	1.01	1.11
1991-92	1.11	0.97	1.14
1992-93	1.14	1.00	1.15
1993-94	1.18	1.00	1.18
1994-95	1.34	1.04	1.29
1995-96	1.34	1.01	1.32
1996-97	1.20	1.08	1.11
1997-98	1.15	1.11	1.03
1998-99	1.01	1.03	0.98
1999-00	0.94	1.00	0.94
2000-01	0.89	0.99	0.90
2001-02	0.90	1.03	0.87
2002-03	0.88	1.00	0.87
2003-04	0.85	1.00	0.85
2004-05	0.84	0.96	0.86
2005-06	0.83	0.99	0.85
2006-07	0.84	0.98	0.86
2007-08	0.85	0.97	0.85
2008-09	0.83	0.96	0.84
2009-10	0.84	0.95	0.86
2010-11	0.82	0.92	0.83
2011-12	0.83	0.88	0.80
2012-13	0.81	0.86	0.84
2013-14	0.84	0.87	0.82
2014-15	0.83	0.86	0.83
Mean	0.96	0.98	0.96

Note: The preceding year is used as the base year for TFP growth calculation

Source: Authors' calculation using data from Table 1.03, 2.01, 4.01, 4.03, 4.08, 4.15, 5.05 and 7.03, (Ministry of Agriculture, 2007) and Statistical Year Book of Bangladesh (various years)

The above analysis suggests that the progress in the TFP-growth of rice immediately after agricultural trade liberalisation was driven by technological progress not by technical efficiency in rice production. This argument is evident from Figure 1. TFP-growth increased along with TC during 1986-87 to 1995-96. However, during 1995-96 to 1998-99, TC declined more sharply than TFP-growth making a significant gap between TFP and TC and suggesting that TE influenced TFP-growth more than TC for this period. This argument is supported by a sharp rise of TE over that period. From 1998-99 through to 2014-15, both TFP-growth and TC were below TE and the gap between TFP and TC was minimal suggesting that technological change influenced TFP-growth of rice in this period. This argument was supported by the distribution of the average TFP by five-year intervals over twenty years as shown in Table 3.

Figure 1: Total Factor Productivity and its component: 1986-87 to 2014-15



Source: Authors' drawing using data from Table 2 of the above

From Table 3, it is clear that the highest value of the average TFP-growth (1.18) was associated with the period 1991-95. Similarly, the largest average TC value (1.17) was associated with the same period, whereas the average value of TE was one (1.00) during this period. This finding implies that the TFP-growth was mostly influenced by TC in this period. On the other hand, during 1996-2000 the growth in TFP was mostly weighted by the influence of TE, not by TC because the average value of TE (1.04) was greater than one but the average value of TC (0.96) was smaller than one. This analysis suggests that the TFP-growth of rice production was mostly influenced by technological change in the post-liberalisation period.

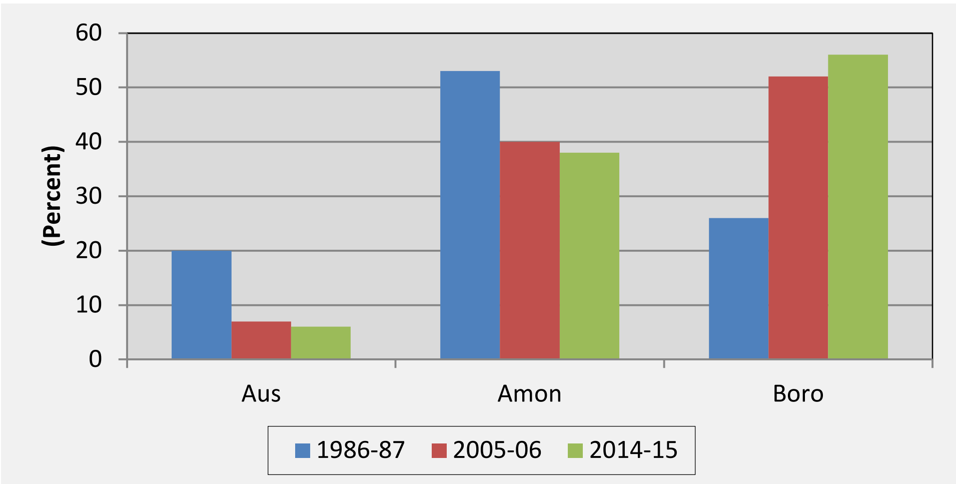
Table 3: Distribution of average TFP by five-year intervals: 1986-2015

Year	Total Factor Productivity (TFP)	Technical Efficiency (TE)	Technological Change (TC)
1986-90	0.94	0.95	0.99
1991-95	1.18	1.00	1.17
1996-00	1.13	1.05	1.04
2001-05	0.87	0.99	0.87
2006-10	0.84	0.97	0.85
2011-15	0.82	0.88	0.83

Source: Authors' calculation from Table 2 of the above

The change in the TFP-growth of rice might be attributed to the shift of rice cultivation from local varieties to HYV rice and from Aus and Amon to Boro cultivation as a result of the technological transformation in rice production. This situation is revealed in Figure 2. Boro rice captured the lager share and the shares of both Aus and Amon rice production gradually declined during 1986-87-2014-15.

Figure 2: Share of production by major rice crops: 1986-87-2014-15



Source: Authors' calculation from Table 2.01 and 1.03 (Ministry of Agriculture, 2007) and (Ministry of Finance, 2017)

This analysis suggests that the TFP of rice increased immediately after agricultural trade liberalisation due to adoption of new technology, namely fertilisers-irrigation-HYV rice. Amongst these three inputs, irrigation had the greatest influence on productivity of rice because it is the prime input that influenced reallocation of resources (land, labour etc.) in favour of Boro rice cultivation and increased cropping intensity in the early stage of post-liberalisation era.

This is an indication that TFP-growth of rice was driven by the Boro crop, which is dominated by HYV rice. Amongst the three rice crops (Aus, Amon and Boro), Boro is cultivated during the dry seasons (winter and spring), when water is available for irrigation. Farmers can control irrigation and apply fertilisers and pesticides on time, resulting in higher yields. Aus is cultivated during the dry season (summer) but water is not available for irrigation, resulting in lower yields. Conversely, Amon is cultivated during the wet (rainy) season, when farmers have little control over rainwater. Therefore, there are two main reasons for reallocation of land to Boro crop: (1) Boro is the most productive rice crop in the post-liberalisation era; and 2) the majority of farm households are subsistent and small farmers, who are poor and are much more interested in producing rice as a staple food than producing other food-grains and cash crops, leading to reallocation of resources in favour of the most productive Boro rice.

The significant increase in Boro rice production was possible because of the wider availability of small-scale imported irrigation equipment such as shallow tube-wells and low lift pumps as well as other inputs such as fertilisers and HYV seeds following agricultural trade liberalisation.

Although Bangladesh experienced a significant increase in TFP-growth in rice production immediately after agricultural trade liberalisation, this trend was sustained for only one decade and the impact of this technology on the productivity of rice gradually slowed down. This decline might be attributed to technological non-progress as technology gradually becomes obsolete after its adoption if innovation, and research and development (R&D) are not sufficient to replace the old technology, suggesting that technological innovation in rice production through R&D is required to increase total factor productivity growth of rice in future. This productivity growth in the post-liberalisation era is much attributed to the shift of cropping patterns in favour of more productive HYV rice and specially Boro crops. Amongst all inputs, HYV seeds and irrigation are dominant contributors to this growth and the increase in the volume of rice production over last two decades. The regression analysis presented in the following section reinforces this argument.

5.3. Input Oriented Regression Analysis

The study carried out a factor-oriented (input) regression analysis and estimated the Cobb-Douglas production function with a view to identifying the impact of individual inputs or factors on total rice production. The factors of production considered in these models were land, labour, irrigation, fertilisers, pesticides and seeds. However, some factors including land, pesticides and seeds were not statistically significant. Therefore, they were excluded from the model because including them does not significantly improve the model’s fit. The seeds factor was not statistically significant. The results are shown in Table 4.

The regression coefficient for irrigation was the largest contributor to rice production with a regression coefficient of 1.342 in the post-liberalisation period. The other two factors – labour and fertilisers – were statistically significant but both factors had negative regression coefficients of –0.336 and –0.643 respectively. This study suggests that there is an inverse relationship between total rice output and labour as well as between total rice output and fertilisers. This is because excess labour is employed in rice production in Bangladesh. The productivity of labour is negative. This correlation suggests that over time rice output is rising and the requirement of labour allocated to rice farming is falling as farmers adopt new technologies and shift to a more capital intensive production process and higher yielding rice. One reason for the persistence of excess labour in the agricultural sector is the weakness of the country’s public education sector, which limits severely the growth of non-agricultural employment. This model suggests that excess labour employed in rice production constitutes wastage of resources in the rural economy and that might be better used for other productive activities. Therefore, removal of excess labour from rice production would likely increase productivity of labour for rice output. Similarly, the negative impact of fertilisers on total rice production might be attributed to the inappropriate application of cheap fertilisers to rice cultivation in the post-liberalisation period.

Irrigation had a very large and positive regression coefficient (1.342), indicating that an increase in one unit of irrigation was likely to increase the total rice production by 1.342 units, suggesting that rice productivity was driven by irrigation-related crops (mainly HYV-Boro) in the post liberalisation era. This finding has significant implications that irrigation-oriented technology was dominant factor in determining the productivity of rice in the post-liberalisation period.

Table 4: Determinants of output by factors of production: 1986-87 to 2014-15

(**Dependent variable:** Logarithm of total rice production)

Independent variables	Regression coefficient	Correlation coefficient
Constant	10.08 (1.83)***	
Log of total land area	excluded, not significant	
Log of total irrigated area	1.34 (0.21)***	0.92
Log of total fertiliser use	-0.64 (0.23)*	0.83
Log of total pesticide use	excluded, not significant	
Log of total labour employed	-0.33 (0.01)**	-0.89
Log of total seeds use	excluded, not significant	
	R-square: 0.96 df1: 3, df2: 16 F: 128.570, P: .000	

Note: time series data used, number of observations are 20 (20 years' data between 1986-87 and 2005-06)

excluded variables are not statistically significant
figures in parentheses represent standard errors
*** significant at 1%, ** significant at 5% and * significant at 10% level

6. Conclusion

The above findings and analyses suggest that agricultural trade liberalisation positively influenced productivity of rice as a result of technological transformation in rice production. The economy experienced an increase in TFP-growth driven by technological change in the post-liberalisation era. The TFP-growth is a multiplicative impact of technical efficiency change and technological change generated from the efficient use of inputs and an outward shift in production possibility frontier respectively. The improvement in productivity of rice contributed to a higher volume of rice output. The increase in productivity and total output was driven by cropping shifts from local varieties to the HYV rice and reallocation of resources in favour of the HYV-dominated Boro rice in the post-liberalisation era. The use of irrigation, fertilisers, pesticides, and HYV seeds increased in the post-liberalisation era because of lower input prices, resulting from agricultural trade liberalisation.

The study found that the impact of technological change on the TFP-growth gradually slowed down after the first decade of high growth in productivity of rice. This slow-down in TFP-growth might be attributed to technological non-progress as technology gradually becomes obsolete after its adoption if innovation, and research and development (R&D) are not sufficient to replace the old technology. The study suggests that R&D development activities are required to strengthen technological innovation for improving technological change in rice production to achieve and sustain higher TFP-growth in the future. Similarly, there is a huge amount of excess labour employed in rice production. This excess labour may be reallocated to other sectors for increasing productivity of labour in rice output and will contribute to higher household income from economic activities other than rice production. The intensive and efficient use of factors is crucial for increasing technical efficiency in rice production that will contribute to the total factor productivity growth as well. Therefore, the study suggests that the government should formulate policies to increase investment in (1) research and development for technological innovation, and (2) in human resource development through training and extension services for efficient use of inputs to improve TFP-growth in rice production. This policy would enhance food production for a large population and ensure food security and macroeconomic price stability that might come from high food prices.

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ARTIFICIAL INTELLIGENCE (AI) - THE TECHNOLOGY THAT SHAPES THE WORLD

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Abstract: *The paper presents trends, analyzes and perceptions of Artificial Intelligence with pros and cons of its integration in all areas of socio-economic life. Artificial Intelligence (IA) is one of the most advanced technologies in the development of today's science, and for that, the big robotics companies are investing colossal amounts to further develop and integrate them into their products.. Economies around the world are still vulnerable to new shocks and are unprepared for the next wave of "automation and robotization," warned the World Economic Forum (WEF) in its latest Report on Artificial Intelligence and Robotics for 2017. Specialists expect robots endowed with AI will operate 85% of customer interactions by 2030. The WEF-based competitiveness index for the year 2017, based in Switzerland, takes into account various factors including the artificial intelligence that underpin the productivity and prosperity of countries, and it has revealed major differences between the world's economies. In turn, the UN warned that robots could destabilize the world: from the risk of mass unemployment to the use of autonomous robots by organizations or criminal states, research centers in robotics aim to identify possible threats. In a few decades now, robots and computers could surpass the thousands of years of evolution that generated our perception and intelligence.*

Keywords: *artificial intelligence (AI), technologies change, robotics, new economy*

JEL Classification: *O30, O31, O33*

1. Introduction

Artificial Intelligence (AI) is a field of study that includes many theories, methods and technologies. From the perspective of technology, Artificial Intelligence (AI) combines large amounts of fast processing data and intelligent algorithms, enabling programs to learn automatically from data models or features. The mechanism of artificial intelligence operation is based on the following processes:

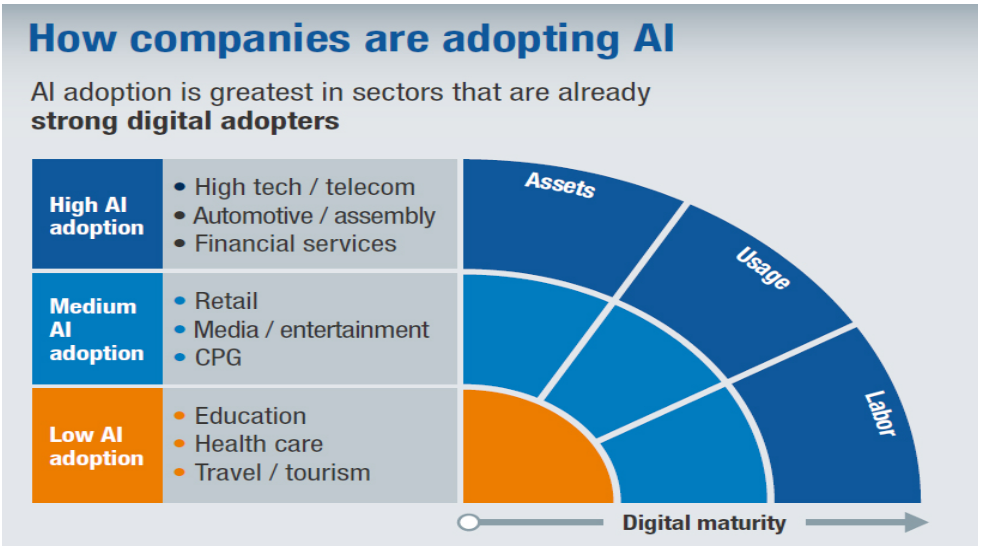
- Automatic learning that builds the analytical model through the automation process that uses specific methods: neural networks, statistics, research to find hidden information in the data without explicitly programming where to search or what processes to conclude.
- Learning based on the neural network made up of interconnected units (similar to neurons) processes information by reacting to external inputs that are subsequently transmitted to each unit. The process requires multiple data passages to find connections and get meaning from undefined data.
- Deep learning is based on huge neural networks with multiple processing units that provide computing power and special techniques for using complex models to analyze large amounts of data. Frequent applications include image recognition and speech recognition.
- Cognitive computation involves a human-machine interaction using artificial intelligence algorithm and human cognitive computation, the ultimate goal being that a machine simulates human processes through the ability to interpret images and speech
- Computer vision is based on model recognition and deep learning by artificial intelligence to recognize what is in an image or video. With this technique, machines can process, analyze and understand images, capture images or videos in real time, and interpret their surroundings.
- Natural language processing is the ability of computers to analyze, understand and generate human language, including speech that allows people to communicate with computers using normal, everyday language to perform their tasks.

2. The current situation

Many of our daily experiences and interactions involve machines or devices with AI. Technology is an integral part of our lives. For this reason, it is time to evaluate how we can better use machine strengths (while recognizing weaknesses) to enhance our ability to understand and improve the world around us.

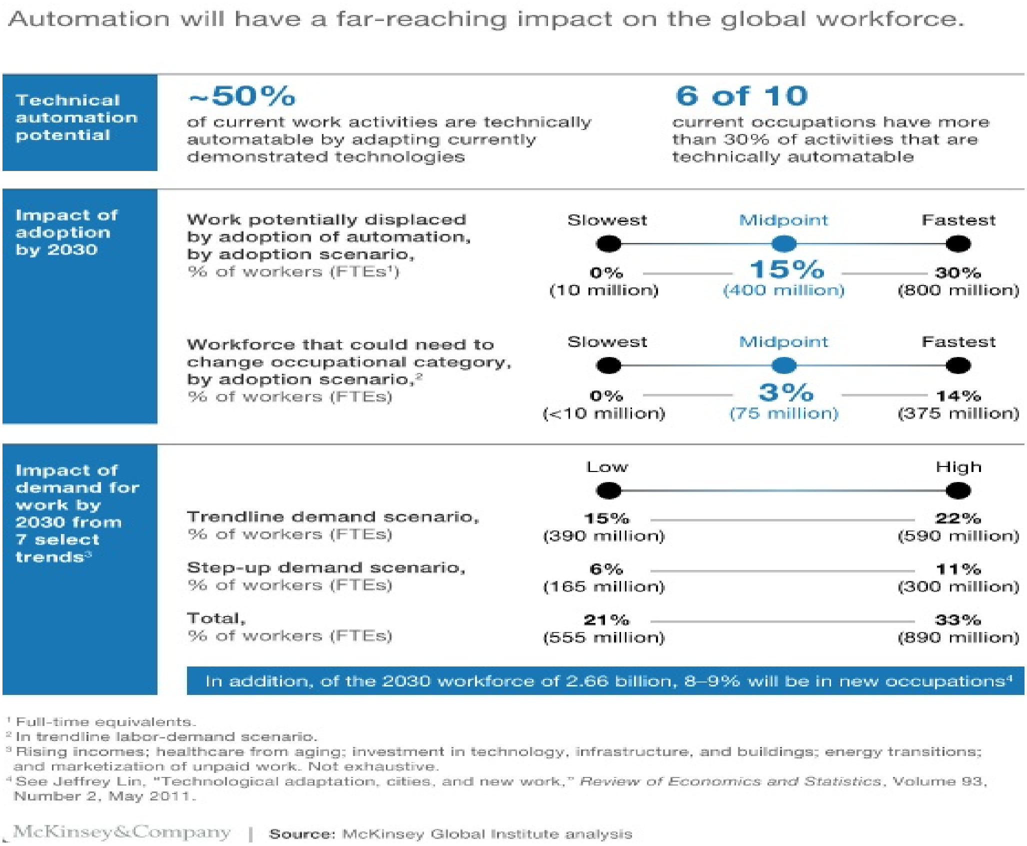
Advances in the robot learning process have allowed the creation of systems that can automate complex tasks through constant learning. We may be inclined to say that these computers are intelligent on the basis of the tasks they perform and how they interact with us while performing these tasks. Indeed, computers can learn, understand and make assessments about the world but based on the information we offer them.

The positive impact of AI on society motivates research in many areas, from economics and law to technical subjects such as verification, validity, security and control.



Source: McKinsey Institute

In the long term, as Stephen Hawking, Elon Musk, Steve Wozniak, or Bill Gates, have an important question about what will happen if the design of a performance AI will succeed, and a system with such AI will become better than humans at all cognitive tasks, knowing that designing intelligent AI systems is a cognitive process.



McKinsey Institute researchers say that such a system could suffer a recurrent self-improvement, triggering an explosion of intelligence that would leave much behind the human intellect. Inventing new revolutionary technologies, such super-intelligence could help us eradicate war, disease and poverty, so creating a powerful AI could be the greatest event in human history. Some experts have expressed concern, however, that it may be the last one if we do not learn to align the AI's goals with our goals before it becomes a super-intelligence.

3. Using artificial intelligence

3.1. Human cyborgization (Cyborgization)

Tom Gruber, one of the inventors of the Siri Voice Interface, used in the iPhone device system and the Mac OS operating system, believes that Artificial Intelligence (AI) can be used to increase human memory. At a conference held in 2017, Tom Gruber launched the following rhetorical questions and concluded: "What if you could remember any person you ever met? How do they pronounce their names? Their family details? Their favourite sports? The last conversation you had with them?

That's why using AI to catalogue our experiences and to enhance our memory is not just an idea, it's inevitable. „At Facebook's annual development conference, Mark Zuckerberg has shared a project that proposes building non-invasive sensors that will read brain activity. Sensors are designed to read the part of the brain that translates thoughts into speech to allow thought transcription.

Elon Musk, CEO of Tesla and SpaceX, has set up a new company called neural link to build a wireless technology for the brain-computer interface. Musk shared his idea of the technology he calls a neural lace at the Codode conference of Recode in 2016.

3.2. Car robots

Artificial Intelligence (AI) is also used to build autonomous driving systems. Google's smart car has driven 1.8 million miles and has been involved in 13 accidents - all caused by other cars. Publishing Inc. writes that autonomous cars are so safe that manual driving can become illegal in the future, which is bad news for professional drivers, but good news for us, the followers of the 1.3 million people who die in road accidents every year.

There has already been a lot of information on unmanned cars, and big companies, including Apple, have announced joining automotive developers. In Asia, Nissan and Toyota have already created autonomous vehicles that have been launched on public roads in Japan since 2013, and in Singapore the tests started in October 2015.

Germany, Sweden and the United Kingdom are the only countries that have reviewed their legislation and have allowed testing cars without a driver. At the CES 2016 Technology Festival, BMW introduced its concept of autonomous car, called "I Vision Future Interaction", but the company's representatives said its cars would not be "very automated" by 2020.

Electric cars and those driving alone will master the future due to technological change, consumers think, according to a Roland Berger specialist. According to the analysis, up to 46% of global consumers would not buy a car if they had access to self-directed taxis, also known as robots. Also, 37% of consumers already consider the next car to be electric. The study shows that digitization makes services such as car sharing and ride sharing more and more accessible, but also opens up new sales channels. At the same time, electric vehicles are becoming more and more present on the market. Last but not least, the introduction of driving assistance facilities and the success of the autonomous technology implemented so far predict a rapid penetration of the market by autonomous cars. The Roland Berger studies shows that the consumer attitudes have changed, especially influenced by the sharing of the economy. Thus, new business models are in an ascending trend. As robot-taxi will become a viable economic alternative to having a car, their share will increase significantly in the coming years.

According to the analysis, consumers in countries with a high population density such as the Netherlands (59%), Japan (56%) and Singapore (51%) can imagine the use of robot-taxi at the expense of their personal car. Germany is not far away, with almost 47%. On the other hand, customers in large countries such as the USA (35%), India (33%) and China (27%) are less open to this idea. Roland Berger's Marcus Berret said: "Autonomous electric vehicles are expected to be ready for trade until 2021. All major manufacturers work intensively with suppliers and non-automotive players, such as IT firms, to become competitive in this area. Globally, about 40,000 employees work on new mobility and autonomous management services.

3.3. Bank robots

Many aspects of bank operations are transferred by start-ups, such as payment applications, robot-consultants, and the digitization of the credit process where people are no longer involved in the decision-making process. Most banks bet on Artificial Intelligence (AI) to act as a personal digital assistant to customers, helping automate money-making decisions, according to executive executives in the sector. AI also threatens the existence of bank branches, defending a multitude of non-physical banks, such as N26 and Monzo, which also pose a threat to traditional institutions.

German Central Bank President John Cryan said in an interview in early September 2017 that many of his bank's positions would be occupied by robots or other forms of automatization in the next five years. This will remove a substantial part of the staff of 100,000 employees of its bank. Cryan declined to come up with an exact estimate of the number of employees to be laid off, but said it would be an "important number, certainly." "The sad truth for the banking industry is that we will not need as many people as we do today. In our bank people work like robots. Tomorrow we will have robots with human behaviour, "said CEO Deutsche Bank. Head of Deustche Bank also said that automation could lead to an improvement in working conditions. "Let's take the example of a bank accountant. Much of its work is to produce figures. It takes them three to four weeks to create an account. Would not it be great if the robots could group those figures in just a few hours? Then the accountants could analyse them, form valid opinions. "Andy Haldane, CEO of the Central Bank of England, has also warned that robots will be able to take over more than 15 million UK workers threatened.

3.4. Financial robots

An early version of Artificial Intelligence (AI) is already being used to detect credit card fraud and to combat fraud in the financial industry. In the same way that AI is used in marketing to buy and sell advertising space, the financial industry can apply to make decisions on data-based investments.

Artificial Intelligence (AI) could even find its place in new emerging technologies such as digital coins, and can also automate much of the manual work that slows down financial industry activity and makes employees less productive.

Banks are being attacked on several fronts and face a potential "Kodak moment" by falling into irrelevance, according to former Barclays CEO Antony Jenkins, who now runs his own financial affair - "10X". Jenkins, who predicted 2015 that banks could shut down half of their branches and could lay off 50% of their workforce in 10 years, said that this is happening faster than expected.

Ashok Vaswani, CEO of Barclays, said in turn: "It's about automating all routine transactions so time spent with customers is used for operations that matter."

3.5. Robots in marketing

The marketing industry is increasingly relying on tools and automation to deliver results, enabling them to deliver customized messages to customers, improving their experience and selling more products at a time. Over the next ten years, these tools may increasingly rely on artificial intelligence technologies as they are developing more and more personalized ads. In the same way that the recommendations from Netflix or YouTube are based on what other people with similar tastes have watched, the next generation of marketing tools will use Artificial Intelligence (AI), learning user behaviour and helping target potential customers.

3.6. Robots in space

On September 12, 2013, NASA's Space NASA announced that Voyager 1 became the first spacecraft created by a man who was reach outside the Solar System.

For some NASA researchers, the future of our planet seems to be a grim one: the threat of nuclear war, the overcrowding, or the lack of action in the face of climate change, all of which made many think of Revelation. In this context, one of the "backup plans" includes the colonization of another nearby planet. The latest move by US researchers is a huge step in this direction.

Mars planet is far from being an ideal candidate for a human colony, however scientists are eager to send people to the Red Planet. Before this is possible, robots, such as the NASA Curiosity Rover, are used for exploration. A new plan involves robotic "bees" to discover the secrets of the neighbouring planet. Mechanized devices are called "Marsbees," in a revolutionary NASA project. "Bees" can easily and quickly explore or bring samples back to the base, which would not probably make a robot rover or lander robot.

To test how effective the plan is, the researchers are proposing a simulation in a laboratory imitating the air density conditions on the Earth's neighbouring planet to see how these devices can fly. For now, exploratory robots are constrained by rugged terrain, and can become even inoperable if they reach a pit where their tracks cannot pull them off. "Marsbees" would not face such problems, would have more freedom, but also greater energy autonomy. "The energy required for Marsbees will be substantially reduced by using wings with a conforming structure and an innovative energy-generating mechanism," said Changkwon Kang, an aerospace engineer at Alabama University, who was part of the team that conducted the study feasibility.

3.7. Medical robots

The main purpose of Artificial Intelligence (AI) applications in health is to analyse the relationships between prevention and treatment techniques and patient analyses. AI programs have been developed and applied in practices such as diagnostic processes, treatment protocol development, drug development, personalized medicine, patient monitoring and care.

Dr. Emmanuel Fombu, author of The Future of Healthcare, said: "Artificial intelligence is certainly the biggest disrupter for the medical industry. This will release doctors' time, taking care of minima tasks, help in discovering new drugs and treatments, and help deliver personalized health care to every patient in the system."

Technology companies, such as Google, IBM, Microsoft, Intel, and many start up, work with medical institutions and universities to develop AI technology. The Google Deep Mind platform is used by the National Health Service (NHS) in the UK to detect certain health risks through data collected through a mobile app. A second NHS project involves analysing medical images collected from patients to develop cancer detection algorithms by the computer.

The Hanover project at Microsoft, in partnership with the Oregon Health & Science University Cancer Institute, is analysing medical research to predict the most effective treatment options for cancer patients. Other projects include the medical image analysis of tumour progression and the development of programmable cells.

Intel has recently invested in launching "Lumiata", which uses AI to identify patients at risk of developing illness and develop their care options. Medical care is the most important investment area in AI.

3.8. Military robots

In mid-August 2013, over 100 researchers, experts and company leaders have asked, in an open letter, for the UN to ban robots endowed with artificial intelligence in war. They have warned on this occasion that military robots will trigger the third revolution in armed conflicts, after those generated by gunpowder and nuclear weapons. The letter refers to robotic military systems with a high degree of autonomy, including drones, missiles or machine guns. "These can be weapons of terror, weapons that you despise and terrorists can use against innocent populations and weapons that can be compromised by computer attacks to be used in unwanted ways," the letter said.

4. Artificial Intelligence, automation and innovation

China has the resources and plans to create an artificial intelligence economy in the coming years, reveals a report by Goldman Sachs. In the report, the world's most influential investment bank shows that the world's second largest economy has become a major global rival in using Artificial Intelligence (AI) as the engine of economic progress.

According to Goldman Sachs, the government and Chinese companies have identified artificial intelligence as the next major innovation area.

"We believe artificial intelligence will become a priority on the government's agenda and we expect new national / regional policies and funding support," the Goldman Sachs report said. While the US is generally considered to be the leader in the field, other countries are coming up strong. In July 2017, the State Council of China issued the principles of development of the field of artificial intelligence and set the goal of transforming China into a major global innovation Centre by 2030. The State Council of China expects that the total value of artificial intelligence industries' production will exceed 1.000 billion Yuan (about 148 billion American dollar) in 2-3 years.

A Chinese company invested in the US to build a unit equipped with robots able to stitch a shirt in less than 30 seconds The 20 million euro investment has generated 400 jobs, but it is likely to overwhelm the US textile market. Chinese clothing maker Suzhou Tianyuan Garments Company will opened the factory in Arkansas in 2018 to produce around 23 million t-shirts per year on the 21 production lines!

4.1. Robots seen by...

- Richard Gregory: "Curiosity, imagination, entrepreneurial character, planning for the future, all these things have brought Man on the Moon and robots on Mars ..."
- Udo Gollub: "At the horizon of 2030, machines will be smarter than people, software will rethink the industries, solar power will start to be widely used, people's lifetime will steadily exceed 100 years and 80% of the available video games will disappear. Only the people ultra-specialized will have the chance not to be replaced by the robots. "
- Elon Musk: "The Third World War will most likely be caused by the competition between the great powers in the field of artificial intelligence."
- Vladimir Putin went through an unusual moment when a robot came to "greet him" at a technology fair. The robot, endowed with artificial intelligence, uses facial recognition technology. The machine was scheduled to identify the Russian president himself and made the decision to salute him, although Putin was in a conversation: "Hello Vladimir Vladimirovich. I'm Promobot, an autonomous robot. It is a pleasure to meet you, "the Kremlin leader said. Quite surprised, Putin shakes hands with Promobot and says, "Forget about the nuclear bombs, the archery race, or the space conquest. The country that will dominate the Artificial Intelligence (AI) will lead the world. Russia wants to be a leader in the field but will not monopolize it but will share knowledge with the whole world. "

The Russian president also warned at a youth festival that super-engineered soldiers will in the future pose a greater danger than nuclear bombs. That's because they will not feel the fear or the pain. The Kremlin leader added that world leaders should conclude treaties to prevent the emergence of these soldiers: "A man has the possibility to access the genetic code created either by nature or by God, as religious men would say. All sorts of consequences can follow. A genius mathematician, an extraordinary musician, or a man who can fight without fear, compassion, regrets or pain can result. What I just described may be more dangerous than a nuclear bomb. Although he said he was afraid of genetic experiments on humans, Putin is a supporter of the development of artificial intelligence, a technology that others consider to be extremely dangerous.

5. Conclusion

In a few decades now, robots and computers could surpass the millions of years of evolution that generated our perception and intelligence.

Economies around the world are still vulnerable to new shocks and are unprepared for the next wave of "automation and robotization," warned the World Economic Forum (WEF) in its latest report for 2017. The 2017 Competitiveness Index of the organization WEF, based in Switzerland, takes into account the various factors underlying the productivity and prosperity of countries, and it has revealed major differences between the world's economies. According to the report, Switzerland remains the world's most competitive economy, followed closely by the US and Singapore.

In turn, the UNICRI warned that robots could destabilize the world: from the risk of mass unemployment to the use of autonomous robots by organizations or criminal states, research centres in robotics aim to identify possible threats. Irakli Beridze, strategic adviser at the United Nations Interregional Crime and Justice Research Institute, said a team from the Netherlands will try to come up with ideas on how progress in this area could be used to reach UN targets. He said there are considerable risks associated with the use of robots in society to be taken into account.

Unlike the other views outlined above, the European Commission proposed in 2018 a European approach to artificial intelligence and robotics. It presents technological, ethical, legal and socio-economic aspects to stimulate EU research and industrial capabilities and put AI at the service of the citizens and the European economy. Artificial Intelligence (AI) from the point of view of the European Commission has become an area of strategic importance and a key factor for economic development. It can bring solutions to the many challenges of society, from treating diseases to minimizing the impact of agriculture on the environment.

President Jean - Claude Junker points out that: "a European approach to AI will boost the competitiveness of the European Union and provide confidence based on European values. The European Commission has already invested significant sums to bring benefits to the EU society and economy".

The European Commission considers it essential to join forces in the European Union to remain at the forefront of this technological revolution, to ensure competitiveness and to shape the conditions for its development and use (respect for European values). However, the socio-economic, legal and ethical impact must be carefully addressed.

There are also voices in the European Union who say that sophisticated robots, with a high degree of autonomy, should have a legal status, be "electronic people" with rights and obligations, whether doing good things or committing crimes. The Robotics Report adopted by the European Parliament includes a debate on the imposition of taxes and duties on the use of robots. Written by Luxembourg Member of Parliament Mada Delvaux, the report contains rules on the definition of these electronic people, including interaction with human beings. "We are in the age when human intelligence stands by and rests on the artificial one," the report shows.

On 10 April 2018, the 24 Member States of the European Union and Norway signed a Declaration on Cooperation in the Field of Artificial Intelligence (AI) in Brussels in an effort to keep up with the investments made by the US and China.

Romania has a National Research, Development & Innovation Program 2016-2020. The priorities mentioned in the Program are: information and communication technologies, space and security, and big data and AI.

The main AI association in Romania is the Romanian Association for Artificial Intelligence (ARIA). It comprises eight universities and twelve companies, and has over 150 members in total. ARIA is carrying out several national and international projects, such as establishing an overview of the AI landscape in Romania, summer schools, and AI competitions. Over thirteen Romanian universities and research institutes work on AI-related topics, including the Polytechnic University of Bucharest, the Research Institute for AI (part of the Romanian Academy), the Technical University of Cluj-Napoca, the University of Bucharest, the National Research Institute for Informatics, and the Technical University of Iasi. Topics addressed by researchers include machine learning, multi-agent systems, applications for social and assistive robots, natural language processing, corpora building, computer vision, and virtual reality.

Romania is host to over 30 start-ups and small AI and AI-related companies that work in a wide range of domains, such as computer vision, natural language processing, conversational agents/personal assistants, and applied deep learning techniques.

There are several accelerators and hubs based in Bucharest and Cluj-Napoca. While Spherik Accelerator, Tech Angels Accelerator, Innovation Labs, and Tech Hub Bucharest all support start-ups, there are no specific AI-focused accelerators. The Romanian Association for Smart City and Mobility is supporting initiatives in over twenty cities in Romania, with deployment under the Alba Iulia Smart Cities initiative and in the Cluj IT cluster (nine projects in areas such as smart parking and digital access to public services).

Romania signed on 17 April 2018 the European Pact on Artificial Intelligence, Blockchain Technology and the Launch of the Radar on Innovation. According to the Romanian Government Communication: "Romania is an active supporter of the initiatives launched in the context of the Digital Single Market Strategy, as they will reduce barriers, improve access to services for all citizens and create incentives for investment and innovation, not only in the field of telecommunications , but also in all economic and industrial sectors. The new technologies addressed in the proposed signatures for signing are complemented and generate multiple effects in various sectors, such as public services, where blockchain technology will be used in the future. Artificial intelligence is essential for future economic growth and European productivity, it is estimated that the market for robots and artificial intelligence will increase by 142 billion euros by 2020. The field of artificial intelligence can generate concrete benefits in the efficient use of energy, water, and low pesticide use in agricultural exploitation, increasing precision in surgery, or providing assistance in dangerous situations or natural disasters. "

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CONSEQUENCES OF TECHNOLOGICAL CHANGES IN THE AUTOMOTIVE INDUSTRY – PERSPECTIVES OF THE CENTRAL EUROPEAN REGION AS PART OF THE GLOBAL VALUE CHAINS[1]

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Abstract: *Technological change is on the way in the automotive industry, which is moving towards electromobilization. This process raises two important questions. Firstly, what will the global value chain look like after replacing internal combustion powertrains? Secondly, what role will play the countries involved in the 'traditional' automotive production in the changed value chain? The main goal of this study is to examine the impacts of the current technological change on the automotive value chain and its effects on the Central European (the Czech Republic, Hungary, Poland and Slovakia) production. The problem is well illustrated by the fact that the Central European countries have significant powertrain production and they have a net production surplus of internal combustion engines compared to their car production. The most important finding of the study is that despite positive improvements related to the technological transition, currently the role of the Central European countries as an assembler is determined by being part of the production of the conventional internal combustion engine powered vehicles. The technological change in the Central European automotive production is based on conventional vehicle assembly. On the other hand, outlook of the region's development is dependent on corporate strategies, how they manage the technological change i.e. how they solve their battery pack production. This also includes a strategy of the automotive manufacturers that defines the spatial pattern of simultaneous production of conventional and electric models.*

Keywords: *automotive industry, operations and production management, global value chain, Central Europe, technological change, electric vehicles*

1. Introduction

From the mid-nineties on, car manufacturers started to reduce emissions in vehicle use (Wells & Orsato, 2004) and therefore developed new technologies to replace internal combustion engine (ICE) cars with pure battery-electric drive vehicles (EV). The first attempts remained only concept cars (e.g. GM Impact, BMW E1, Honda EVX) and

[1] Paper presented at the 12th Hungarian-Romanian round table, Institute for World Economy, Romanian Academy, Bucharest, October 11, 2018.

carmakers focused on Powertrain Control Module (PCM) development instead in order to enhance the efficiency of existing internal combustion engines and reduce fuel consumption. As the Volkswagen emissions scandal highlighted in September 2015, progress in reducing emissions in the context of the current (internal combustion) powertrain technologies remains limited. Also, stricter environmental laws and regulations specify product development directions (i.e., the technological substance of the final product) that influence the individual elements and the structure of the industry's vertical integration.

This technological transformation is underway now, with changes not only in the built-in components of vehicles (powertrain, transmission, batteries etc.), but also in the structure of the industry's vertical integration, i.e., in the value chain (Klug, 2013, 2014; Ciarapica et al., 2014; Slowik et al., 2016). Regarding the transformation of the value chain, there are changes in the relationship and also in the ownership structure. Some production tasks can be outsourced, others can be integrated into in-house production. In the case of electric car manufacturers, regarding the integration alternatives of battery production – which is a crucial part of electric cars – Wang and Kimble (2010, 2011) provide four possible scenarios. These are: vertical integration of a battery producer and an automobile manufacturer in a single company; the acquisition of a battery producer by a car manufacturer; the expansion of a battery producer into car production, and the cooperation of electric car manufacturers with local and foreign battery suppliers.

The technological change will transform the logistics coordination across dispersed plants in the cases of the production of batteries, electric motors and transmissions (Klug, 2013). This evolution based on technological change might lead to the erosion of the current linkages within the trinity of suppliers, Original Equipment Manufacturers (OEMs) and OEM's subsidiaries. Because of the introduction of advanced car technologies, production of previous technologies (e.g., transmissions, internal combustion engines) will gradually decline. Production of new generations of main parts like electric motors, batteries or other power generation units (fuel cells, solar panels) also change the role and scope of suppliers and OEM's subsidiaries. New technologies and technological transformation create an increasing role for e-drive development companies. Because of this there are newly joined independent firms involved in electric powertrains production or drive control development. This process affects intra-firm relationships in the automotive value chain with an overall impact on the evolution of their governance structures.

Scholars usually pay less attention to the value chain consequences of ongoing technological change. This question is pertinent in the sense that the Central European countries (the Czech Republic, Hungary Poland and Slovakia) have been deeply integrated into this international production network as part of the global vehicle production. Technological transformation raises the question of the long-term sustainability of current production capacities in the automotive-related export-based Central European economies. The economic and social costs of the transformation can be a shock, with layoffs as well as export decline, that threaten the economic development of these countries.

The main goal of this paper is to examine the results of previous research in the Central European region. The paper will demonstrate that the above-mentioned trends have a fundamental impact on the prospects of the Central European region. Therefore, this research analyzes what kind of changes the technological transformation (i.e. introducing new technologies) will cause in the 'conventional' (i.e., vehicles with internal combustion engines) car manufacturers' value chain. In the first part of the paper I will summarize the latest issues of electromobility. In the second part, the role of the Central European countries in the technological change will be examined. The main question is whether the countries involved in the technological change are ordered in a similar spatial pattern as those in conventional (internal combustion engine, ICE) automotive manufacturing.

2. The rise of alternative drives in the automotive industry and their impact

There are alternatives replacing internal combustion engines, but currently the car's evolution is towards electric drive (EV) vehicles (Deloitte, 2017). Technologies taking over ICE (Spath et al., 2011; Kühn & Glöser, 2013) will completely replace the direct use of fossil fuels in the future. This evolution begins with the *Hybrid Electric Vehicle* (HEV) that is a combination of the ICE and the electric motor/generator. The structure of the *Plug-in Hybrid Electric Vehicle* (PHEV) is the same but due to having a charging possibility a relatively smaller ICE is combined with a larger battery capacity. The difference between *Battery Electric Vehicle* (BEV) and the *Fuel Cell Electric Vehicle* (FCEV) is the storage of electricity. In BEVs mostly Li-ion battery cells storage the energy, in the FCEVs the energy cells produce electricity by electrochemical reaction of oxygen and hydrogen.

Over one million EVs were sold in 2017[2], which amounted to about 1% of the global sales. According to the Bloomberg's EVs timeline (Bloomberg 2016) it will be growing about 35% until 2040. Battery pack[3] determines about 75 percent of BEV's power train cost (Wolfram & Lutsey, 2016), and one third of the total cost (UBS 2018 via portfolio.hu[4]), so the propulsion of the electric car is determined by the price of the batteries. Based on related literature (see Berckmans et al., 2017) the technology split is predicted to start from the 2020's with the reduction of battery prices (Bloomberg New Energy Finance 2016). Therefore, the main driving force will be the innovation in battery technology and the Chinese consumption that will account for almost 50% of the global EV market in 2025. [5] If we go into details the picture is not so 'optimistic', the breakthrough will not be the BEVs but the mixed HEVs (see Figure 1.). The forecast of Berckmans and his co-authors (2017) highlights the uncertainty of the market launch of e-technology.

[2] https://www.iea.org/gevo2018/.
[3] See more on: http://www.samsungsdi.com/column/all/detail/54344.html.
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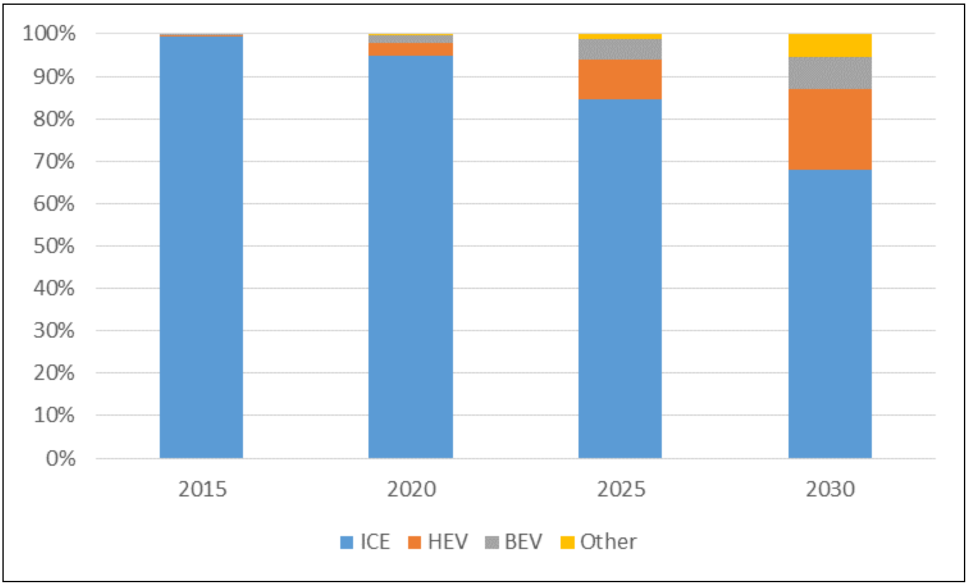
[5] https://about.bnef.com/electric-vehicle-outlook/.

Figure 1: The rise of alternative drives in automotive industry



Source: Berckmans *et al*. 2017.

The Bloomberg New Energy Finance analysis (Bloomberg 2016) focused on the total cost of ownership of electric vehicles, and articulated the main points in order to achieve EV's widespread adoption:

1. Governments must offer incentives to lower the costs;
2. Manufacturers must accept extremely low profit margins;
3. Customers must be willing to pay more to drive electric;
4. The cost of batteries must come down.

There is a growing number of serial EVs. According to different sources[6,7] worldwide there are more than three dozen (between 36 and 44) different electric vehicle models made in 2018. Among the electric cars in production, there are more and more cars developed and manufactured in China. Some of these are the result of a cooperation with triad OEMs (e.g. with BMW), others are the development of Chinese companies. A large number of new players are entering the local or regional market. However, the paper focuses on vehicles produced by triads (North America, Europe and Japan) and South Korea. Moreover, the companies present in the European Union's market also come from these regions only.

Table 1 shows the evolution of the mass production of the EVs in the 'triad countries'. Regarding the location of the production, there are three kinds of approaches. First, OEMs locate the production near the market in a 'low-cost country'. Fiat 500E is exclusively produced for the U.S. market, therefore the assembly of the EVs is in the FCA's (Fiat Chrysler Automobiles) Mexican factory. The situation is the same with the Volkswagen e-UP which is produced in Slovakia. Second, the technological cooperation in order to develop an EV can determine the location of the assembly. As a result of the Groupe PSA[8]-Mitsubishi cooperation the city EVs are

[6] https://en.wikipedia.org/wiki/List_of_modern_production_plug-in_electric_vehicles.
[7] https://en.wikipedia.org/wiki/List_of_electric_cars_currently_available.
[8] Groupe PSA or Peugeot S.A. is a French manufacturer of automobiles and motorcycles sold under the Peugeot, Citroën, DS, Opel and Vauxhall brands.

assembled in the Japanese factory of Mitsubishi. Third, the latest developments are produced in the headquarter/home country of the OEMs. BMW's i3 is made in Germany or General Motors's EVs are made in the U.S.

Table 1: Electric vehicles (BEV) of the 'triad brands' in serial production, ranked by the starting time of mass production

OEM	**Model**	**Mass production started**	**Assembled in**
Nissan	Leaf	2010	Japan (Oppama, Yokosuka); USA (Smyrna, Tennessee); United Kingdom (Sunderland)
Mitsubishi; Peugeot; Citroen	Mitsubishi, i-MiEV; Peugeot, iOn; Citroen, C-Zero	2010	Japan (Kurashiki)
Ford	Focus Electric	2011	USA (Wayne, Michigan); Germany (Saarlouis)
Honda	Fit EV	2011-2014	Japan
Renault	Fluence ZE	2011	2011-2014 Turkey (Bursa); 2013- South Korea (Busan)
Renault	ZOE	2012	France (Flins)
Renault	Twizy	2012	Spain (Valladolid); South Korea (Busan)
Tesla	Model S	2012	U.S. (Fremont, CA); Netherlands (Tilburg)
FCA (FIAT)	500e	2013	Mexico (Toluca)
BMW	i3	2013	Germany (Leipzig)
BMW Brilliance Zinoro	1E	2013	China (Shanghai)
Volkswagen	e-Up!	2013	Slovakia (Bratislava)
Kia	Soul EV	2014	South Korea (Gwangju)
Volkswagen	e-Golf	2014	Germany (Wolfsburg)
Daimler	Mercedes-Benz B-Class Electric Drive	2015-2017	Germany (Rastatt)
Tesla	Model X	2015	U.S. (Fremont, CA); Netherlands (Tilburg)
General Motors	Chevrolet Bolt EV/ Opel/Vauxhall Ampera-e	2016	USA (Detroit, Michigan)
Hyundai	Ioniq Electric	2016	South Korea (Ulsan)
Tesla	Model 3	2017	U.S. (Fremont, CA)
Hyundai	Kona Electric	2018	South Korea (Ulsan); India (Chennai)
Jaguar Land Rover	Jaguar I-Pace	2018	Production was outsourced to Magna Steyr in Austria (Graz)

Source: author, based on company reports and press releases.

Going into details of the supply chain, the technological change specifies not only the built-in components of vehicles, but also the structure of the industry's vertical integration, i.e. the supply/value chain (Klug, 2013, 2014; Ciarapica *et al.*, 2014; Slowik *et* *al.*, 2016). There are consequences of the technological transformation at *product level*. On the one hand, there will be *outdated products* such as the internal combustion engine and transmission. The outdated technology will be phased out in parallel with the evolution of electric vehicles. That means that engine size reduction (downsizing) will be continuing, because of the HEVs (Douba, 2011) and the PHEVs (Green Car Congress, 2012) move forward to electromobility. On the other hand, there are *new components representing new technologies and new features*. Changing of the parts and features of the vehicle redound new suppliers. For instance, the largest Li-ion battery producers are Chinese (Contemporary Amperex Technology, BYD Auto), Japanese (Panasonic) and South Korean (Samsung, LG) companies.

There will be consequences of the technological transformation also at *production level* i.e. at the value chain. The technological moving towards electromobility brings a new situation. Replacing ICE vehicles by EVs *requires three types of knowledge*, i.e. mechanical, chemical and electronic competences, so called a ‘me-chem-tronics’ (McKinsey, 2011). This new situation means that OEMs need new abilities and knowledge that are beyond their traditional competence (Grauers *et al.*, 2017).

As previously mentioned, significant share of the production costs is the price of the battery pack, therefore, all OEMs seek intensive research and development activities for cheaper price together or independently with the battery producers (Sarasini *et al.*, 2013). Establishing this “new knowledge networks” (Sarasini *et al.*, 2013) needs time, among others because OEMs prefer traditional suppliers.

There are integration alternatives for the different product or production phases. OEMs are forced to choose between in-house production and outsourcing or cooperation with the suppliers. In terms of technological development and production, besides new services, the development and production of the powertrain – as a complete system – are also critical points within the value chain. Same as the alternatives provided by Wang and Kimble (2010, 2011), the OEMs have long a tradition and routine regarding in-house production or outsourcing. The question is raised, how the level of outsourcing influences the new or changing structure of the supply chain in the automotive production. Traditionally, the Japanese OEMs are more ‘outsourced’ (Chanaron, 1995), while the European and U.S. firms produce more in-house, since then ‘Western’ (U.S. and European) manufacturers have adopted the Japanese method (Clark & Fujimoto 1991). However, apparently standardizing production management shows several differences. While the European manufacturers were focusing on outsourcing, Japanese manufacturers focused on modularization (Takeishi & Fujimoto, 2001). In addition, during the Japanese outsourcing, the significance of the (grouped) suppliers belonging to the same group of companies cannot be neglected either (Takeishi & Noro, 2017). They shade the picture that emerged from the supply chain of Japanese and ‘Western’ manufacturers.

For instance, the U.S. automaker Tesla does things differently from the other OEMs in terms of vertical integration. In order to carry out the development of new models efficiently, not just the majority of the development but manufacturing processes are also in-house.[9] Globalized suppliers react much more slowly to a problem than a company based on a newly developed technology would. In 2016 the Goldman Sachs’ report noted

[9] https://evannex.com/blogs/news/vertical-integration-how-elon-musk-employs-an-old-successful-approach-in-american-business-at-tesla.

that *Tesla* is running about an 80% vertically integrated operation.[10] This high vertical integration of the production is due to mergers of certain production companies.[11,12,13]

With the spread of technology, conventional automakers differed in the issue of outsourcing of certain components. In case of battery and battery pack production, previously, Volkswagen's electric cars were powered by batteries from suppliers. "This is not one of our core competencies," – said Matthias Müller former Volkswagen CEO, "others can do it better than we can." [14] Later on, Volkswagen decided to move forward to enter battery production. In May 2016 Volkswagen's new Chinese factory opened in Qingdao and besides their new model it will produce battery systems as well.[15] According to press releases, Volkswagen has very ambitious plans ('Roadmap E') to move forward to electricity, from 2019 until 2022 on average every month there will be new e-cars introduced.[16] With this strategy, the proportion of in-house production begins to increase which, instead of the supplier-OEM connection, affects the headquarter-subsidiary relationship.

Focusing on battery packs, those companies who buy their batteries from external sources diversify their procurement, *use more suppliers* (see Table 2). Most of the companies are from Japan and South Korea, even the U.S. companies use Japanese suppliers except for General Motors which has a partnership with the A123 Systems, a subsidiary of the Chinese Wanxiang Group. The role of these countries is confirmed by the scientific biometrics, according to which U.S., China, Japan and South Korea are the most active on electrification R&D (Grauers et al., 2017).

Table 2: Four Japanese OEMs and U.S. GM and Ford lithium-ion battery sources

Toyota	**Vehicle**	**Prius α**	**Prius PHV**	**EV "eQ"**	
	Supplier	PEVE/Panasonic	Panasonic	Panasonic	
Nissan	**Vehicle**	**Leaf**	**Fuga/Cima HV**	**Front-wheel drive HV**	
	Supplier	AESC	AESC	Hitachi Vehicle Energy	
Honda	**Vehicle**	**Civic HV**	**Fit EV**	**CR-Z HV**	**Accord HV/PHV**
	Supplier	Blue Energy	Toshiba	Blue Energy	Blue Energy
Mitsubishi	**Vehicle**	**i-MiEV**	**MINICAB-MiEV**	**MINICAB MiEV TRUCK**	
	Supplier	LEJ/Toshiba	LEJ/Toshiba	Toshiba	
GM	**Vehicle**	**Chevrolet Volt**	**eAssist vehicles**	**Chevrolet Spark EV**	
	Supplier	LG Chem	Hitachi Vehicle Energy	A123 Systems	
Ford	**Vehicle**	Focus EV	C-Max HV/PHV	Fusion HV/PHV	Lincoln MKZ HV
	Supplier	LG Chem	Panasonic	Panasonic	Panasonic

Source: www.marklines.com (https://www.marklines.com/en/report_all/rep1115_201210).

An example for the collaboration model is the Renault-Nissan Alliance that cooperates with the Automotive Energy Supply Corporation in a joint development of

[10] https://www.valuewalk.com/2016/02/tesla-stock-rallies-after-tough-couple-of-weeks/.
[11] https://www.autoblog.com/2016/11/08/tesla-buys-german-company-manufacturing/?guccounter=1.
[12] https://www.autoblog.com/2015/05/07/teslas-first-acquisition-is-michigan-based-tooling-company-rivi/?guccounter=1.
[13] https://www.cnbc.com/2017/11/08/tesla-buys-perbix-for-factory-automation.html.
[14] https://www.bloomberg.com/news/articles/2018-03-13/vw-secures-25-billion-battery-supplies-in-electric-car-surge.
[15] https://www.bloomberg.com/news/articles/2018-05-28/volkswagen-to-open-new-china-factories-as-suv-ev-demand-booms.
[16] https://www.volkswagenag.com/en/news/2018/03/VolkswagenGroup_expand_production.html.

lithium-ion batteries. In the Renault-Nissan-Mitsubishi Alliance[17] the three car manufacturers can share a growing number of links in the supply chain.[18] The major owner of the Automotive Energy Supply Corporation is Nissan, therefore due to the alliance they can share their existing knowledge.

3. Perspectives of the Central European Region as part of the Global Value Chains

In order to understand the industry's role in Central Europe we need to study the forces behind the recent evolution of the global value chains. Technology and the governance structure of the automotive value chains are thus the focus of this research. Several low-cost countries joined global production in the 70's and 90's (Humphrey & Memedovic 2003; Friedman, 2005 and others), transforming their global position in the world economy. Global value chains enhance intra-firm linkages; they are complex and ever-changing governance frameworks which have impacts on local economies as well. Moreover, global value chains have an immediate and profound impact on individual states as well. The Central European automotive industry has shown outstanding development in the last 25 years, and it has also incorporated the economies of the region into the global value chains.

Central Europe (the Czech Republic, Hungary, Poland and Slovakia) is still popular among automotive investors. Besides its moderate market potentials, the geographical proximity to the Western markets is also a crucial factor when investing into the Central European countries (Schmitt & Van Biesebroeck, 2013). There were almost three dozen OEMs assembly and production plants in the Central European region[19] at the end of 2017. The output of 3.6 million road vehicles reached 3.7% of the world and 19.3% of the European output in 2017 (OICA, 2018). The potential of the region has not yet been exhausted, additional investments in modernization will result in an increase in production. There are new factories just opening in the second half of 2018 in Slovakia and under development in Hungary.

Almost the whole production of the automotive industry is exported (Túry, 2018) therefore apart from trade relations, export figures also show the structure of the production. Production figures are strongly affected by their parts production (Eurostat ComExt database, 2018). Except the Czech Republic and Slovakia where the export ratios of the assembled vehicles are 54 and 66 percent respectively, the export of components and parts give most of the trade (in Poland 60-, in Hungary 62 percent) in the other two countries in 2017. This is not just the production of suppliers (Humphrey & Memedovic, 2003), but the component and part production of the OEMs' affiliates (Nunnenkamp, 2004; Túry, 2017). For instance, the Czech Republic, Hungary and Poland have significant powertrain productions, in 2017 they produced nearly 4.7 million units that is a net production surplus of engines, compared to the car production of 3.4 million (OICA, 2018). In Hungary Volkswagen (Audi)[20] and PSA (Opel)[21], in Poland Volkswagen[22], PSA

[17] https://www.alliance-2022.com/about-us/.

[18] https://www.economist.com/business/2018/03/17/renault-nissan-mitsubishi-has-become-the-worlds-biggest-carmaker.

[19] 16 in Poland, 8 in the Czech Republic, 4 in Slovakia and 5 in Hungary.

[20] http://audihungaria2017-hu.audiportal.hu/hu/mult#infografika.

(Opel)[23], Toyota[24] and FCA (Fiat Chrysler Automobiles)[25] have separate engine production plants, until in the Czech Republic Volkswagen (Škoda), and in Slovakia KIA[26] factories have integrated engine production. While in the field of assembly the factories are flexibly adapting to the technological change[27,28], stopping production of a major unit, like the powertrain, is a serious financial burden.

If we look at the current production matrix of the Central European countries, on the one hand, we can see that vehicle assembly dominate the activities of the OEMs. On the other hand, in terms of technology change, there are few examples compared to conventional technology (see Table 3). Comparing Table 1 with Table 3 we can sum up, that production of vehicles with alternative drive (HEVs, PHEVs or BEVs) begins in the 'home countries' i.e. for a Chinese company in China, for a Japanese company in Japan. As earlier mentioned, if there is a cooperation between firms' production can be allocated to a partner's country (e.g. in the case of Renault-Nissan-Mitsubishi Alliance).

Table 3: Car production matrix of the automotive OEMs in Central Europe

Country/manufacturer (number of factories, incl. assembly of commercial vehicle)		Vehicle powered by ICE assembly	ICE transmission	ICE powertrain	Starting of EV assembly	Starting of EV components / parts production
Czech Republic	Skoda (3)	x	x	x	2020	2019
	Hyundai (1)	x	x			
	TPCA (1)	x				
Hungary	Audi (1)	x		x		2018
	Daimler (1)	x				
	Suzuki (1)	x				
	PSA (1)		x	x		
Poland	VW (6)	x		x		
	Toyota (1)			x		2018
	PSA (2)	x		x		
	FIAT (1)	x		x		
Slovakia	KIA (1)	x		x		
	VW (4)	x	x		2013	
	PSA (1)	x				
	JLR (1)	x				

Source: author, based on company reports and press releases.

Considering the prospects of the region, there is a large number of companies *continuing old technologies* (i.e. ICE vehicles). In Hungary PSA's Szentgotthárd plant (Opel) continues „normal operation" despite the ownership change (GM sold Opel to the

21 https://autopro.hu/gyartok/Ilyen-autoipari-kornyezetbe-erkezik-a-BMW/26732/.

22 https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-motor-polska-sp-z-oo-578.

23 Jacobs, A. J. (2017), Automotive FDI in Emerging Europe: Shifting Locales in the Motor Vehicle Industry, Springer

24 https://www.toyotapl.com/about-us.json.

25 Komisja Konsultacyjna w FCA Powertrain Poland Sp. z o. o., Informator Związkowy 10/2018 http://www .metalowcy-bielsko.pl/uploaded/Powertrain%20/10%202018%20FCA%20 Powertrainl.pdf.

26 Kia Motors Slovakia (2018), Annual Report 2017, Teplicka nad Vahom: Kia Motors Slovakia s.r.o.

27 https://www.daimler.com/innovation/case/connectivity/full-flex-plant.html.

28 https://www.brand-e.biz/innovation/bmws-first-new-european-plant-in-20-years-builds-evs.

French PSA), but there are no future plans for the technological change.[29] Japanese Suzuki, which has been manufactured in Hungary, plans to change technology with Toyota in a joint production for the Indian market. Even though Suzuki in Europe only has production capacities in Hungary, there is no information about the electromobilization of the Hungarian production. The Hungarian research and development directions of the company are based on traditional technology.[30] New *investments can also represent old technology*. While the Indian Tata Motors owned car manufacturer Jaguar Land Rover Automobile move U.K. production of Land Rover Discovery to Slovakia, the British plant will be upgraded for electric models.[31] On the other hand, electromobilization of the company was outsourced. The first electric model of the company 'I-Pace' is assembled by the supplier company Magna in Austria.[32]

At the same time, there are encouraging developments in the *region's connection to new technologies development*. South Korean LG Chem launched Europe's largest Lithium-ion battery factory in Poland in 2018.[33] The main costumer is the Reanult-Nissan Alliance, but it will be a good opportunity to supply other European manufacturers (among others BMW, Daimler, Volkswagen and Volvo) as well. The capacity is enough for 100 thousand pure electric vehicles.[34] Another South Korean producer Samsung SDI launched a serial production of the battery cell in Hungary in 2018. The Hungarian factory is capable of producing battery packs for 50 thousand EVs annually.[35]

According to the biometric data of the scientific journal publications these four Central European countries are not on the research map (Grauers *et al.*, 2017). Nonetheless, there are R&D activities at the suppliers with which the countries of the region can join the current research and development activities in the automotive production. This is a forward-looking initiative, where not only multinationals but smaller companies can join the international automotive supply chain. In Poland the Japanese Toyota Motor invested in manufacturing a new combustion engine for hybrid vehicles.[36] The other EV-related investment, LG Chem gives an opportunity to join the global battery technology R&D through academic research.

There are good examples in Hungary as well. The German Audi AG is preparing to launch the serial production of electric cars 'e-tron' as early as 2019, which will coincide with the start of production of electric motors at the Hungarian plant. There is a good practice for research cooperation within the private and the state sector. A research consortium from Budapest University of Technology and Economics, Institute for Computer Science and Control (Hungarian Academy of Sciences), Bosch, a Knorr-Bremse and Continental for autonomous vehicle development. The German Thyssenkrupp also

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[29] https://hvg.hu/cegauto/20180321_megmenekult_a_szentgotthardi_Opelgyar.

[30] https://www.suzuki.hu/corporate/hu/vallalat/palyazatok/elindult-a-magyar-suzuki-zrt-altal-vezetett-4-eves-konzorcialis-kutatas-fejlesztesi-projekt.

[31] https://www.theguardian.com/business/2018/jun/11/jaguar-land-rover-to-move-production-of-discovery-from-uk-to-slovakia-jobs-solihull.

[32] https://www.magna.com/company/newsroom/releases/release/2018/03/02/news-release---first-ever-all-electric-jaguar-unveiled-at-magna.

[33] https://www.reuters.com/article/us-lgchem-factory-poland/lg-to-open-europes-biggest-car-battery-factory-next-year-idUSKBN1CH21W.

[34] https://electrek.co/2017/10/12/lg-production-electric-cars-new-battery-factory/.

[35] http://www.samsungsdi.com/sdi-news/1642.html

[36] https://www.reuters.com/article/us-toyota-strategy-poland/toyota-to-invest-113-mln-in-hybrid-car-engine-factory-in-poland-idUSKBN1DT174

carries out research in autonomous vehicle development in the center of R&D in Hungary.[37]

In the Czech Republic Škoda has a unique position although Škoda's in-house research and development activities would be transferred to Volkswagen's centre in Germany, only design activities remaining at the Czech company (Pavlínek, 2015). Together with the other companies in the Volkswagen group, Škoda also makes significant moves towards electromobility. Škoda 'Vision E' being the basis of an electric car will be launched by 2020 (Škoda, 2018). They do not only produce electric motors and electrical components but also a purely electric-drive vehicle at the Mladá Boleslav and Kvasiny plants to cover the needs of Škoda and the Group as a whole.

4. Conclusion

Technological transformation is underway now in the automotive industry, with changes not only in the built-in components of vehicles, but also in the structure of the industry's vertical integration, i.e., in the value chain. It is not only about outdated and new components, but the geographical pattern of the production. Central European countries are deeply integrated into the global automotive value chain. Moreover, production of powertrains has a surplus compared to car assembly. Therefore, the evolution in the EV development, including production of ICE for hybrid vehicles or electric motor has a significant impact on the output of the countries in the region. There are positive improvements related to the technological transition, but currently the role of the Central European countries as an assembler is determined by being part of the production of the conventional ICE powered vehicles. This is also supported by the examples of mass production of the EVs and the production portfolio of the local affiliates. Therefore, the basis of the technological change is the conventional car assembly.

Besides, there are good examples how central Europe can link to the changing automotive value chain. Production of the battery pack which is one-third of the cost is a key question. There are several examples how OEMs organize the production. Tesla is the leader in development, closely allied with Panasonics, building up the whole supply chain in the U.S. Others like GM diversify its procurement, using more suppliers. The main question is how the Central European countries will be involved in powertrain and battery pack manufacturing. There are good examples in Poland and Hungary for building a battery factory. These two 'independent' factories can produce battery packs for more than 150 thousand pure EVs.

On the other hand, the main goal is that as technology changes, countries in the region can absorb as many new technologies as possible. There are good initiatives to link to the main R&D activities. The biggest suppliers started to invest in the development of autonomous driving technology at their Central European affiliates.

Future is open for several reasons. As it is shown in the examples automotive companies have different strategies regarding battery manufacturing. This also includes a strategy that defines the spatial pattern of simultaneous production of conventional and electric models. On the other hand, the ongoing labour shortage of the Central European

[37] https://www.thyssenkrupp.hu/en/component/content/article/16-news/422-sneak-peek-into-the-future-of-steering-press-day-in-hungary

countries sets a limit on the replacement of the traditional technology, even though using industrial robots is becoming more common in the industry.

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REFORM OF RULES ON EU VAT

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Abstract: *In January 2018 the EU has released two proposal designed to simplify the VAT system, specifically around reduced rates, and to reduce compliance costs of smaller businesses in respect of VAT. The EU's common rules on VAT rates do not treat Member States equally. More than 250 exemptions allow several Member States much more flexibility in setting VAT rates than others. While these derogations are due to expire once the reformed VAT system comes into place, the rates proposal will ensure that all Member States have the same flexibility and a uniform structure in which to set their own VAT rates. The second proposal is designed to make trading in other EU member states easier for smaller businesses. Currently, small businesses may benefit from generous thresholds in their state of establishment, but zero thresholds exist for non-established businesses, meaning higher compliance costs. The intended proposals will provide simplification measures (around invoicing, record keeping etc.) for businesses with a turnover not exceeding €2 million and will allow member states to apply thresholds to non-established businesses with a turnover not exceeding €100,000.*

Keywords: *standard rate of VAT, reduced rate of VAT, VAT registration thresholds, VAT compliance, VAT reform*

1. Introduction

The European Union Value Added Tax (EU VAT) applies to all member states. The current VAT system dates from 1993 and was intended to be a transitional system. The abolition of fiscal frontiers between Member States and the taxation of goods in the country of origin required common rules for VAT rates to avoid distortion in cross-border shopping and trade.

The second section of this work gives an overview of the VAT rates, VAT registration and VAT return, applicable this year in each Member States.

A definitive VAT system that works for the Single Market has been a long-standing commitment of the European Commission. The **2016 *VAT Action Plan***[1] explained the need to come to a single European VAT area that is simpler and fraud-proof. Following the adoption of this Action Plan, the European Commission has made a series of proposals to work towards its completion.

In **October 2017** the European Commission agreed on four fundamental principles (named "cornerstones") of a new definitive single EU VAT area:[2]

- **Tackling fraud**: VAT will now be charged on cross-border trade between businesses. Currently, this type of trade is exempt from VAT, providing an easy loophole for unscrupulous companies to collect VAT and then vanish without remitting the money to the government.
- **One Stop Shop:** It will be simpler for companies that sell cross-border to deal with their VAT obligations thanks to a *One Stop Shop*. Traders will be able to make declarations and payments using a single online portal in their own language and according to the same rules and administrative templates as in their home country. Member States will then pay the VAT to each other directly, as is already the case for all sales of e-services.
- **Greater consistency:** A move to the principle of 'destination' whereby the final amount of VAT is always paid to the Member State of the final consumer and charged at the rate of that Member State. This has been a long-standing commitment of the European Commission, supported by Member States. It is already in place for sales of e-services.
- **Less red tape:** Simplification of invoicing rules, allowing sellers to prepare invoices according to the rules of their own country even when trading across borders. Companies will no longer have to prepare a list of cross-border transactions for their tax authority (the so-called 'recapitulative statement').

In **November 2017** the European Commission proposed new rules on administrative cooperation between Member States' administrations in order to fight VAT fraud more efficiently.

In **January 2018** the EU has released a two-fold proposal designed to simplify the VAT system, specifically around reduced rates, and to ease the administrative burden and compliance costs of smaller businesses in respect of VAT. These proposals are detailed in the third section.

2. Overview and comparison of VAT in EU Member States

2.1. VAT rates in EU member states

Each member state's national VAT legislation must comply with the provisions of the Directive no. 112/2006 which sets out a number of general rules on VAT rates. Member States shall apply a standard rate, which may not be lower than 15%, but the Directive does not specify any maximum limit.

[1] http://europa.eu/rapid/press-release_IP-16-1022_en.htm
[2] http://europa.eu/rapid/press-release_IP-17-3443_en.htm

Because VAT rates has not been harmonised, every year the European Commission publishes the official list of VAT rates applied in each member state. ***Table 1*** contains the list of VAT rates for 2018.

Table no. 1. VAT rates in the Member States (01.01.2018)

	Member States	**Standard Rate (%)**	**Super Reduced Rate (%)**	**Reduced Rate (%)**	**Parking Rate (%)**
	Austria	20	-	10/13	13
	Belgium	21	-	6/12	12
	Bulgaria	20	-	9	-
	Croatia	25	-	5/13	-
	Cyprus	19	-	5/9	-
	Czech Republic	21	-	10/15	-
	Denmark	25	-	-	-
	Estonia	20	-	9	-
	Finland	24	-	10/14	-
	France	20	2,1	5,5/10	-
	Germany	19	-	7	-
	Greece	24	-	6,5/13/17	-
	Hungary	27	-	5/18	-
	Ireland	23	4,8	9/13,5	13,5
	Italy	22	4	5/10	-
	Latvia	21	-	12	-
	Lithuania	21	-	5/9	-
	Luxembourg	17	3	8	14
	Malta	18	-	5/7	-
	Netherlands	21	-	6	-
	Poland	23	-	5/8	
	Portugal	23	-	6/13	13
	Romania	19	-	5/9	-
	Slovakia	20	-	10	-
	Slovenia	22	-	9,5	-
	Spain	21	4	10	-
	Sweden	25	-	6/12	-
	United Kingdom	20	-	5	-

Source: https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf

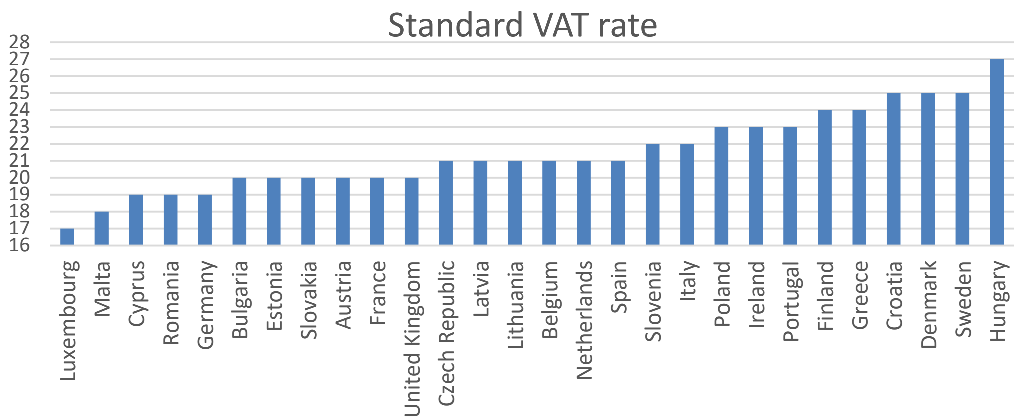
As we see in ***Graph 1*** the country with the lowest **standard rate of VAT** is Luxembourg (17%) while Hungary is the country with the highest standard rate of VAT (27%). In 2018 the average standard rate of VAT in EU28 is 21.46%. In EU15 this rate is 21.67% while in EU13 the average standard rate of VAT is 21.23%.

With the exception of Romania, where the standard rate of VAT has decreased from 20% in 2016 to 19% in 2017, in EU Member States, standard rates have not changed in the last two years.

Regarding **reduced VAT rates,** the differences between Member States are significant: 10 states have one reduced rate, 16 states have two reduced rates, Greece has three reduced rates and Denmark is the single state which doesn’t have reduced rate. The minimum reduced rate of 5%, value imposed by European Directives is found in Croatia, Cyprus, Italy, Lithuania, Hungary, Malta, Poland, Romania and United Kingdom. The highest values of reduced rate are found in Hungary (18%), Greece (17%), Czech Republic (15%) and Finland (14%).

These reduced rates of VAT are applied to different categories of goods and services like: food products, water supplies, pharmaceutical products, books, newspapers, hotel accomodation etc.

Graph no. 1. VAT rates in the Member States



Source: https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf

Over-reduced rates (under 5%) are applied only in five states: Spain (4%), France (2.1%), Ireland (4,8%), Italy (4%) and Luxemburg (3%), for goods and services as: food products, water supplies, pharmaceutical products, books, admission to cultural services, shows (cinema, theatre, sports), agricultural inputs etc.

A characteristic met among EU countries is represented by the **parking rate**. Member States which, at 1 January 1991, were applying a reduced rate to the supply of goods or services other than those specified in Annex III may apply the reduced rate to the supply of those goods or services, provided that the rate is not lower than 12 %. The parking rate is applied in five Member States (12% in Belgium, 13% in Austria and Portugal, 13.5% in Ireland and 14% in Luxemburg) for certain goods as: certain energy products, wine, agricultural tools and utensils, washing and cleaning products etc.

According to Title VIII, Chapter 4 of the VAT directive 2006/112/EC, the zero rate is applied by seven states: Belgium, Denmark, Ireland, Malta, Finland, Sweden and United Kindom for newspapers, supplies of pharmaceuticals, medicines, supplies of food products for human consumption etc.

2.2. EU VAT compliance

For businesses with an EU VAT registration, and providing taxable supplies of goods or services, there are a number of requirements to follow to ensure they are fully compliant with European VAT regulations. These rules are detailed in the VAT Directive. All member states of the EU must implement these VAT compliance obligations into their own laws.

Companies providing taxable supplies must obtain a valid, unique EU VAT number from their home country. If they are also buying and selling goods in another EU country, they may have to register there, too. This will give them a valid VAT number which they can record all transactions against. Businesses can also provide this number to their foreign EU customers to ensure they are correctly charged nil VAT on intra-community supplies of goods or services.

Table 2 contains a summary of the 2018 VAT registration annual thresholds for **resident** companies in the 28 EU member states. The great variations regarding the annual threshold for VAT registration represent a real trap for those who intend to develop their businesses in different Member States. The threshold varies from zero (Greece, Hungary, Malta, Spain and Sweden) till 85000 euro (UK), so the local advice is necessary even from first stages of a business start-up.

Table no. 2. EU VAT registration thresholds 2018

	Member States	**VAT Thresholds**
1.	Austria	€30,000
2.	Belgium	€25,000
3.	Bulgaria	BGN 50,000
4.	Croatia	HRK 300,000
5.	Cyprus	€15,600
6.	Czech Republic	CZK 1million
7.	Denmark	DKK 50,000
8.	Estonia	€40,000
9.	Finland	€10,000
10.	France	Goods €82,800; Services €33,200
11.	Germany	€17,500
12.	Greece	nil
13.	Hungary	nil
14.	Ireland	Goods €75,000; Services €37,500
15.	Italy	€60,000
16.	Latvia	€40,000
17.	Lithuania	€45,000
18.	Luxembourg	€30,000
19.	Malta	nil
20.	Netherlands	€1,345
21.	Poland	PLZ 150,000
22.	Portugal	€12,500
23.	Romania	ROL 300,000
24.	Slovakia	€49,790
25.	Slovenia	€50,000
26.	Spain	nil
27.	Sweden	nil
28.	United Kingdom	£85,000

Source: https://www.vatlive.com/eu-vat-rules/eu-vat-number-registration/vat-registration -threshold/?sessionId=1522776716266&referrer=https%3A%2F%2Fsearch.yahoo.com%2F &lastReferrer=www.vatlive.com

EU Member States are free to set their own calendars for VAT return reporting, as we see in ***Table no. 3***. Countries typically follow the format below:

- **Monthly** reporting is the most common cycle.
- **Quarterly** reporting is the majority of other situations.
- **Annual** reporting is required in addition in certain countries (e.g. Italy). Other countries may only require a single annual return if there is very limited activity (e.g. Germany).
- **On an activity basis** which is very rarely allowed (e.g. France) for companies with irregular trading.

Irrespective of the period of submission, the mandatory information of VAT return are: chargeable VAT, deductible VAT, net VAT amount (payable or receivable), total value of input transactions and total value of output transactions.

Table no. 3. VAT Return

	Country	**Periodicity of VAT returns**	**Annual VAT declaration deadline**
1.	Austria	Monthly / Quarterly	April
2.	Belgium	Monthly / Quarterly	Not Applicable
3.	Bulgaria	Monthly	Not Applicable
4.	Croatia	Monthly / Quarterly	Not Applicable
5.	Czech Republic	Monthly / Quarterly	Not Applicable
6.	Cyprus	Quarterly	Not Applicable
7.	Denmark	Monthly / Quarterly	Not Applicable
8.	Estonia	Monthly	Not Applicable
9.	Finland	Monthly / Quarterly / Annually	Not Applicable
10.	France	Monthly / Quarterly / Annually	Not Applicable
11.	Greece	Monthly / Quarterly	May, 10
12.	Germany	Monthly / Quarterly	May
13.	Hungary	Monthly / Quarterly / Annually	Not Applicable
14.	Ireland	Biannually / Quarterly / Annually	Not Applicable
15.	Italy	Annually	Not Applicable
16.	Latvia	Monthly / Quarterly / Biannually	1 May
17.	Lithuania	Monthly / Biannually	Not Applicable
18.	Luxembourg	Monthly / Quarterly / Annually	May
19.	Malta	Quarterly / Annually	March
20.	Netherlands	Monthly / Quarterly / Annually	March
21.	Poland	Monthly / Quarterly	Not Applicable
22.	Portugal	Monthly / Quarterly	15th July
23.	Romania	Monthly / Quarterly / Biannually / Annually	Not Applicable
24.	Slovenia	Monthly / Quarterly	Not Applicable
25.	Slovakia	Monthly / Quarterly	Not Applicable
26.	Spain	Monthly / Quarterly	January
27.	Sweden	Monthly / Quarterly / Annually	Not Applicable
28.	United Kingdom	Monthly / Quarterly / Annually	Not Applicable

Source: http://europa.eu/rapid/press-release_MEMO-13-926_en.htm

3. Reform of rules on EU VAT

On January 18th of 2018, the European Commission made two proposals to improve the EU VAT system:

- Equal treatment of Member States in setting VAT rates;
- Elimination of foreign EU VAT obligations for small enterprises.

3.1. Equal treatment of Member States in setting VAT rates

At the moment, VAT rules agreed by all EU countries allow for two distinct categories of products to benefit from a reduced VAT rate of as low as 5% in each country. A number of Member States also apply specific derogations for further reduced rates.

The proposed definitive regime is based on taxation at destination instead of origin, as initially envisaged. Restrictive rules on the application of rates are therefore no longer essential to avoid distortion of competition.

The new rules will give all EU Member States flexibility to apply the following reduced rates to products and services:

- 2 separate rates to be set between 5% and the standard rate
- 1 rate to be set between 0% and the reduced rates
- 1 rate of 0%

The current list of goods and services to which reduced rates can be applied will be abolished and replaced by a new list of products to which the standard rate of minimum 15% must always be applied. This list will include products such as alcoholic beverages, gambling, smartphones, precious metals, consumer electronics, weapons, household appliances, tobacco products, fuel, petrol & diesel, weapons, passenger vehicles.

Synthesising, the difference between the current rules and the new rules is reproduced in the table below:

Current rules	New rules
System based on exceptions	System based on general rules
No uniform application of rules	Uniform application across the EU

To safeguard public revenues, Member States must also ensure that the weighted average of all VAT rates applied is at least 12%.

3.2. Elimination of foreign EU VAT obligations for small enterprises.

On 18 January 2018, the European Commission proposed exempting small enterprises (SMEs) from cross-border VAT obligation.

Currently, EU small businesses selling in their own country are exempt from VAT if their sales are below a set threshold. This threshold varies between member states, e.g. €10,000 in France; and £85,000 in the UK. However, when selling in other EU states, SME’s must register and charge local VAT on the first sale. This imposes a VAT compliance cost on small companies and restricts the free operation of the Single Market for SME's.

The EU is now proposing:

- A €2 million revenue threshold across the EU, under which small businesses would benefit from simplification measures, whether or not they have already been exempted from VAT;
- The possibility for Member States to free all small businesses that qualify for a VAT exemption from obligations relating to identification, invoicing, accounting or returns;
- A turnover threshold of €100,000 which would allow companies operating in more than one Member State to benefit from the VAT exemption

4. Conclusions

Under the current EU VAT directive, Member States have the option of applying a maximum of two reduced rates, not lower than 5% to a fairly restricted list of goods and services, which are listed in Annex III of the VAT Directive. Examples of these categories include foodstuffs, water supplies, admission to sporting events and medical care.

Existing reduced rates and derogations will expire upon the introduction of the definitive VAT regime (still being negotiated), and at this time new harmonised and flexible rules will be introduced. In summary, these are:

- Standard rates must remain at 15% or above
- Member states may introduce two reduced rates between 5% and 15%
- Member states will be permitted to implement one zero rate
- A further reduced rate between 0% and 5% may be implemented

In addition to the above, the restrictive list of goods and services to which the reduced rate may apply will be removed, and in its place will be a list of the goods and services to which a reduced rate cannot apply (items such as alcohol, tobacco, smartphones, fuel, precious metals etc.).

The second proposed measure follows up on the *VAT Action Plan towards a single EU VAT area*[3] presented in April 2016 and *the Plans for the biggest reform of EU VAT rules*[4] proposed by *European Commission* in October 2017. Businesses trading cross-border currently suffer from 11% higher compliance costs compared to those trading only domestically. The intended proposals will provide simplification measures (around invoicing, record keeping etc.) for businesses with a turnover not exceeding €2 million and will allow member states to apply thresholds to non-established businesses with a turnover not exceeding €100,000.

These legislative proposals will now be submitted to the European Parliament and the European Economic and Social Committee for consultation and to the Council for adoption.

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[3]http://europa.eu/rapid/press-release_IP-16-1022_en.htm
[4]http://europa.eu/rapid/press-release_IP-17-3443_en.htm

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[1] http://europa.eu/rapid/press-release_IP-16-1022_en.htm

[2] http://europa.eu/rapid/press-release_IP-17-3443_en.htm

[3] https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf

[4] https://www.vatlive.com/eu-vat-rules/eu-vat-number-registration/vat-registration-threshold/?sessionId=1522776716266&referrer=https%3A%2F%2Fsearch.yahoo.com%2F&lastReferrer=www.vatlive.com

[5] http://europa.eu/rapid/press-release_MEMO-13-926_en.htm

THE IMPACT OF BASEL III AGREEMENT ON THE ROMANIAN BANKING SYSTEM

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Abstract: *Basel III Agreement is a set of regulations on the banking system, which aims to ensure the system stability, by applying new standards on the capital level and on the liquidity level adequacy and also, on the reduction of banking risk, implied by the financial crisis. Romanian commercial banks will be forced, by the Basel III Agreement implementation, to reduce the risk of capital, using the balance sheet restructuring and by improving the capital quality. The aim of this paper is to analyze the impact of implementing new capital requirements, stipulated by Basel III Agreement, on the Romanian commercial banks, how they will react to the new standards and the decisions they will be able to adopt to respect the standards.*

Keywords: *Basel III Agreement, liquidity level, commercial banks, capital standards, leverage ratio.*

1. Introduction

The stability and solvency of the banking system are a precondition for proper functioning of the financial system. In order to adapt and increase the flexibility of the current monitoring system, the authorities responsible for international banking regulation have initiated a reform process of calculating necessary capital for risk coverage, through the Basel Committee.

There are many different kinds of risk against which bank's managements need to guard. The major risk is credit risk, which means the risk of counterparty failure, but there are many other kinds of risk which could affect the bank's results, such as investment risk, interest rate risk, exchange risk or concentration risk.

Global economic and financial crises have demostrated numerous weaknesses in banks' risk management practices. Many banks and financial institutions did not have enough capital and the capital which they had, it was not good enough to cover looses suffered. In response, Basel Committee on Banking Supervision (BCBS) has collectively reached an agreement on reforms to „strengthen global capital and liquidity rules with the goal of promoting a more resilient banking sector", which is being referred to as „Basel III".

Basel III focuses on three main areas – capital, liquidity and systemic risk, with their influences on the bank's activities.

The Basel Committee reforms refer both to micro prudential and macro prudential measures[1] and improves a new framework for risk management at the level of banking system.

Thus, at the micro level, Basel III regulates capital adequacy, introducing a higher quality of capital, improves the coverage of the risks, especially related to capital market activities, requires much higher levels of capital to absorb the types of losses associated with crises and a global liquidity standard to supplement the capital regulations.

In addition, the macro prudential elements are: a leverage ratio (like a new element for limiting the volume of debt in the banking system in boom periods), new measures to raise capital levels or drown it down in stress periods to reduce procyclicality and, for global systemic banks, a higher capacity of loss absorbency.

2. Basel III Agreement Requirements

Basel III objectives are broken down in three parts:

- Capital reform
- Liquidity standards
- Systemic risk and interconnectedness

1. Capital reform refers to quality, consistency and transparency of capital base, the risk coverage and leverage ratio. Basel III Agreement requires banks to hold 4,5% of common equity and 6% of Tier I capital. Also, in this part, Basel III introduced “additional capital buffers”:

- A “mandatory capital conservation buffer” of 2,5%
- A “discretionary counter - cyclical buffer”, which would allow national regulators to require up to another 2,5% of capital during periods of high credit growth.

Capital conservation buffer – is intended to ensure that institutions are able to absorb losses in stress periods lasting for a number of years. This kind of capital buffer solves the regulatory paradox after which higher minimum capital should not be used to absorb losses falling below the minimum requirements, leading to a withdrawal of the banking license. With the introduced capital buffers and the associated distribution constraints falling below the requirements, a “softer” regulatory tool is introduced.[2]

The Basel III rules have been implemented in the EU from the beginning of 2014.

Capital requirements fall under the provisions of CRD IV/CRR regulatory package, starting with 2014. These requirements are applicable to all EU member states and establish standardized and uniform rules for covering the risk involved in banking activities. Thus, credit institutions have to respect the own funds requirements:

Total capital of at least 8% of RWA (Risk – weighted assets);

Tier 1 capital of at least 6% of RWA;

CET 1 (Common Equity Tier 1) capital of at least 4,5% of RWA.

[1] Walter, S. (2010),Basel III and Financial Stability, Speech at the 5th Biennial Conference on Risk Management and Supervision, Financial Stability Institute, Bank for International Settlements, Basel, 2010, http://www.bis.org/speeches/sp101109a.htm

[2] Bundesbank (May, 2011): Basel III – Leitfaden zu den neuen Eigenkapital und Liquiditatsregeln fur Banken.

The European Union capital adequacy rules recognize two layers of capital – Tier 1 and Tier 2. Criteria for these instruments are contained in CRR, which will have direct application in each UE member state.

Tier 1 includes only permanent shareholders' equity (common stocks) and disclosed reserves (created or increased by appropriations of retained earnings or other surplus, e.g. share premiums, retained profit, general reserves and legal reserves, and also include general funds – such as a fund for general banking risk in certain EC countries)[3]

Tier 2 under Basel III includes: undisclosed reserves, revaluation reserves, general provisions/general loan-loss reserves and hybrid (debt/equity) capital instruments with a maturity of not less than five years.

Tier 1 can be subdivided into CET 1 (Common Equity Tier 1) and AT 1 (Additional Tier 1).

The capital adequacy indicators in the Romanian banking system remained at high levels, which followed an upward course (Table no.1)

Table no. 1 - Own Funds and Capital Adequacy Indicators *(Percent)*

	2013-Jun.	2013-Dec	2014- Jun
Percent in total own funds	100	100	100
Tier 1 capital	92,5	91,1	87,7
Tier 2 capital	7,5	8,9	12,3
Total capital ratio (a)(› 8%)	14,7	15,5	17,0
Tier 1 capital ratio (›6%)	13,6	14,1	14,9

Source: NBR

(a) – Total capital ratio refers to own funds of the institution, calculated as a percentage of total risk exposure amount. This indicator stood at 17 percent in June 2014, above the requiremqnt level of 8 percent.

(b) –Tier 1 capital ratio is calculated as a percent of total risk exposure value of an institution, and for Romanian banks recorded a high level of 14,9 percent in June 2014.

In the Romanian banking system, the quality of own funds it was always maintained at a high level, complying the requirements set by the CRD IV/CRR regulatory package. The own fund of banks, Romanian legal entities rose by about 13 percent in June 2014 – June 2014 period, as a result of the 20 percent decline of the total volume of prudential filters regulated at national level, in 2014, according to CRD IV regulatory framework, as a result of the capital increases made by shareholders in 2013 and 2014, and of course as an answer of the improvement in the financial performance of banks, during 2014.

Counter - cyclical buffer allows national authorities, like national banks, to require up to an additional 2,5% of capital during periods of high credit growth. National authorities will pre-announce the decision to raise the level of the buffer by up to 12 months, but the decision to decrease the level of the buffer will take effect immediately.

Banks may be able to use in downturns the flexibility provided by the capital conservation buffer, but in the same time, they may prefer to reduce credit extension rather than being subject to restrictions on capital distributions (dividends, share repurchases and

[3]Basel Capital Accord. International Convergence of Capital Measurement and Capital Standards (July 1988, updated to April 1998),

especially discretionary bonus payments to staff) if they do not meet the additional capital requirements.[4]

The new CRD IV/CRR regulatory package supplements the set of capital adequacy indicators calculated based on the total risk exposure amount via the introduction of the leverage ratio.This ratio measures the risk associated with funding sources, other than equity. This is a simple and transparent indicator of the assessment risk which is not the subject to modeling errors and quantifying measures of asset risk associated.

Leverage ratio is defined as:

$$Leverage \quad ratio = \frac{Total \quad assets}{Total \quad equity + Subordinated \quad debt}$$

The leverage ratio is expressed as a percentage, being calculated as an institution’s capital measure (Tier 1capital) divided by that institution’s total exposure measure (the sum of the exposure values of all assets and off-balance sheet items not deducted when determining the capital measure indicator). The exposure value of an asset is its accounting value, remaining after specific credit risk adjustments; additional regulated value adjustments and other own funds reductions related to the assets item have been applied.

A higher value of this ratio means a higher vunerability to negative shocks which lower the value of assets or financing liquidity. An excessive leverage could increase the dependency of a bank regardind the potentially volatile short-term funding sources and to expose it to the risk of increasing funding liquidity.[5]

The leverage ratio was initially introduced as an additional feature, the implementation of which is flexibly decided by supervisory authorities and is expected to become a mandatory measure starting with 2018.

For the Romanian banking system, the leverage ratio level stood at 8% (at the end of 2013) and 7,9% (in June 2014), being calculated based on a methodology established by the NBR, as a ratio of Tier 1 capital to average bank assets at accounting value. These values registered by the leverage ratio reflecting the high capitalization of bank assets at the accounting value, which is a common feature of the countries in the region. (For the banks from France, Italy and Nederlands, which have subsidiaries in Romania, the level of this indicator stood at roughly 5 percent.

2. Basel III introduced new **liquidity standards**, actually 2 required liquidity ratios[6], which promote the resilience of a banking sector:

LCR – Liquidity Coverage Ratio

NSFR – Net Stable Funding Ratio

LCR was published in December 2010 and refers of banks liquidity risk profile. In this way, Basel Committee requires a bank to hold sufficient high-quality liquid assets to cover its total net cash outflows over 30 days. The LCR will be introduced as planned on 1st January 2015, but the minimum requirement will start at 60%, rising in equal annual stages of 10 pp. to reach 100% to 1st January 2019. This plan of introducing LCR (shown below, Table no.2), is made to ensure the ongoing financing of economic activity.

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4 Rafael Repullo, Jesus Saurina – “The countercyclical capital buffer of Basel III: a critical assessment”, CEMFI Working Paper, No. 1102, Madrid, June 2011

5 Bordeleau, E., Crowford, A. and Graham, C. – Regulatory Constraints of Bank Leverage: Issues and Lessons from the Canadian Experience, No. 15, 2009, Bank of Canada

6 http://www.bis.org/publ/bcbs189.pdf

Table no.2 – The plan of introducing LCR

	2015	2016	2017	2018	2019
Minimum LCR requirements	60 %	70%	80%	90%	100 %

Source: NBR

The Liquidity Coverage Ratio (LCR) requires banks to have sufficient high-quality liquid assets to withstand a 30 days stressed funding scenario that is specified by supervisors.

$$LCR = \frac{Stock \ of \ HQLA}{Total \ net \ outflows \ over \ the \ next \ 30 \ calendar \ days} \geq 100\ \%$$

"HQLA" – assets should be liquid in markets during a time of stress and, ideally, be central bank eligible.

Assets are considered to be HQLA if they can be easily and immediately converted into cash at little or no loss of value.

The LCR standard and monitoring tools should be applied to all internationally active banks on a consolidated basis, but may be used for other banks and on any subset of entities of internationally active banks as well to ensure greater consistency and a level playing field between domestic and cross-border banks. The LCR standard and monitoring tools should be applied consistently wherever they are applied.

Net Stable Funding Ratio (NSFR) is a longer – term structural ratio, designed to address liquidity mismatches. It covers the entire balance sheet and provides incentives for banks to use stable sources of funding.

$$NSFR = \frac{Available \quad funding}{Required \quad funding} \geq 100\% \qquad [3]$$

The NSFR has a time horizon of one year and has been developed to provide a sustainable maturity structure of assets and liabilities.

Stable funding means all those types of equity and liabilities expected to be reliable sources of the funds under an extended stress scenario of one year.

This measure implies taking into account certain criteria:

•Notation different profiles of assets and association with their recommended levels of stable resources (depending on their risk)

• New weighting of assets requiring a certain level of funding (according to their risk):

•Between 0% and 5% for cash accounts and government securities

•Between 65% and 85% for personal loans and mortgages

•100% for all other assets

This weighting can be interpreted as a level at which an asset should be financed with stable resources.

New weighting in the quality of financing (according to their stability):

• 100% for Common Equity
• 80% to 90% for customer deposits
•50% for loans with low collateral or unsecured

This weighting can be interpreted as maximum levels at which these resources can finance an asset. This should result in getting more diversified funding by the banks so as not to be dependent on a certain type of resource.

Banks will have to assess the stability of their balance sheet resources as a percentage and the need for funding for individual assets.

Accordingly to the agency theory, the optimal financial structure of the capital results from the compromise between various funding options (equity, debts and hybrid securities) that allow the reconciliation of conflicts of interests between the capital suppliers an managers.[7]

The requirements of Basel III Agreement related on liquidity risk are expected to have impact both upon the internal process in the banks as well as upon the business model.

Organizational impact means[8]: external reporting supplemented by the new liquidity ratios; preparation of a cash flow-based liquidity gap profile; monitoring tools – regular reporting to the supervisory authorities.

On the other hand, the impact of liquidity risk requirements on the business model will be reflected by longer maturities and higher stability of liabilities, as well as reduced term transformation and higher costs for refinancing.

3. Systemic risk and interconnectedness. Systemic risk was a major contributor to the financial crisis in 2008. It can be defined as financial system instability and might be very dangerous, because “a failure of one financial business may infect other, otherwise healthy businesses”[9]. For this reason, the National Bank of Romania is currently considering the possibility of introducing a measure of quantify financial market stress, because isolated vulnerabilities in certain sectors may negatively affect, via contagion effects, the performance of the entire system.

3. Conclusions

If Basel I and Basel II agreements, by their requirements, contributed to a better capitalization of banks, after that it was felt the need to introduce more complex prudential policies, which have led to the decision to develop the new Basel III Agreement.

The new rules introduced by implementing Basel III, will put huge pressure on small banks, in particular in terms of the calculation of the risk. Thus, they will no longer be allowed to grant loans as easily, and one of the categories of customers at risk to lose the SMEs. Under the conditions in which small banks will become inaccessible to the SMEs in search of financing, they will move toward strong institutions. But, as they have not looked very pleased in the last period in to take risks, they will try to do it, most likely, to make a natural selection to customers by increasing the cost of loans.

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[7] Grigore, Maria Zenovia, Stefan-Duicu, Viorica Mirela – “Agency theory and optimal capital structure”, CKS Journal, Bucharest 2013, pp. 862 - 868

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Thus, the implementation of Basel III will have dramatic effects in a market already plagued by limitations on crediting. Basel III is a framing device on the international financial institutions for a set of minimum regulatory requirements, in particular regarding capital, liquidity and leverage. This framework, Basel III, is designed to strengthen the resilience of banks and for the entire banking system, due to the hard lessons learned from the recent financial crisis, having revealed that many banks in the advanced economies were undercapitalized, illiquid and over leveraged. In the same time, "measurement of bank performance involve analysis of both quantitative and especially qualitative indicators, primarily aimed to determinate the soundness of the bank, the extent of its exposure to the various risk categories and especially its level of efficiency."[10]

Basel III Agreement is seen both as an opportunity and as a challenge for banks. This regulatory framework can provide a solid foundation for the next developments undertaken in the banking sector and ensure that excesses made in the past can be avoided. Basel III Agreement will change the way banks manage their risks, but in the same time, the equity management, too.

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INFLATION TARGETING AND MONETARY POLICY RULES

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Abstract: *This paper examines the literature to try to explain the concept of inflation targeting. There are at present two competing monetary policy rules: (1) targeting rules and (2) instrument rules. The objective of this paper is to review the relative merits of these two monetary policy rules. The debate between using either an inflation targeting rule or an instrument rule debate displays the lack of consensus among economists concerning the proper specification and underlying assumptions of the inflation-targeting model which is suited for the analysis of key monetary policy issues. The paper also examines what recent studies have found about the effect of inflation targeting on emerging markets. These studies have shown that inflation targeting has been largely beneficial to emerging markets.*

Keywords: *Macroeconomics; Central Bank; Instrument Rules*

1. Introduction

The theory and practice of monetary policy has evolved in the last fifteen years from monetary targeting to inflation targeting. The instability of the relationship between monetary aggregates and goal variables, such as inflation and nominal income, in both industrialized and emerging market countries led to the diminished role of monetary targeting since 1990. Since the adoption of inflation targeting by New Zealand in 1990, more than 20 countries have also adopted this monetary policy framework. The increasing focus by central banks on an inflation rate target rather than a nominal money growth rate target has directed the research work to focus on answering the question: what are the rules for good monetary policy? There is no clear answer to this question. However, there are at present two competing policy rules: (1) targeting rules and (2) instrument rules. The objective of the paper is to review the relative merits of these two monetary policy rules.

The next section discusses the meaning of inflation targeting as gleaned from the perspectives of the key researchers in this area. Section 3 describes the key objective of inflation targeting. Section 4 analyzes the relative merits between targeting rules and instrument rules. Section 5 gives the conclusions.

2. What Is Inflation Targeting?

Bernanke, *et al.* (1999) defines inflation targeting as a monetary-policy strategy which operates within a more clearly articulated framework that commits in advance the general objectives and tactics (but not the specific actions) of the policymakers. Mishkin (2001) identifies the five elements of inflation targeting: (1) public announcement of medium-term numerical targets for inflation; (2) an institutional commitment to price stability as the primary, long-term goal of monetary policy and a commitment to achieve the inflation goal; (3) an information inclusive strategy in which many variables, and not just monetary aggregates, are used in making decisions about monetary policy; (4) increased transparency of the monetary policy strategy through communication with the public and the markets about the plans and objectives of monetary policymakers; and (5) increased accountability of the central bank for attaining its inflation objectives. However, Friedman (2002) argues that the conceptual logic of inflation targeting is based on the Phelps-Friedman "natural rate" model of aggregate supply which postulates that a tradeoff exists between real outcomes (e.g. employment) and nominal outcomes (e.g. inflation). The monetary authorities can exploit this trade-off over a short-run horizon, but it assumes no such trade-off in the long-run. Thus, the objective of monetary policy is expressed in terms of the inflation variable which the monetary authorities can affect both in the short-run and in the long-run.

In Bernanke's (2003) view, the inflation targeting approach can be broken down into two components: (1) a particular framework for making policy choices, and (2) a strategy for communicating the context and rationale of the policy choices to the broader public. The first component refers to the principles by which the monetary policy committee decides how to set its policy instrument (e.g. a short-term interest rate). The second component refers to the central bank's regular procedures for communicating with the government, the financial markets, and the general public. Bernanke (2003) considers the former component as "constrained discretion" because "it attempts to strike a balance between the inflexibility of strict policy rules and the potential lack of discipline and structure inherent in unfettered policymaker discretion" (p. 2). On the other hand, Bernanke rationalizes the usefulness of the latter component in terms of its ability to reduce uncertainty, focus and stabilize private sector expectations, and develop public support for inflation targeting's approach to policymaking.

Finally, Svensson (2005a) insists that his preferred definition of inflation targeting is composed of the following three elements: (1) an explicit monetary-policy objective in the form of a numerical inflation target with an increasingly explicit concern about the stability of both inflation and the real economy; (2) an internal decision process ("forecast targeting") where projections of the target variables have a prominent role and the central bank sets the instrument rate such that the forecast of the target variables "looks good" relative to the monetary-policy objective; and (3) a very high degree of transparency and accountability to allow detailed external scrutiny of central bank preference.

3. Strict Versus Flexible Inflation Targeting

One concern regarding inflation targeting is whether it ignores traditional stabilization goals. Does excessive focus on inflation result in the disappearance of concerns for output and employment? Svensson (1997, 1999, 2002, 2005a) clarifies this concern by stating that inflation targeting in practice is "flexible" inflation targeting which aims to stabilize inflation around the inflation target and puts some weight on stabilizing the difference between actual output and potential output (the so called "output gap"). Svensson formulated a quadratic intertemporal loss function in period t,

$$L_t = (1-\delta)E_t \sum_{\tau=0}^{\infty} \delta^{\tau} [(\pi_{t+\tau} - \pi^*)^2 + \lambda x^2{}_{t+\tau}] \qquad (1)$$

where δ (0<δ<1) is a discount factor, E_τ denotes expectations conditional on information available in period t, π_t and x_t denote inflation and the output gap in period t, respectively, π* is the inflation target, and λ≥0 is the relative weight on output-gap stabilization. Inflation and the output gap are the target variables with target levels at π* and zero, respectively. In this formulation, the inflation target is subject to choice, but not the output target. Thus, inflation target is the key objective.

Equation (1) describes the scope of inflation targeting depending on the particular value of the parameter λ. If λ>0, it corresponds to flexible inflation targeting, and if λ=0, it corresponds to strict inflation targeting. Svensson argues that there is no existing central bank that practices strict inflation targeting and that real-world inflation targeting is flexible inflation targeting in which the monetary-policy objectives include the stability of inflation around the inflation target as well as stability of the output gap.

4. Targeting Rules Versus Instrument Rules

Recent literature (McCallum & Nelson, 2005; Svensson, 2002, 2003, 2005b) has highlighted the targeting versus instrument rules debate. Instrument rules (sometimes called "nominal feedback rules") are defined as formulas for setting controllable instrument variables in response to current conditions, while targeting rules are classified into two types: (1) general targeting rule (or targeting regime) which is the specification of the central bank's operational objective function; and (2) special targeting rule which is an optimality condition implied by an objective function together with a specified model of the economy. At the outset, the differences between the two rules, in general terms, must be stressed. Targeting rules are assumed to possess the following characteristics: (1) while it precommits the authorities to a policy objective, the means by which the objective is to be achieved are still left to the discretion of the authorities; (2) inflation targeting replaces vague policy commitments of authorities with a clear, quantifiable commitment to the inflation rate; (3) the adoption of inflation targeting can facilitate the imposition of formal or informal sanctions on the central bank, should it fail to keep the inflation target. On the other hand, instrument rules are assumed to have the following characteristics: (1) it is simple and is a function of a small subset of information available to the central bank; (2) it commits the central bank not only to the attainment of a specific objective, but it also commits the central bank to how it is going to achieve that objective; and (3) it is a useful way of thinking about monetary policy as it allows departure from the rule when the economy is exposed to external shocks or economic crisis. (McCallum & Nelson, 2005; Svensson, 1997, 1999, 2002, 2003).

The problem of instability of the money-inflation relationships had downplayed the importance of instrument rules using monetary aggregate as an instrument such as Friedman's (1960) constant money growth rule and the instrument rules suggested by Meltzer (1987) and McCallum (1987, 1988) which use the monetary base as the instrument. However, McCallum (1999) illustrated, using an unconstrained VAR model, the superiority of monetary base instrument compared to the interest rate instrument. Nevertheless, in actual practice, almost all central banks utilize operating procedures that are similar to use of an interest rate instrument. McCallum suggested two reasons for central bank's interest-instrument preference: (1) central banks incorrectly believe that the use of monetary base as instrument induces instability; and (2) central banks as lenders-of-last-resort need to supply base money abundantly in times of increased demand for base money.

The best-known instrument rule is the Taylor Rule (Taylor 1993, 1999a, 1999b) where the instrument rate responds only to the inflation and output gaps. Svensson (2003) restates the Taylor rule according to the following:

$$i_t = \overline{f} + f_\pi(\pi_t - \pi^*) + f_x x_t \qquad (2)$$

where i_t is the nominal interest rate in period t; $\overline{f}$ is a constant which is equal to the sum of the average short-term real interest rate and the inflation target; (π_t -π*) is the inflation gap, where π_t is the rate of inflation and $\pi^* \geq 0$ is the inflation target, $x_t = y_t - y_t^*$ is the output gap, where y_t is (log) output and y_t^* is (log) potential output. The coefficients f_π and f_x are positive.

Taylor (1993, 2000) suggested that the instrument rules should be seen as mere guidelines for monetary policy. Svensson (2003), however, argues that this makes the rules incomplete because "there are no rules for when deviations from the instrument rules are appropriate" (p. 428). He further argues that the idea of simple instrument rules as mere guidelines for monetary policy is too vague to be operational. Although Svensson insists that no central bank has made a commitment to a simple instrument rule like the Taylor rule (or announced a particular instrument rule as a guideline), there are opposing views which believe that the behavior of both the U.S.' Federal Reserve Bank and Germany's Bundesbank over the last 15-20 years fits the Taylor rule. Svensson (2003) suggests that the concept of monetary-policy rules has to be defined as a prescribed guide for monetary-policy conduct and that the monetary-policy practice is better discussed in terms of targeting rules than instrument rules because the former specifies the objectives to be achieved, by listing the target variables, the targets for those variables, and the loss function to be minimized. In addition, Svensson argues that a commitment to targeting rules has the advantages of allowing the use of all relevant information (e.g. the use of judgment) and being more robust to both disturbances and model variation than instrument rules.

In an earlier paper, Svensson (1997) makes a pitch for a commitment to targeting rules over a commitment to instrument rules. In this paper he shows that inflation targeting implies inflation forecast targeting in which the central bank's inflation forecast becomes an explicit intermediate target and results in an endogenous optimal reaction function expressing the instrument as a function of the available relevant information. In contrast, an instrument rule directly specifies the reaction function for the instrument in terms of current information.

While Svensson (1997) expresses preference for targeting rules which specify target values but not instrument settings, McCallum (1999) clarifies that a monetary policy rule is by definition a formula that specifies instrument settings. Svensson (1999) argues that inflation targeting can be interpreted as a targeting rule with a relatively explicit loss function to be minimized, and this loss function also contains concerns about the stability of the real economy. In Svensson's words, "the targeting rule can also be expressed as an intermediate-targeting rule, ‘inflation-forecast targeting’, where the conditional inflation forecast is the intermediate target variable” (p. 648).

Svensson (2002) states that a simple instrument rule, like the Taylor rule, can have some advantages such as: (1) it can easily be verified by outside observers and a commitment to the rule which would therefore be technically feasible, and (2) variants of the Taylor rule have been found to be robust to different models. On the other hand, Svensson (2002) describes its disadvantages: (1) the rule will not result in an optimal outcome because it responds only to a small subset of the information about the economy available to the central bank, and it imperfectly allows responses to lagged shocks (2) the rule is incomplete because it provides no rule for departures from the rule when good judgment calls for deviation from the rule; and (3) no central bank has made commitment to follow a Taylor-like rule. Svensson (2002) concludes that a simple instrument rule is unsuitable both as description of and prescription for inflation targeting. He believes that inflation targeting is better described and prescribed as a commitment to a targeting rule which specifies operational objectives for monetary policy or which specifies operational Euler conditions for monetary policy. He suggests that an optimal targeting rule expresses the equality of the marginal rates of transformation and the marginal rates of substitution between the target variables in an operational way, and future research should be pursued along this line.

McCallum and Nelson (2005) point out that “the most critical problem with specific targeting rules is that they are obviously model-dependent…a condition that implies optimality in one model may be highly inappropriate under other specifications” (p. 599).

Svensson (2003) describes four main objections to instrument rules: (1) the simple instrument rule may be far from optimal in some circumstances. In particular, Taylor-like rule is not optimal because it contains no other important variables than inflation and the output gap; (2) a commitment to an instrument rule does not leave any room for judgmental adjustments and extra-model information; (3) a once-and-for-all commitment to an instrument rule would not allow any improvement of the rule when new information about the transmission mechanisms, the variability of shocks, or the source of shocks arrives; and (4) commitment to a simple instrument rule is far from an accurate description of current monetary policy as practiced by inflation-targeting central banks, and no actual central bank has announced or committed itself to an explicit instrument rule.

McCallum and Nelson (2005) respond to Svensson’s four objections to the instrument rule: (1) Taylor rules do not comprise the entire class of simple instrument rules. The absence of other state variables in the instrument rule is not quantitatively or qualitatively important; (2) There are various ways of incorporating judgment into instrument rules (3) Woodford’s (1999) timeless perspective type of commitment does permit modification of rules when new information is developed; (4) no actual central bank has announced or committed itself to an explicit objective function which is a necessary condition for either the general or the specific type of targeting rule. In contrast, description of policy procedures of actual inflation targeting central banks (e.g. Reserve Bank of New Zealand, the Bank of Canada, and the Bank of England) read more like instrument rules than specific targeting rules.

Svensson (2005b) replies that: (1) there is a growing literature by many authors that successfully applies targeting rules to monetary policy analysis; (2) nothing says that a simple and robust monetary policy rule must be an instrument rule; (3) the forecast targeting process and implementation of monetary policy is very different from the mechanical application of the simple instrument rules; (4) an instrument rule analog with a large coefficient makes the instrument rate very volatile, thus an instrument rule is conceptually and numerically inferior to the targeting rule, and is not neutral from a determinacy point of view; and (5) the optimal targeting rule is simply the equality between the marginal rates of substitution and transformation (e.g. MRS = MRT) between the target variables (e.g. inflation and output gap). This relation is model independent.

5. Implementation of Inflation Targeting

Amato and Gerlach (2002) found that inflation targeting is a useful strategy for emerging and transition economies. They point out that there are some conditions that need to be met in order for inflation targeting to be effective. First the country implementing inflation targeting needs to have an independent central bank. Second there needs to be sound fiscal policy. Third the economy must be resilient enough to withstand changes in interest rates and exchange rates. Lastly there is a need for econometric models of the inflation process and the transmission mechanism since inflation targeting is a forward-looking process. They also found two issues that affect emerging market economies that implement inflation targeting. The first issue is how inflation targeting can coexist with exchange rate objectives. The second issue is how will the inflation target be specified.

Aizenman et al. (2011) examined the inflation targeting experiences of several emerging markets. They found out that there is a significant and strong response running from inflation to the policy interest rate in countries that publicly announce inflation targeting policies. They also found out that countries that do not perform inflation targeting place less emphasis on inflation when setting interest rates.

Table 1 List of Selected Countries That Have Implemented Inflation Targeting

Country	Year of Adoption	Initial Inflation (%)	Final Inflation (%)	Percentage Point Change
Brazil	1999	8.7	7.9	-0.8
Chile	1991	21.8	7.2	-14.6
Colombia	2000	22.8	6.9	-15.9
Czech Republic	1998	3.8	3.5	-0.3
Hungary	2001	15.3	5.9	-9.4
Israel	1992	17.2	6.1	-11.1
Mexico	1999	21.8	7.2	-14.6
Peru	1994	48.6	6.6	-42.0
Philippines	2002	11.3	5.0	-6.3
Poland	1999	22.8	4.5	-18.3
South Africa	2000	12.3	5.2	-7.1
South Korea	1998	7.4	3.4	-4.0
Thailand	2000	5.4	2.2	-3.3

Source: Goncalves and Salles (2008)

Table 1 shows several countries that have implemented inflation targeting during the 1990s and 2000s. These countries have shown decreases in their inflation rates after the implementation of inflation targeting. Goncalves and Salles (2008) found that even accounting for mean reversion, the inflation rate fell more for countries that have implemented inflation targeting as opposed to those that did not. Their findings found out that the inflation targeting regime is beneficial to emerging economies.

Taguchi and Kato (2010) examined four Asian economies (Indonesia, South Korea, Thailand and the Philippines) that used inflation targeting following the 1997-1998 Asian financial crisis. They found that inflation targeting worked well to rein in inflation in all of the economies except the Philippines. The inflation targeting mechanisms these countries adopted also led to increased monetary autonomy.

6. Conclusion

This paper highlights the lack of agreement among economists on certain issues concerning monetary policy rules. The targeting rule-instrument rule debate shows the lack of consensus concerning the appropriate specification and underlying assumptions of the inflation-targeting model suitable for analysis of key monetary policy issues. Thus, the realistic conclusion is simply that different models lead to different alleged implications for monetary policy.

This paper also examined recent literature on the implementation of inflation targeting in emerging economies. The studies examined in the paper found that inflation targeting has been largely beneficial to emerging markets.

Two possible areas for future research are (1) studies searching for a rule that works well in a variety of models (the Taylor-McCallum approach), and (2) studies searching for an optimal rule relative to a particular model (the Svensson approach). Both approaches emphasize the importance of operationality of any proposed rule.

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BREXIT: CHALLENGES FOR EUROPE[1]

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Abstract: *Brexit poses two main challenges for the EU: an immediate challenge, and a longer-term one. The immediate challenge concerns whether the Article 50 negotiations will lead to the signing of an agreement on a mutually acceptable basis, as a cliff edge scenario would cause enormous immediate damage to sectors exposed to international co-operation both in the EU and the UK. In the longer term, Brexit would inevitably force the EU to face a fundamental choice between pursuing further and deeper integration or putting it on hold, or even reversing it in certain areas. Since negotiations on the future relationship between the UK and the EU and those on the EU's next multiannual financial framework (i.e. the so-called MFF 2021-2027) are overlapping, this paper aims at casting a light on the interlinkage of these two processes and on the interests that lie behind them.*

Keywords: *Brexit, Multiannual financial framework (MFF), integration, disintegration*

1. Introduction

Thursday 23 June 2016, the day when the so-called EU referendum took place and the United Kingdom voted to leave, undoubtedly represents a milestone in the history of the European Union: after decades of continuous deepening and consecutive enlargements, this was the first time people of a sovereign member state decided to leave the integration. Although it is not yet clear what Brexit means or how it will come about (e.g. what form the UK's post-Brexit trade relationship with the EU might take), the withdrawal process by itself is a rare moment of truth in that it brings interests of the different players (member states, Commission, sectors, businesses) to the table and provides opportunity to engage in a stocktaking exercise and consider alternatives for Europe's future.

This paper tries to assess the differences in viewpoints and interests of the main stakeholders for the proper understanding of the Brexit negotiations. Special attention will be paid to the relationship between Brexit and the current MFF negotiations. We conclude the analysis with the presentation of various scenarios for the outcome of the withdrawal process.

[1] Paper presented at the 12th Hungarian-Romanian round table, Bucharest, October 11, 2018.

2. Neither hard nor soft Brexit is suitable

In this section, we attempt to highlight a matter of significant controversy that is almost impossible to resolve: namely that for the relatively underdeveloped EU member states neither a hard Brexit, nor a soft Brexit could fit in with the Commission's budget proposal for 2021-27. To address this controversy, the analysis is carried out in two strands: the first is an assessment of the different perceptions and interests regarding the UK withdrawal from the European integration, while the second is a bit more creative discursive approach, which examines the possible linkages between Brexit and the next multiannual financial framework (MFF 2021-27) viewed from the EU's periphery[2] perspective.

2.1. Interests and negotiating stances

On June 23, 2016, people of the United Kingdom voted for Brexit. The assessment of differences in Brexit-related interests is delivered at four planes: between capital and labour, big corporations and small and medium-sized enterprises, central government and devolved administrations, and the United Kingdom and the rest of the EU (EU27).

It is a fact that Britain's businesses have, since the mid-1990s, gained significant competitive advantage through the use of vast supplies of cheap labour (both skilled and unskilled) entering the country first from the Indian subcontinent and Southeast Asia, then, in the context of the Eurozone crisis and successive Eastern enlargements, from the EU's Southern and Eastern periphery. Since Brexit is supposed to end free movement, i.e. the influx of new cohorts of low-price workers from the EU27, this might consequently lead to an increase in wage level of the domestic labour force. As a matter of fact, in parallel to a general downturn in labour inflow since referendum and unemployment staying at 4 percent (a 43-year low), growth in wages has already begun: regular pay was 3.1% higher in three months ending in August 2018 than in the same quarter in 2017, the highest growth rate since December 2008 (Elliott, 2018).

More generally, an obvious antagonism of interests concerning Brexit exists between the rich and the poor. In the case of a hard Brexit, for example, prices on the property market are likely to grow at a slower pace or even fall (especially in metropolitan areas and great university cities), which is bad news for homeowners who have enjoyed rising prices for years, but a good one for renters and a whole generation who have rightly felt they were cut off from the property ladder by ever increasing and unaffordable prices. Another important aspect is the development of food prices which are prone to fall. As a result of the Common Agricultural Policy and the consequent high tariffs placed on food imports, consumer food prices in the UK are pushed up by approximately 17 per cent above the level they otherwise would be, i.e. outside the EU's protectionist customs union (TaxPayers' Alliance, 2018).

Having all this in mind, it is small wonder that in terms of income stratification these are the poorest (i.e. the lowest and the second lowest) deciles, spending relatively more on food and housing, who would most benefit (and gain an extra £36 and £44 a week

[2] EU periphery consists of countries entering the EU in 2004, 2007 and 2013 (except for Malta and Cyprus), plus Greece, Spain, Portugal and Ireland.

respectively) from a clear Brexit (Leave Means Leave, Labour Leave and Economists for Free Trade, 2017).

The next type of conflict to be dealt with is between large corporates on one hand and small and medium-sized enterprises (SMEs) on the other. As the former are more likely to participate in international trade, for them unfettered access to the European single market is of fundamental importance. However, EU legislation and directives have to be observed by the latter, too. While regulations impose costs of compliance on all types of businesses, these costs do not fall equally on them. SMEs have to deal with relatively higher pro rata costs than big companies for several reasons. First, these costs are mostly fixed, hence more difficult to be absorbed over a lower turnover base than a larger one. Second, as SMEs generally are more price takers than price makers, unlike big companies, they can hardly pass onto their customers the costs incurred in complying with EU regulations (Chittenden, Ambler, 2015).

The third type of incompatibility of interest exists between London and the devolved administrations of Scotland, Wales and Northern Ireland. Sensibilities arise from the fact that Brexit presents a fundamental constitutional challenge to the United Kingdom as a whole. The devolution settlements were agreed after the UK had become an EU member, and the devolved legislatures only got legislative competence in the devolved areas – such as support for agriculture and fisheries, state aid for industry, public procurement, environmental standards, management of radioactive waste, and some transport issues – as long as the rules created by them were compatible with EU law (UK Government, 2017). So, in practice, the responsibility for these policy areas has largely been excised at EU level for the last couple of decades. However, if there were no changes to the devolution settlements, the whole responsibility for the above mentioned areas would automatically fall back to the devolved jurisdictions at the moment of Brexit, which could potentially lead to regulatory divergence, and thus – by altering the competitive neutrality – undermine the integrity of the UK's internal market (UK Parliament, 2017).

This is why the UK government was half-compelled, half-inclined to abuse of its exclusive competence to conduct international negotiations (i.e. negotiating on behalf of the devolved), and to arrange matters in a way that powers – which were, in the context of Brexit, to be repatriated from the EU to the UK and might have gone to Belfast, Cardiff and Edinburgh – would, at least temporarily, be diverted to London. The European Union (Withdrawal) Act 2018, first proposed under the title of "Great Repeal Bill" in 2016, which – apart from providing for repealing the European Communities Act 1972, is destined to secure legal continuity by transposing directly-applicable already-existing EU law into UK law – does, in the topic of devolution, apply a temporary 'freeze' on the devolved administrations "*in specified areas, so that in those areas the current parameters of devolved competence are maintained*" (Department for Exiting the European Union, 2018). This means that the devolved institutions will temporarily be able to modify retained EU law only in ways that remain consistent with the underlying directive. This also limits the power of the devolved governments by making it impossible for them to retain a piece of EU law that has been modified by London, even if their consent is generally needed for such modification to happen. Freezing powers will expire two, the regulations themselves five years after Brexit day, if not revoked earlier.

All this power re-centralisation to London, made in the name of dealing with correcting deficiencies, international obligations and the ability to implement any withdrawal agreement, caused much disappointment amongst the devolved who originally believed they were going to get their rights back faster. The situation is all the more delicate as there are no such things as devolved “English Parliament” or “English Government”, the UK parliament and the UK government also operating as parliament and government for England. On top if this duality, in the case of certain devolved competences, there are clear differences in interests between England and the rest of the UK. In agriculture, for example – flowing from differences in natural endowments (the share of “areas of natural constraint” being 85 percent in Scotland, 81 in Wales, and 70 in Northern Ireland, while only 17 percent in England), but also from differences in farm and production structure (England being dominated by large, productive farms largely present in profitable horticulture, while small farms being predominant in Wales and Northern Ireland, and big but extensive ones in Scotland) – farmers in the devolved nations are much more dependent on CAP subsidies (between 75 and 87 percent of farm income coming from CAP) than in England (around 50 percent) (Keating, 2018).

Having all this in mind, as well as the prospect of phasing out direct payments by 2027, drafted in UK’s new agricultural Bill of September 2018 (UK government, 2018), there is room for thinking that UK policymaking is influenced by the needs of agriculture in England, rather than those in devolved nations. Consequently, it would be a most critical step towards creating a climate of trust if the existing population-based method of allocation of funding to the devolved (the so-called ‘Barnett formula’) were replaced with a more appropriate, needs-based funding arrangement. Only in such a way could the devolved be compensated for the loss of EU funding, caused by Brexit in the long-term. No wonder: a report to the House of Lords found the impact of Brexit on UK’s devolution settlements to be incontestably “*one of the most technically complex and politically contentious elements*” of the whole withdrawal process (UK Parliament, 2017).

Finally, there are differences in interests between the United Kingdom and the EU27 who are being represented by the Commission in Brexit negotiations. Normally, there should not be any major conflicts, as both sides are supposed to serve the interests of their electorate, hence focus on protecting jobs and businesses. By contrast, enduring differences in negotiating parties' main objectives and, consequently, their negotiating stances make the achievement of this logical and coherent set of goals, at the least, challenging. What is it all about?

The British, given their confidence in the long-run potential of their economy, prioritise a bespoke agreement, “*securing the freest and most frictionless trade possible in goods and services between the UK and the EU*” (UK Government, 2017). But the main purposes (and promises) of Brexit – i.e. taking back control over laws, borders, and money, which consists of ending the jurisdiction of the European Court of Justice in, the free movement of workers to, and the substantial funding of the EU budget by the UK – seem to be in stark contradiction to the European Council’s guidelines for the negotiations. The latter do not only say that – departing from the integrity of the single European market and the inseparability of the four freedoms (i.e. the free movement of goods, capital, services, and labour) – they consider “*cherry picking*” any attempt aiming at an "à la carte" divorce, but rather argues that „*a non-member of the Union … cannot have the same rights and enjoy the same benefits as a member*” (Consilium, 2017). In other words, the Commission cannot let the UK profit from leaving the EU with an advantageous deal, because if Brexit is not deterrent enough, regarding its consequences for the British economy, to stop other member states from reconsidering their own situation within the integration, this could lead to further disintegration, and eventually to the end of the European project.

2.2. MFF 2021-27 and Brexit

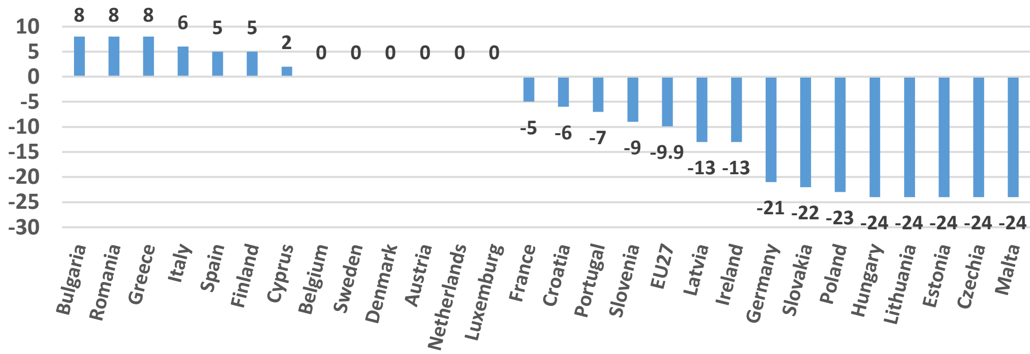
On May 2, 2018, a draft proposal for the Multiannual Financial Framework (MFF) covering the next seven-year period (2021-2027) was published by the Commission. The very essence of the MFF is to design the structure of, and set ceilings for the annual EU budgets of the forthcoming (post-2020) seven-year period. In other words, it determines the yearly amount of funds that can be spent on each and every of the common policies and programs (adding up in the so-called headings). According to EU tradition, annual limits to spending under the different budget headings are expressed in two forms: as commitments (i.e. legally binding promises to spend money) on the one hand, and payments (i.e. actual amounts authorized for disbursement from the EU budget in a given year) on the other hand.

The draft also deals with the revenue side of the EU budget by proposing changes to the structure of the so-called Own Resource System (ORS), and the way in which its components are calculated. Although, unlike MFF regulations, decisions on ORS apply indefinitely rather than for specific MFF periods, now a need arises to reshape the ORS for the post-2020 period with Brexit making redundant the British rebate, as well as the related correction mechanisms. Both MFF and ORS are decided by the Council acting unanimously; but while a decision on the MFF demands the consent of the European Parliament (EP), in the case of the ORS, the EP has only a consulting legislative role. If there is no agreement, everything goes on according to the rules of the previous budgetary cycle, which means that one twelfth of the budget appropriations for the previous year may, as a maximum, be spent each month for any chapter of the common budget.

As for the Commission’s basic document (European Commission, 2018a) with regard to the next MFF, there are two important and interrelated issues that deserve attention. First, Commission’s proposals are based on the assumption of a hard Brexit as they do not include a contribution from the United Kingdom. Second, while there is no significant change in the size of the budget, its structure is transformed: significantly more funds will be available under headings deemed to support investment in modernization (research/innovation/digitization, youth/education, climate and environmental protection), and in programs which are politically unavoidable (migration/border protection, security policy). Meanwhile – as the press release accompanying the Commission's proposal (European Commission, 2018b) states – a moderate reduction of approximately 5 percent would apply to both the Common Agricultural Policy (CAP) and Cohesion Policy (CP), compounded by a proposed increase of national co-financing rates. In the view of the Commission, the hole in the budget resulting from the United Kingdom's departure should be plugged partly by new resources (drawn from the relaunched Common Consolidated Corporate Tax Base, revenues of the EU’s Emissions Trading System, and contributions calculated on the amount of non-recycled plastic packaging waste), and partly by savings (e.g. from halving the amount member states can keep when collecting customs duties) and redeployments from existing (i.e. CAP and CP) programmes (European Commission, 2018a).

The point is that the decrease of 5 percent in funds available for the CAP and CP is calculated in current prices, but in practice a change of a quite different order of magnitude is to be expected. Concerning cohesion spending, countries in EU’s periphery, especially those of Central Europe and the Baltic region having entered the EU in the 2004 enlargement round, would be badly affected: in their case, allocations available within the cohesion policy framework could, in real terms, typically be reduced by between 22 and 24 percent (Figure 1). However, it is to be remembered that all these member states belong to the bottom half of the ranking for their average GDP per capita, and not less than 4 Hungarian and 5 Polish regions happen to be among the 20 poorest in Europe (Eurostat, 2018).

Figure 1 Planned changes in Cohesion Policy allocations by Member States (%) for 2021-2027



Source: Lemaitre (2018).

With regard to agricultural subsidies, the proposed 5 percent reduction in current prices for the period of 2021-27 (vis-a-vis the period of 2014-20) corresponds to a decrease of more than 16 percent in real terms at a yearly average. And, by the end of the next MFF, the support level could fall by more than 28 percent below to what it was 20 years earlier (i.e. from €61.3 bn in 2007 to €44 bn in 2027) (Carles, 2018). At this point of the analysis, it should be recalled that EU rules concerning the single market and the Common Agricultural Policy (CAP) were applied rather selectively in countries acceding to the EU since 1995, and especially most ungenerously in countries of the several rounds of Eastern enlargement. At the time of the so-called the EFTA enlargement, due to the already existence of the single market, farmers in the new member states (Austria, Sweden and Finland) became immediately (i.e. from the very first year of membership) eligible to receive all CAP support. By contrast, agricultural direct subsidies were fully extended to the new member states of Central and Eastern Europe (plus Malta and Cyprus) only at the end of a 10-year transitional period. In addition, by the time their payments reached 100 percent of the level they were eligible to apply for under normal regime (i.e. by 2013), CAP reform containing successive reductions in direct support had already been under way. This tendency is to be accelerated in the future, if Commission’s proposals for post 2020 CAP are accepted.

If we have a look at the data which have already been published by Eurostat (i.e. for the period of 2014-17) concerning expenditures from the current MFF (2014-20), we can see that peripheral countries can typically draw on a much higher proportion of the cohesion and agricultural money than on those available under the competitiveness (especially research/innovation) headings (Table 1). This means that the Commission is vainly trying to reallocate an ever-growing share of the budgetary resources towards programs representing modernity and progress, and allegedly more effective in this respect than the cohesion and agricultural policies, if the EU periphery is not competitive enough to win masses of those grants.

To sum up: given that disparities in wages and living standards among member states of the East and West of the EU have remained significant, and there is, since the 2008 crisis, a widening gap between the North and the South too, Commission’s proposals concerning

EU budgetary spending on cohesion and agriculture for the next MFF (2021-27) do not seem to set an example of solidarity, as, if accepted and codified, they would further reduce rather than increase the funding for programs which can relatively more easily be made good use of by the less developed.

Table 1: Peripheral countries' share in EU budget expenditure on different common policies (2014-17)

Common policies (1)	Periphery countries (P) (2)	P without Spain (3)	P (4)	P without Spain (5)	P (6)	P without Spain (7)
Competitiveness for growth and jobs	13,6%	8,2%	1,00	1,00	-	-
Horizon 2020	10,7%	5,8%	-	-	1,00	1,00
Economic, social and territorial cohesion	64,8%	56,3%	4,77	6,88	6,06	9,70
Common agricultural and fisheries policies	35,1%	26,3%	2,58	3,22	3,28	4,53

Note: Periphery (P) consists of 15 countries of which Spain is just one. Spain is relatively bigger and more successful in obtaining money from different EU policies (for instance Competitiveness, especially from Horizon 2020) therefore columns 2 and 3 underscore how small the Periphery share would be without reckoning Spain in it. Columns 5 and 7 show how many times the Periphery (without Spain) can obtain more money from CAP or CP than from Competitiveness or Horizon 2020. Results are considerably higher than in columns 4 and 6 respectively (with Spain).

Source: European Commission (2018c).

What may make it even more difficult for the EU periphery to accept Commission's draft proposals for the next MFF is the prospect of a 'hard Brexit'. The latter can obviously cause serious damages to existing trade relations between the United Kingdom and the EU27. Namely, supply chains (e.g. in the automotive industry) and the whole agri-food business could be hit very hard, as some member states of the EU periphery depend heavily on exports to Britain directly or indirectly (e.g. through the German automotive industry).

Interestingly, it is unlikely that a 'soft Brexit' would for the peripheral countries be any more acceptable than a hard one, if it meant the United Kingdom could continue to have access to the European single market without having to continue with its huge annual financial contribution to the common budget – one of the core issues of the referendum. As a matter of fact, at the time of previous enlargements and/or deepening of the integration process, less developed countries of the periphery used to seek and receive significant compensation from the common budget in exchange for further market liberalization.[3]

[3] E.g. accessions of Spain and Portugal in 1986 were threatened by a Greek veto if the integration did not adopt special programs to protect its farmers from the impending competition coming from the new entrants. The Integrated Mediterranean Programs, designed to help southern regions of the then Community (including the whole of Greece) to adjust to the new situation, were based on provisions that would later become the core of the Cohesion policy. By the same token, the Cohesion Fund was created in order to counter a threat carried out by four governments of the integration periphery (namely those of Spain, Portugal, Greece and Ireland) to veto the Maastricht Treaty unless a new financial instrument was

That is, with such a soft Brexit, a traditional principle would be harmed, and the interests of the periphery would be damaged.

3. What sort of Brexit is likely to emerge?

To understand what has happened with British withdrawal so far, and why, it is important to see that the interests of the economic-political-media-scholar/adviser elite, the Establishment in both Britain and the EU27, would be very adversely affected by any sort of Brexit. The latter is commonly perceived as a dangerous precedent, a first chapter of a potential disintegration of the European Union. Therefore, since the beginning of the exit process, there has been a consistent endeavor of both elites to soften/ignore the main claims of the Leave campaign (i.e. regaining control over laws, borders, trade and money), and demean and discredit politicians and experts working for a clean Brexit (i.e. the UK leaving both the single market and the customs union). This is no wonder if we keep in mind that, in Britain, the withdrawal negotiations and the whole process is overseen by a prime minister who voted Remain, and her cabinet where two third of the ministers did so.

Prospects for a clean Brexit have dimmed right from the very beginning of the withdrawal (so-called Article 50) negotiations, as the British team agreed to adopt the phased approach advocated by the Commission. This meant that talks could not start on future relationship between the EU and the UK until there was not sufficient progress on the main withdrawal issues (i.e. citizens' rights, exit bill, the Irish border, and some others)[4].

Chances for a correct deal were further weakened in December 2017, when the negotiating parties published the so-called Joint Report, containing a backstop clause which would ensure unrestricted flow of trade and people through the land border between Northern Ireland and Ireland even in the absence of an agreement on future relations. The backstop meant that Northern Ireland would remain in the EU's trading and regulatory system, which would compromise the integrity of the UK's internal market.

The Chequers Plan, a key white paper presented by the UK government in July 2018, can be seen as the ultimate blow to a clean Brexit. According to the plan, the United Kingdom should continue to respect the EU regulations for goods (including agri-foods), state aids and competition policy without having a say over them, and would remain under the jurisprudence of the European Court of Justice (at least for the interpretation of the European case law) forever. The publication of the Chequers Plan provoked the resignation of both foreign secretary Boris Johnson, and Brexit secretary David Davis, two of the few Brexiteers in the Theresa May cabinet.

In the light of the above, it is not surprising if, according to the present situation, in late October 2018, chances for a very soft Brexit are gaining ground. The United Kingdom's withdrawal from the EU is likely to take place only after a protracted transition period, if ever. During the transition, the country would, as a quasi-member state, virtually remain subject to every law and regulations of the European Union (single market, customs union, etc.) without being able to have an impact on them. Such a protracted

established to help the less developed member states in their efforts to meet the criteria of the would-be single market (Brunazzo, 2016).

[4] Nobody seemed to be bothered by the impossibility of the mission to agree on the openness of the Irish border without knowing what sort of trade relations would link the two sides of the border.

version of Brexit would certainly suit to the most influential actors of the European economy, but leave millions of British voters frustrated and unsatisfied. Therefore, it cannot be ruled out that the process gets complicated, slowed down or even interrupted because of unforeseen changes in UK home affairs. This might lead to Britain leaving the bloc without a deal and falling back on WTO rules for trade with the EU, or sorting out a Canada-style free trade agreement following an agreed extension of the Article 50 negotiations.

4. Conclusion

The withdrawal of the United Kingdom from the European Union seems to be a complex and difficult process in itself. As a matter of fact, negotiations are overlapping with those, not less complex and complicated, about EU's Multiannual Financial Framework for the post-2020 period. Today, nobody can with certainty predict the outcome of either of the processes. However some sort of solution will sooner or later appear on the horizon in both cases. Only one thing is sure: either hard or soft Brexit takes place, countries of the EU periphery had better to wait for the end results of the withdrawal negotiations, and only then when the Brexit process will have unfolded to enter the substantive part of the discussion over the proposals for the 2021-27 MFF.

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A RECONFIGURATION OF SINO-EU RELATIONS UNDER NEW CIRCUMSTANCES?[1]

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Abstract: *The present paper focuses on four research objectives. First, it reflects how the interactions in the US-EU-China triangle impact on the Sino-EU relations. The renewed evidence of American unilateralism represents the most recent and significant factor influencing the relationship between China and the EU. As emphasized by the Joint Communiqué adopted at the 20th EU-China summit which took place in July 2018, China and the EU are committed to multilateralism. Both sides seem ready to make more concessions now, even if the EU still remains closer to the US than to China due to the complex system of their corresponding political values and economic models. Second, the analysis underlines changes at the level of another recent determinant of Sino-EU relations, namely the 16+1 cooperation framework. Notwithstanding China's endeavours to demonstrate that 16+1 is not against the EU unity and its economic objectives, this framework is still seen as a "divisive" factor. Third, starting from the EU's objective to become a global player and from the evidence that nowadays no entity can have this status in the absence of a strong presence in the Indo-Pacific region, this research briefly emphasizes the actual system of relations in Asia-Pacific under the recent American Indo-Pacific vision. Fourth, the investigation adds a case study and points out various intensities of cooperation with China among the Central and Eastern European (CEE) countries, Hungary revealing the strongest political will to consolidate its ties with China, while Romania maintaining its "wait-and-see" attitude. Given the growing uncertainty surrounding the system of international relations and increasing protectionist trends, the paper concludes that China and the EU benefit from a unique moment, which might be conducive to a deepening of their strategic partnership.*

Keywords: - *China, EU, strategic partnership, United States, unilateralism, Indo-Pacific vision, Belt and Road Initiative, 16+1*

1. Introduction

Taking into account the growing uncertainty surrounding the system of international relations, increasing protectionist trends and resurgence of American unilateralism, both China and the EU have demonstrated in their Joint Communiqué adopted at the 20th EU-

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[1] Paper presented at the 12th Hungarian-Romanian round table, Institute for World Economy, Romanian Academy, Bucharest, October 11, 2018.

China summit of July 16, 2018 that they are ready to make concessions to each other. In a year when the two sides have celebrated 15 years since the launch of the EU-China comprehensive strategic partnership, it has been underlined the commitment towards multilateralism and rules-based international order, but also towards “synergies between China’s Belt and Road Initiative and EU’s initiatives, including the EU Investment Plan and extended Trans-European Transport Networks”. Both partners underscored during the summit the progress achieved in various bilateral dialogues such as those on foreign and security policy, economic and trade relations, finances, macroeconomics, information and communications technology, industry, space cooperation, regional policy, energy, migration but also on thorny issues such as competition and state aid, human rights, intellectual property rights.

However, the EU maintains its critical position regarding China in many aspects and in several occasions it had common positions with the United States and Japan. The present paper is structured around three main sections representing detailed answers to the following questions: (1) What do EU and China expect from each other? (2) Which is the impact of the recent interactions in the US-EU-China triangle on Sino-EU relations? (3) Which are the motivations for the EU member states’ different intensities of cooperation with China?

2. What do EU and China expect from each other?

In 2018, after 43 years of diplomatic relations and 15 years since the launch of EU-China strategic partnership, there still remain various misunderstandings, suspicions and mutual critiques in the bilateral relations. EU recognizes the strong partnership with China and the role played by this market as “the main engine of profitability for a number of EU industries and brands” (EP, 2016), however it has a long list of complaints against China, as underscored by documents such as: the 2016 *EU Strategy on China* (EC, HR, 2016), European Commission’s “Report on significant Distortions in the Economy of the People’s Republic of China for the purpose of trade defence investigations” (EC, 2017) and the “Report on the protection and enforcement of intellectual property rights in third countries” (EC, 2017) and European Parliament’s resolutions (EP, 2018, EP, 2016) (Box 1).

Box 1: EU's critiques expressed in several official documents/proposals/initiatives during 2016-2018

June 22, 2016: European Commission and the High Representative of the Union for Foreign Affairs and Security Policy, *Elements for a new EU strategy on China*;

September 2017: EU Chamber of Commerce in China – *European business in China – Position paper* (402 pages) (e.g. unfair competition, absence of a level playing field, lack of reciprocity in bilateral investment relations);

September 13, 2017: European Commission's proposed framework for *screening* FDI;

December 12, 2017: EU new anti-dumping regulation, the legal basis to evaluate the dumping actions taking into account the "significant market distortions" (EU Regulation 2017/2321 of the EP and the Council amending Regulation (EU) 2016/1036 on protection against dumped imports from countries not members of the EU and Regulation (EU) 2016/1037 on protection against subsidised imports from countries not members of the EU);

December 20, 2017: European Commission's Report on Significant Distortions in the Economy of the People's Republic of China for the purpose of trade defence investigations (465 pages);

April 18, 2018: 27 EU Ambassadors in China and their report criticizing BRI;

September 12, 2018: European Parliament's *State of EU-China relations*, Resolution, Strasbourg;

September 25, 2018: Joint Statement on Trilateral Meeting of the Trade Ministers of the US-Japan-EU (*concerns with non-market-oriented policies and practices of third countries, industrial subsidies and state-owned enterprises, forced technology transfer*) (USTR, 2018).

Source: Own representation based on official documents.

EU expects from China: a relationship based on reciprocal benefit and market access, reduction of government influence in the processes of resource allocation and decision taking in the private sector, further reform of the state-owned enterprises, cuts in industrial over-capacity, a level-playing field for business in all aspects related to bilateral trade and investment, enforcement of intellectual property rights, promotion of human rights and so on. Moreover, it is resolute to coordinate its policies towards China with those of other partners, including the United States, as mentioned also in the *EU Strategy on China*: "*the EU policy-making on China should take full account of the EU's close relationships with the US and other partners*".

The "trade deficit issue"[2] does not appear any more as a distinctive point on the list of requirements, but this is replaced by the necessity of internal reforms. It is evident that China will continue its process of opening up and reform started four decades ago but at its own pace as a more rapid one would unbalance all its relevant markets. For instance, the steel production "issue" and China's overcapacity cannot be solved immediately. China

[2] According to DG Trade data, the EU trade in goods deficit with China was of EUR 177 billion and the trade in services surplus of circa EUR 9 billion. However, the value of trade in services represents only 11% of the value of trade in goods.

had a share of 49.2% of the global crude steel production in 2017 (out of which, circa 90% is used internally), as compared to 10% EU and 4.8% US. Almost 50% of the production is used for buildings and infrastructure, sectors with high growth rates not only in China, but also alongside the Belt and Road (World Steel Association, 2018). Steel industry is strongly related to other upstream and downstream industries, but also to labour market and the need to reallocate jobs to workers in order to maintain internal stability and keep unemployment rate at low levels.

As regards the recent Chinese initiatives, BRI and its component 16+1[3], both are seen as controversial by different EU institutions. The first one is considered as a strategy to increase China's dominance worldwide, the winners are the Chinese state-owned enterprises (Saarela, 2018) and the losers the countries becoming more indebted. Hurley *et al.* (2018) underline that 23 of the 68 countries potentially eligible for lending under the Belt and Road Initiative are *vulnerable to debt distress*, eight of them being most endangered (Pakistan, Djibouti, Maldives, Laos, Mongolia, Montenegro, Tajikistan and Kyrgyzstan). The second one, 16+1, is perceived as "being in conflict with EU law" and eroding "EU norms, values and unity" (Grieger, 2017).

Western experts recommend that "with power comes responsibility", therefore China should "agree and implement prudent lending standards". Besides it should "coordinate its handling of bad debt with Paris Club" (Financial Times, 2018). Kevin P. Gallagher, professor of global development policy at Boston University has a more nuanced opinion. First, "*China's financing promises are much more productive than the short-term capital flows that surged into the emerging markets and developing countries and is now trickling away as US interest rates rise and growth prospects plateau in the emerging world - leaving behind piles of dollar-denominated debt in the corporate and some public sectors"*. Second, China should not join the Paris Club until this group reforms its policies and adopts a *"more responsible sovereign debt restructuring mechanism", as not austerity is the solution but "the kind of financing China has to offer"*. Very few studies underscore China's relevance as regards official development assistance and other official flows, including 3.485 projects worth more than USD 273 billion it financed in 138 countries during 2000-2014 (Bluhm *et al.*, 2018).

What does China expect to obtain from the EU? Definitely a shorter list than the EU's: a long-awaited market economy status, the non-intervention by other entities in the South China Sea disputes, termination of the arms embargo and an eventual launch of a joint action against the United States at the World Trade Organisation. But the EU is not willing to do that until China accomplishes its assumed commitments.

Instead, on the 25th of September 2018, representatives of the US, EU and Japan met on the sidelines of the United Nations General Assembly and "confirmed their shared objective to address non market-oriented policies and practices of third countries that lead to severe overcapacity, create unfair competitive conditions for their workers and businesses, hinder the development and use of innovative technologies, and undermine the proper functioning of international trade, including where existing rules are not effective." This demonstrates that the old triad US-Japan-EU is still powerful and active. In spite of US's withdrawal from the Paris climate deal and from the Iran nuclear deal, in spite of its

[3] Platform of cooperation initiated by China in relationship with 16 CEE countries (CEE-16): Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia.

unexpected recent actions in terms of trade rules, EU continues to consider the US its key partner.

3. The impact of the interactions in the US-EU-China triangle on Sino-EU relations

The EU has strategic partnerships with 10 countries around the world (Brazil, Canada, China, India, Japan, Mexico, Russia, South Africa, South Korea and the United States), while China has more than 50 (Zhongping, Jing, 2014). If we judge which of the EU's and China's strategic partners meet the condition of being *"key players with a central role in solving global issues"* (according to the criterion mentioned by Renard; 2012), first the US and then China are the most valuable partners for the EU, while EU, Russia and the US in this order are the most valuable for China.

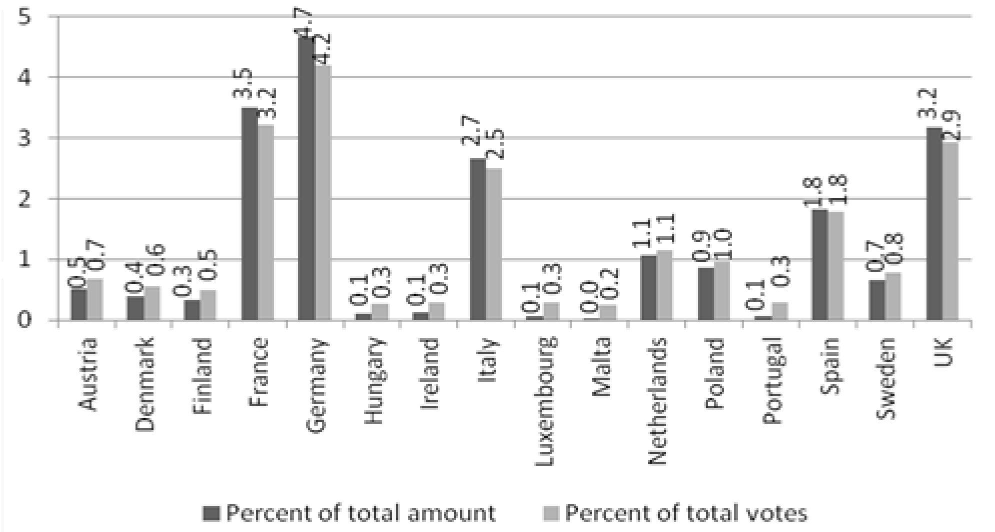
The summit of June 29, 2015, marking the 40th anniversary of EU-China diplomatic relations, was a success and marked an apex of the bilateral relations, one of the key decisions being the launch of a *Connectivity Platform,* a symbol of complementarity between the Belt and Road (BRI) and EU initiatives**.**

By contrast, 2016 and 2017 were "tough" years for bilateral relations because of disagreements over issues such as EU refusal to grant China the long awaited market economy status and ongoing territorial disputes in South China Sea. That was reflected by the absence of any joint declaration at the bilateral summits of 2016 and 2017. In 2018, the situation changed again. US attitude towards the existing system of international rules and EU and China's will to strengthen their role as global actors seemed to have created the premises for a strengthened partnership. Obviously negotiations, concessions and new engagements are needed on both sides but EU and China seem ready to take this step as expressed in July 2018 by the optimistic Joint Declaration in 44 points and the additional Declaration on climate change and clean energy on 16 points.

In spite of the US-Japan-EU initiative of September 2018, EU is ready for a consolidated partnership with China. Even if the Chinese Belt and Road initiative is still considered with caution and 16+1 initiative is seen as "divisive" by the European institutions (Oehler-Şincai, 2018b), EU and its member states are ready to take advantage of new opportunities.

The first argument in this regard is related to the fact that EU member states criticize China's standards and business practices, but already 16 of them are members of the Asian Infrastructure Investment Bank (AIIB) proposed by China and launched in January 2016. Their individual shares of total subscription are lower than China's (around 30%), India (8%) and Russia (7%) but their cumulative share is of 20% approximately (Chart 1). Belgium, Greece and Romania are on the list of 19 prospective members of this new multilateral development bank.

Chart 1: EU member states' total subscription and voting power at AIIB (% of total amount and total votes)

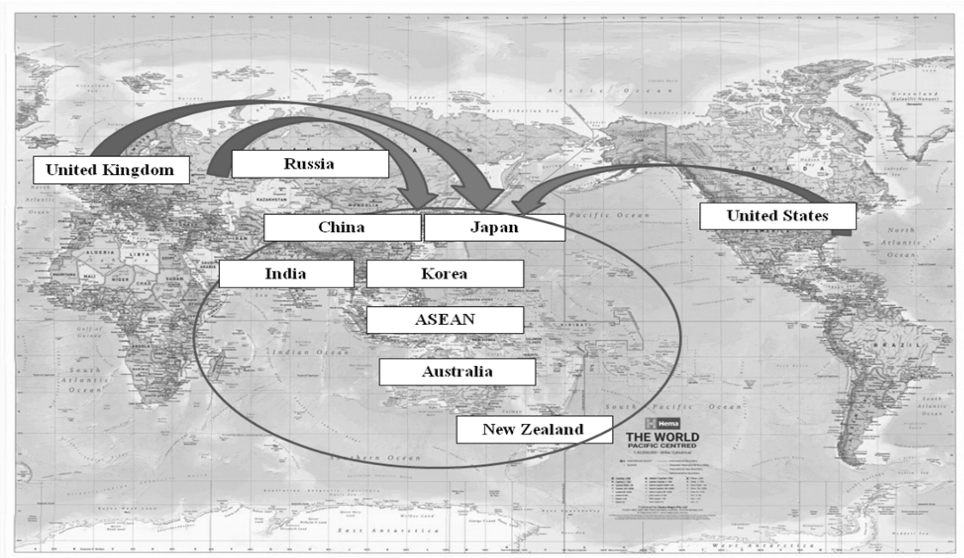


Source: Own representation based on https://www.aiib.org/en/index.html.

The second one is related to EU's ambitions to become a global player. Nowadays no entity can have this status if it does not have a strong presence in **Asia-Pacific**. Different EU member states have strong economic relations with countries from this region however EU does not play a relevant role in this space. The Belt and Road initiative and its strong partnership with Russia triggered deep changes in the system of relations in the region. These are motivated especially by US, UK and India's strategies and goals (Map 1).

Already since 2011-2012, United States has been trying to stimulate India to "Act East" instead of "Look East". Under Narendra Modi, India intensified its efforts to accede to the Asia-Pacific Economic Cooperation Forum but without any success. US has found a way to transform India in the centre of this region. In December 2017 it launched the National Security Strategy where it defined the Indo-Pacific region as "the most populous and economically dynamic part of the world", "from West coast of India to the western shores of the United States" (The White House, 2017a, p. 46). India is presented as "a leading global power and stronger strategic and defense partner", with which the US is intending to intensify the cooperation both bilaterally and in the quad made of US-Japan-Austria-India (The White House, 2017a, p. 46). In the US Strategy on Afghanistan and South Asia, India is called "the world's largest democracy and a key security and economic partner of the United States", President Trump inviting India to help "more with Afghanistan, especially in the area of economic assistance and development" (The White House, 2017b). In the American Indo-Pacific Economic Vision, US puts forth its democratic values, a "free" ("every nation, to be able to protect their sovereignty from coercion by other countries") and "open" ("all nations to enjoy open access to seas and airways", "peaceful resolution of territorial and maritime disputes") Indo-Pacific (Pompeo, 2018). These resonate with the objectives of territories/countries involved in disputes with China in South China Sea (Taiwan-China, Malaysia, Indonesia, Philippines and Vietnam) and also with India, eager to have strong allies in its race with China.

Map 1: Major players in Asia-Pacific



Source: Own representation based on: https://www.mapworld.com.au/products/world-hema-political-pacific-centred-supermap.

It is worth noting that India is ranked fifth in the hierarchy of world countries, taking into account the level of military spending in 2017, after the US, China, Saudi Arabia and Russia, with a value of $ 63.9 billion and a share of 3.7% in the world total and besides India was the largest arms importer during 2013-2017 (SIPRI, 2018). Defense sector is among the highest priorities of the Indian government and India intends to become one of the first five producers of military equipments and platforms in the next ten years.

Therefore, with India as a key partner in the Indo-Pacific region, the US will lose nothing after giving up the "Pivot to Asia", India has the funds and the will to take over any costs in exchange of becoming a military power.

The United Kingdom intends also to become a major player in the region with India's help. However India is a good negotiator. Being aware of its importance in the Commonwealth and its key role for the UK in Brexit's perspective, India is vigorously pursuing its national interests and offering nothing for free, but only considering how much it gains in terms of expanding its sphere of influence not only in the Indo-Pacific region, but also globally.

In the context of actual power shifts, this region is at the core of global changes but ties between EU and Asia remain weak. How could the EU change this status quo? By taking into account that China needs reliable partners. China's large scale initiative BRI has generated not only positive reactions (related to its objectives of *policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bonds*) but it faces also "enormous challenges of geopolitical suspicion, economic uncertainty and security risks" (Cui, 2016). In only several years, BRI has forged for China solid partnerships with some countries but at the same time it increased the antagonism with rivals such as India. Taking into account the present context, China and the EU can benefit from a unique moment, which might be conducive to a deepening of their strategic partnership. If the EU as an entity becomes China's declared partner for implementing BRI and companies from the EU countries are included on a list of international agreed partners, the credibility of this project will increase. The actual erroneous narrative focused on “debt trap” might get the correct connotation, namely that of an engine for infrastructure development and economic growth.

4. EU member states’ different intensities of cooperation with China

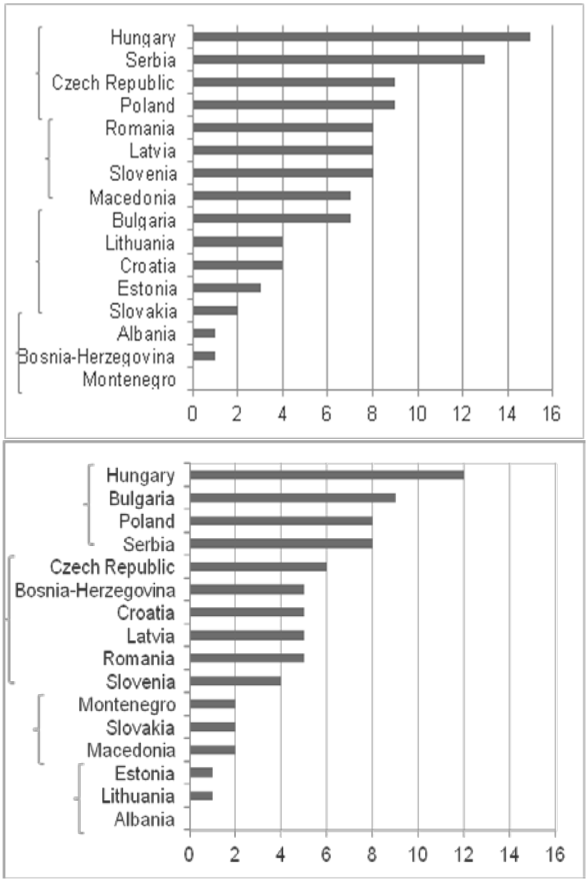
More than ten of China’s strategic partners are from the EU, namely: France, Germany, Italy and UK since 2004, Spain and Portugal since 2005, Greece since 2006, Denmark since 2008, Poland since 2011, Ireland since 2012, Czech Republic since 2016 and Hungary since 2017. In certain cases, different successive governments had contrasting attitudes towards China, either in the direction of improvement (see relations with the Czech Republic after Vaclav Havel, a declared friend of the 14th Dalai Lama) or in that of worsening (for instance the relationship between China and Romania after Victor Ponta).

The level of development achieved by China is seen in the developed countries as a threat to the already obtained advance. On the contrary, in developing countries, it is seen as a desired status (Oehler-Şincai, 2018a). In CEE, it has a more subtle nuance, as countries in this region have the ambition to leave the label of *EU economic periphery*. China has offered the CEE countries a specific framework, 16+1 as part of the BRI, complementary to the instruments created by the EU in order to diminish the gaps between different levels of development. Even if there are unfulfilled expectations in CEE as regards the number and scale of implemented projects financed by China in the region, however the actual Chinese level of development is predominantly described in positive terms.

Among the EU countries, member states from the CEE, Greece, Italy and Portugal seem more inclined to cooperate with China in the 16+1 platform than the others. There are many motivations determining the CEE countries to support this initiative, such as: (1) diversification of export markets and investment/financing sources; (2) the need to develop and upgrade infrastructure; (3) the ambition to become more visible and strengthen their position in the CEE, but also to influence EU policy according to national interests; (4) some countries’ (including Poland and Romania) intentions to diminish their dependency on Russian energy; (5) Poland’s trial to balance the power between Russia and Germany and increase its regional role; (6) besides, some of them, led by the eurosceptic Poland and Hungary, are attempting to change their status of overdependence on the EU and establish a system of more balanced relations with strong economic partners outside the EU, including China (Oehler-Şincai, 2018b).

Hungary appears as the most ambitious supporter of China in the 16+1 framework, while the others change their priorities according to new circumstances (Chart 2). It is worth noting that Hungary’s attitude towards the US is a critical one, while the actual government strongly supports cooperation with both China and Russia. On the contrary, for countries such as Poland, Romania and Baltic States, the US is considered as a key security guarantor.

Chart 2: Hierarchy of the CEE countries by number of events announced/hosted during 2013-2015 and 2016-2018 as part of the 16+1 framework



Source: Own representation based on successive 16+1 Guidelines for cooperation.

Given the criticism by the EU institutions and majority of the Western EU member states towards 16+1 and, at the same time, being aware of the importance played by strong partnerships with the developed Western countries for its own development path, China had already confirmed its readiness for trade-offs in several occasions. For instance, there are many external observers at the 16+1 high-level meetings. Moreover, on the 31st of May 2018 in Berlin China invited Germany to participate trilaterally in the 16+1 activities, underlining that China "hopes to see a more united, stable and prosperous EU". More recently, the Sofia Guidelines for Cooperation between China and CEE dated the 7th of July 2018 underscored among others the launch of a Global Partnership and Cooperation Centre in order for China to better understand and implement the EU regulations.

The 16+1 framework needs now much more than a vision and plans, it needs both EU support and concrete projects which are successfully implemented. Budapest-Belgrade railway, **Pelješac Bridge and** the larger New Eurasian Land Bridge **will represent one day such success stories. Until then,** 16+1, EU institutions, Western EU member states and also industry representatives can gather to debate concrete projects. Which are the investment needs of these countries? Which amount can be supported by the EU? What can complement China? Furthermore there are needed concrete projects for the implementation of the Connectivity Platform surpassing the area of transportation, with specific goals, budgets and deadlines and taking into account also the EU strategic interests. The Three Seas Initiative, Via Carpathia and participation in EU regional initiatives such as the Danube Strategy are good examples of contribution to the development of the Trans-European Transport Network. However China should be aware that most of the EU countries are still eagerer to cooperate with the US than with itself.

5. Conclusions

China's initiatives such as Belt and Road and 16+1 must be understood beyond the narrative related to its own gains in terms of influence. In order to accelerate reforms at home, it needs reliable partners and the EU is among the most significant ones. But from another perspective, a strong, open and trustworthy partnership between EU and China can be also for the EU a way to achieve the long-awaited status of global player. EU cannot obtain it in the shadow of other global players, but only as an equal-footed partner, even if keeping its own rules, such as level-playing field and reciprocity. America's Indo-Pacific Economic Vision does not offer the EU the chance to enhance its role in that region, but the Chinese Belt and Road Initiative represents for the EU a gateway to its looked-for global status.

The argumentation build around the three major research objectives of this paper can offer in the end the answer at the question whether the opportunities forged by new international circumstances (especially the "Trump factor") weight more in balance than the EU's and China's unaccomplished demands to each other. Nevertheless as long as the United States continues to be the most relevant strategic partner for the EU, the answer remains an indisputable "no".

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VARIETIES OF STATE CAPITALISM[1]

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Abstract: *The minimal state concept of the neo-liberal policy agenda was queried worldwide after the 2007/8 global financial crisis. Increased state intervention differed in its scope and durability in various capitalist models. Countries with stable and strong democratic political and market economic institutions witnessed a brief episode of nationalizations that was soon followed by the sale of acquired assets. However, new democracies responded differently. In most emerging market economies, post-communist and developing countries alike, increased state intervention remained in place and was used to various political purposes. These ranged from large-scale development programs to simple political rent seeking. The paper concludes that weak social and international control over political institutions may result in rolling back of democratic political institutions and drastic weakening of market economic institutions, the rule of law and competition.*

Keywords: *state capitalism, rent seeking, corruption, varieties of capitalism, market economy, liberal democracy*

1. Introduction

State has always been an important actor of social life during modern history. Areas and tools of state intervention changed remarkably over time also in connection with social perceptions and political institutions. The role of the state has always been a political issue including its involvement in the economy. Therefore, state performance can be analyzed both from the technical and the political aspect. During the age of modern capitalism three periods of intensive state activity could be observed. As Nölke (2014) rightly indicated, after the late 19th century economic nationalism and the Keynesian (and corporatist) decades of the 20th century, the new period of *statism* in the 2000's is already the third state-led paradigm of the capitalist world. The three periods had very different features from the technical viewpoint (the usage of economic policy tools) but also from the political aspect (whose interests were served by the state intervention). Therefore we can compare the three periods only by proper analysis of not only state policies but also the world economic environment and political conditions of the time. Obviously, the

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government policy toolkit depended on both internal and external political conditions prevailing political concepts and social perceptions.

2. Typology of economic and political systems based on the state's role

In a useful analytical approach of the late 20th century transition economies Kornai (2016) differentiated between two main types of economic and political systems. Liberal democracy goes together with free market economy principle. Dictatorship is bound with bureaucratic control and coordination of the economy. Of course, most market economies are somewhere in between. In the group of countries with more stable and long traditions of political democracy and free market economy there are countries that traditionally have more state influence in the economy (France) than others (Britain). The political scene also shows different institutional systems. Market economic institutions are sometimes coupled with weak democratic institutions and influential charismatic leaders. In such autocracies we can usually see high level of centralization in decision making that provides stronger control of the state over the economy. Historically we can also observe in some countries oscillation between the basic state concepts: autocracy (dictatorship) and liberal democracy (Kornai, 2016).

Nations, countries are diverse concerning their historical, cultural heritage, natural and human endowments, level of development. Therefore, Kornai's dichotomy can be applied only on rather high levels of abstraction. The "Varieties of Capitalism" (VoC) literature (see: Hall and Soskice, 2001; Amable, 2003 and many others) identifies significant differences of capitalist models within the relatively homogenous countries of core Europe. This is despite that these countries are regarded as liberal democracies and also free market economies. Moreover, their political orientation and institutional systems were streamlined in the European integration process. The basic principles of economic integration described the potential benefits of increased homogeneity of the single European market. On the other hand, the globalization process has also triggered important spontaneous as well as institutionally initiated streamlining in many areas of social life reaching from consumerism enforced by multinational business to capital market liberalization suggested by international organizations. Nevertheless, Gerschenkornian diversity prevailed. An important object of study within the theme of capitalist diversity is the economic role of the state.

During the late XX century the neo-liberal agenda has developed into a pervasive principle that claimed exclusive influence in economics, economic policy and education (see e.g. Csaba, 2009; Stiglitz, 2010). The neo-liberal approach to the role of the state was rather conservative and emphasized the principle of minimal state. Due to the strong pressure from the monetarist school starting from the mid-1980s pervasive state intervention was scaled back drastically. Ronald Reagan's America and Margaret Thatcher's Britain took the lead in the liberalization and deregulation of the markets. In Britain also massive privatization of state-owned companies took place: direct state intervention was curtailed. To a lesser extent similar policies were applied in many developed economies. Moreover, international organizations (strongly influenced by the USA and its economic policy paradigm) suggested similar policies to countries of different development level and cultural, institutional heritage. Minimal state became a buzzword of the last two decades of the XX century. Liberalization, deregulation, privatization was reinforced in many developing countries and emerging market economies including transition economies of Central and Eastern Europe (CEE).

The agenda produced a rather smooth development pattern in developed market economies. The period of the "Great Moderation" from the 1990s to the 2007 financial crisis showed fairly stable and significant economic growth in the developed part of the world. One could conclude that the minimal state concept could work if proper market economic institutions effectively regulated markets and the economy in general. Warning signs of repeatedly occurring currency crises in Latin-America and South-East Asia were neglected in the belief that on the long run reasons of these problems could be also lifted if market institutions were properly developed. The concept was only slightly amended to consider local circumstances in the implementation of suggested policies. The fundamental goal of introducing liberal market economy in any country was not changed. Also, chaos in the Yeltsin era Russian economy did not shake mainstream economists' firm belief in the omnipotent minimal state concept (see Fukuyama, 1992). It was shaken only by the 2007 financial crisis that showed the limits of liberal market economic institutions' regulatory effect in the global economy.

3. Post-2008/9 crisis: Increased state interventionism versus minimal state

Economic concepts were reconsidered in many countries after the 2008/9 world economic crisis. The devastating effect of the unexpected financial crisis could be limited only by massive state intervention. Meltdown of the global financial system was prevented by bailing out the largest global financial institutions in the USA and in Europe. Various techniques were applied. Nevertheless, the outcome was generally a massive increase of state ownership in the financial sector (Voszka, 2017). In some cases too big to fail industrial corporations received the same treatment. The myth of the omnipotent self-regulating markets was blast. The state had to come back in the most developed advocates of the neo-liberal concept, too. The revival of the state has become a general phenomenon in the world economy. However, it affected the various regions and countries differently. The depth and direction of changes in policy concepts regarding direct state intervention very much depended on the historic and cultural heritage. While broad state intervention in the economy has had long traditions in France (Somai, 2017), British or German traditions suggested a more rapid and possibly full retreat (just to take examples from developed world). Emerging market economies in the Third World but also in CEE possessed much weaker market institutions and became rather skeptical about the application of the minimal state concept in their countries already prior to the 2008/9 crisis. Most countries of these regions did not hesitate to take the now much easier opportunity to increase economic intervention of the state for the longer run.

Diffusing empirical evidence of economic policies shows therefore increasing diversity parallel with the weakening of the neo-liberal principles. For example, the European Union continued reinforcing the paragraphs of the Maastricht Treaty in its neighborhood policy (e.g. in the Western Balkans), meanwhile a significant group of EU member states (with the lead of Hungary and Poland) openly queried the validity of the political and institutional fundamentals of the same agreement. State permeated economies (Nölke, 2014; 2015) emerged and played roles in world economic labor division that were previously reserved by mainstream economic thought to highly developed economies only (e.g. foreign direct investments). For decades, economic development in Africa could not be successfully triggered with policies suggested by mainstream international financial institutions but rather by new policy approaches of the past decade that understood better and considered more local realities (see Diao *et al.*, 2017).

The interpretation of post crisis development patterns is by far not straightforward. This is the reason of increased research interest in comparative economics. The evolving concept of state capitalism (Nölke, 2014; Kurlantzick, 2016) regards increased state intervention as the main driver of current changes in the world economy. Current studies on state capitalism emphasize not only the role of the state in economic coordination, but also the multifaceted interplay of social, political and economic institutions affecting various dimensions of state activity. What stands clear is the possibility of parallel existence and development of several capitalist models that have their own internal logic and considerable stability. In this regard, the idea of VoC literature that describes variations within the Western world's free market economy models needs further development.

4. Particularities of the actual phase of state interventionism and the broadening VoC

Earlier, the VoC literature (based on the analytical framework laid down by Hall and Soskice, 2001 and Amable, 2003) did not tackle this issue. The analysis of the state's role was restricted mainly on market regulations and the size of the central budget, degree of income redistribution (see e.g. Sapir, 2006). Research on increased state intervention is in an early stage. Nölke (2014, 2015) put the main emphasis on the development of globally successful national champions in large emerging market economies. By doing this he concentrated on the technical aspect of state intervention in four large emerging market economies (Brazil, India, China, South Africa – BICS). Kurlantzick (2016) compared countries with high share of state owned enterprises (SOEs) in the production from political economy viewpoints (a rather heterogeneous group of countries among others Norway, Singapore or Thailand).

State ownership is just one aspect of spreading state intervention. The current revival of the state in matters of the economy represents a rather complex systemic change that also involves changes in economic and market regulations, development policy, social policies and possesses strong linkages to political institutions. Therefore, comprehensive political economy approach to the role of state in the economy is applicable. We can list some typical features that were frequently observed in countries where state involvement in the economy increased during the 2000s and especially after the 2008/9 crisis. Kurlantzick (2016) listed besides the high share of SOEs in GDP production the general decline of free market policies (as listed by the Fraser Institute). Economic regulation in general became selective, discriminative, and nationalist. Selective policies thwart competition on selected markets: mainly in finance/banking, public utility services, energy, gas and oil industry and supply. These are branches of strategic importance from the political viewpoint: through manipulated prices governments can successfully influence consumption. Imprints of state paternalism from pre-Washington Consensus periods are still strongly felt in many emerging market economies. Therefore, cheap public utility prices are important factors of political competition.

This of course also means deliberate new detour from the classic liberal democratic principles of political competition. Nordhaus (1975) developed the theory of the political budget cycles (PBC), a predecessor of the economy-polity interactions of emerging market economies. The theory argued that average voters were short-sighted and learned slowly, that provided opportunities for the manipulation of elections through excessive public spending. Though some empirical evidence suggested that over several election periods the effect might flatten because of social learning, the 2008/9 crisis seemed to return the tendency. Moreover, recent election campaigns showed an escalation of populism also in highly developed countries of the world. Therefore, there is a worldwide departure from the classic liberal principle of economy and polity separation. Because of these empirical facts the analysis of state capitalism should not necessarily be limited to emerging market economies as has been the case until now.

Another important goal of increased state intervention is the development of national champions. These projects may also have important political implications because they increase national pride and boost the popularity of those politicians and governments who contributed. The economic development agenda is of course not new. Historic evidence puts this motive into the broad context of the core-periphery and developmental state literature (on this later see Ricz 2017). This ambition gained new impetus after the crisis. One important new feature in this regard is the changed international environment where large multinational enterprises increased entry barriers to most markets. It is therefore more difficult to successfully implement national champion development projects. An open question in this context is country size. Large countries can allocate significantly more resources to the usually state-owned national champions. Stable long-term financing of such projects is a primary condition of success. Nevertheless, the mounting evidence of unsuccessful cases calls for caution. Money alone cannot make wonders. On the other hand, there are also successful cases with small countries like Singapore.

However, the national champion development programs, and excessive state ownership can fall easy prey of rent seeking. Kurlantzick (2016) states that the success of state development programs very much depends on the level of corruption. No country is absolutely free of corruption, and also state capitalist regimes show significant spread in this regard ranging from Singapore on the one hand with little state corruption to many post-Soviet countries with high corruption on the other. Systemic corruption has many levels, but the most damage is caused by public procurement tenders directed to cronies. There is ample evidence of big government projects of various countries that cost several times more in public expenditure than similar projects in countries with better public and institutional control on corruption. This practice threatens with the danger that "elite enrichment becomes the primary purpose of state enterprises" (ibid, p. 39). Besides SOEs, also partisan firms' massive involvement in public procurement raises worries about increasing corruption and deteriorating efficiency in the usage of public money (Szanyi 2016).

Usually slow social learning described in PBC theory substantially deteriorated after the 2008/9 crisis. Washington Consensus promised welfare returns attached to increasing political and economic freedom that favored the middle class. But voters' dissatisfaction with political freedom increased due to widening inequalities. After the 2008/9 crisis benefits realized by the middle class were also reduced. Increased state intervention therefore challenged the model of democracy and free market economy and promised welfare gains through increased state activity instead. This new attitude was perceived and welcomed by the societies of many countries as the revival of old paternalistic traditions.

Changes in the perception of neo-liberal concept were reinforced also by the political elites that lacked personal commitment to democracy and free market economy. Kurlantzick (2016) listed many examples of elected political leaders becoming autocrats who effectively rolled back democratic institutions with voters' support in order to strengthen their political positions. The robustly expanding state sector played significant role in this process.

The short list of successful state led development models (mainly in East-Asia) can not overshadow the potential flaws of excessive state intervention. These are connected to high levels of moral hazard, especially if business and polity relationships are not under institutional and social control. As it was mentioned, there have been many attempts to roll back democratic institutions in emerging market economies, thus, the danger of moral hazard is growing. There have been corruption scandals in many countries from China through Hungary to Brazil. Some of these cases reached highest political circles, like the imprisonment of former Brazilian president Lula. But besides corruption and outright theft there is also wide spread political rent seeking like overspending on social goals for political support (PBC) or on prestigious national programs like world soccer championships or Olympic games (Brazil, Russia, South Korea). State owned firms played an outstanding role in rent seeking and overspending.

5. Conclusion

Summing up, the weakening of the neoclassical paradigm after the 2008/9 crisis and the resulting increase in state intervention affected countries with different development levels (also concerning democratic institutions) differently. Social control, institutional embeddedness of the competition state concept prevented more developed countries from directly slipping into more autocratic system solutions. In countries with weaker and less traditional market economic and democratic political institutions erosion of these has started. Emerging state capitalist systems used increased state ownership for their own political legitimation and rent seeking. SOEs can be developed to globally competitive national champions, which can participate in politically motivated large development projects. They can also serve political rent seeking (in new forms of state paternalism) and also the enrichment of influential political lobbies. The balance between social goals and personal or partisan goals also depends on the strength of social control. Stronger control will induce policies targeting more social goals that serve political self interest (e.g. re-election) only indirectly through rising popularity. This impact is not much different than excessive budgetary spending of PBC. However, deliberate rolling back of social institutions and increasing populism works in the opposite direction giving way to more direct forms of rent seeking. This in turn endangers also market economic institutions, the rule of law and weakens competition thus switching off the main drivers of classic capitalist systems.

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ECONOMIC SECURITY IN THE BLACK SEA AREA: CASE STUDY ROMANIA

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Abstract: - *Security in the Black Sea Area is becoming an issue of increasing interest nowadays, not only for coastal countries, but also for NATO. It is obvious that for the coastal countries security is an issue of a vital importance especially considering the protection they need against the aggressively actions taken by Russia (having in mind the military actions conducted in the Eastern and Southeast Ukraine that followed the Russian annexation of Crimea). While in the literature in the field security issues in the Black Sea region are so far primarily discussed in military terms, it is our believe that for finding a new equilibrium in the region an economic analysis of the existing situation would be necessary in order to expose the cooperation interest for the coastal countries thus enable them to build a proper security environment. In the case of Romania, some references are devoted to two counties, Constanța and Tulcea, where a new approach for an economic synergy is to be considered as an immediate tusk.*

Keywords: *economic security, Black Sea Area, Romania, geopolitics, economic cooperation*

JEL Classification: *F, F02, F 15, F 19*

1. Introduction

Presently, the Black Sea coastline appears to be a miniature representation of the global tensions since in this region there is a confrontation between both established economic powers and emerging ones, thus contributing to the existence of an outbreak of instability that could escalate at any time, leading to a shift from the normality of peace to an increase tensioned status-quo. In a profound analysis of geo-political issues in this region, we observe the coexistence of the new threats (separatism and terrorism) alongside with the traditional ones (nationalism and populism that can lead to xenophobia), all of them having the potential to escalate into direct confrontations. Recent analyses (e.g.

Chifu, 2018) suggest that in the Black Sea Region, as in other conflictual global areas, we are currently witnessing the re-emergence of the so-called “power policy”, intensely used between the two World Wars, when there was an increase appetite for political, diplomatic and even armed confrontation.

The current political and economic framework in the region is particularly complicated, highlighting the existence of a critical insecurity pole on the background of breakthroughs and de-synchronizations in traditional geo-political landscape. It is worth mentioning that the potential for the outbreak of regional conflicts is even greater as the coastal states belong to different and even antagonistic economic and political-military alliances.

Taking into account this potentially tense context, the latest NATO reunion was preceded by less nuanced, but perhaps more explicit, statements regarding the necessity of finding solutions for the existing tensions. With respect to the need of building a more secure environment in the Black sea region, German Chancellor Angela Merkel declared (in an interview with Politico Journal) that the "identification" of the common enemy – namely Russia - does not mean that there is no need to build a responsible relationship with this state. The framework for this responsible relationship remains undoubtedly the NATO-Russia Council, a meeting of utmost importance to meet the current security challenges. In the same statement given by the German Chancellor it is highlighted that "after the annexation of the Crimean Peninsula, given Russia’s military activities in Eastern Ukraine, it is important to focus more on defending the NATO Alliance. To do this, we need to make the necessary arrangements, such as an increased presence of NATO in the Central and Eastern European countries”.

It is obvious that the challenges facing by NATO have greatly changed since the end of the Cold War (a period in which ideological divergences prevailed), but what remained unchanged is the reality that beyond its alleged transformation from a military alliance into a political one, NATO still must play a major role to prevent new aggressions of Russia in Eastern Europe. To this end, NATO must organize a military presence at its Eastern border, but also at the Eastern border of the European Union. Moreover, NATO's military relevance is highlighted by the EU's economic leader - Germany - which has always voiced concerns about how the Trump Administration basically undermines the transatlantic security relationship. Germany has responded to the demand for increased military spending by promising to reach 1.5 percent of GDP in 2024 (according to German Defence Minister Ursula von der Leyen), eventually aiming to achieve the 2 percent target demanded by the US President.

2. Security and economic cooperation in the Black Sea area

At the most recent NATO meeting it was underlined that currently it has become increasingly evident that Russia does not give up its posture of economic and even military power in its former area of influence, the ex-Soviet space. As a result, any real dialogue, including on the issue of security at the Black Sea or linked to the issue of sanctions, can only begin with the finding that for resuming cooperation, Russia should abandon its claims on the Crimea and the Eastern Ukraine, leading to a return to the normal situation in the region according to the Helsinki Declaration (1967), which states that the borders of states are inviolable. Meanwhile, NATO's military presence is vital to preserve security and stability in the region, including for the Romanian sea coast.

In our work, which aims to bring forward the security issues in the Black Sea Area along with the implications for the economic development of the region, we begin with three definitions of the concept of security, set out in different moments of the post-war period. In those conceptualizations we discover a set of logical connections that will trace the key coordinates for the analysis exposed in this article.

But before quoting those definition, there are two points to be made about the crucial economic importance of the Black Sea region. Firstly, from a geopolitical point of view, the riparian countries provide connections between the three sea basins (Caspian, Aegean and Mediterranean) and between two vast geographic regions - Russia and the Middle East - whose importance is primarily related to the energy resources they hold. Secondly, from a geo-economic point of view, the Black Sea basin has become a turning point for major flows of energy trade (oil and gas) and other critical goods of global interest from which we cannot strictly isolate the interests of the European market. It is not surprising that, against the backdrop of current tensions, the region is proving a major concern in terms of the need to find a new viable security formula in the current geo-political climate.

The first assertion belongs to Arnold Wolfers, pioneer and leader of political philosophy, definition that was publicly stated in 1952: "Security, in an objective sense, means the lack of threats to values, and in a subjective sense, the absence of fears that those values will be attacked ". The reason we mention this assertion is because Romania, as it has appropriated the values of Western democracy and it has acted in their terms within its partnerships with the EU and NATO, then it is also bound to defend the security of their economic as well as geo-political interests.

The second assertion belonging to Robert Mc. Namara stresses that "Security means development, and without development there can be no security. Development means making economic, social and political progress. It means a reasonable standard of living, and what is reasonable must be constantly redefined in relation to each stage of development. "We believe that, in this definition of security, we find Romania's assumed (not fully realized) policy that, on the basis of these values, it should contribute by specific tools (through the rule of law) and strategies (the fully functional market economy) to the progress of our society.

A third, more recent assertion, which, in our opinion, has the greatest relevance to the complex transformations we are witnessing, was issued by Sheila R. Ronis, former director of the Center for Complex and Strategic Decisions, USA: “Economic Security means national security”. Through this simplified definition of the deepest connection verified by history, Ronis gives us the warning example of the former USSR, which was deprived of economic security while using almost all its budgetary resources for winning military race, hence disintegrating rapidly, broadly, and precipitously.

Finding an essential link between security and economic development requires to undertake governance measures that focus on ensuring the sustainability of economic development in order to have, among other benefits, the resources needed for militarization. It is to be noticed that both NATO and the EU are putting pressure on the increase of military resources, but the suggested solutions are not necessarily convergent. The EU is dominated by the message of the need to find internal solutions for European continent security, while NATO is advocating for an increase in the portions of the national budgets allocated to defence in each member country.

Meeting the expectations of European citizens in terms of security and defence – a fact recognized by the Rome Declaration adopted by the European Council on 27 March

2017 – requires a vision of a Union that can provide security and prosperity, while strengthening its Common Defence Policy.

At this point, we shall mention that the current international context is burden with complex challenges, which may have repercussions on the future of the EU and of the Member States: from the Ukrainian crisis (followed by tensions with the Russian Federation) to the Arab Spring (which had as consequence the refugee crisis and their massive movement to the European continent). In the light of these realities, the EU faced the imperative of rethinking and redirecting its actions in the field of foreign policy. As a result of this, the Global Strategy for Foreign Affairs and Security Policy (EP, 2016) appeared in June 2016 after a strategic assessment of the main mutations and challenges currently existing in the international arena may have direct consequences on the EU's medium- and long-term evolution. The stated goal of this strategy was to provide a coherent framework for action at EU level to meet the challenges of a globally changing environment, as well as the tensions caused by various geo-political shocks.

Romania's integration into the European Union increased our country economic power but although the domestic policies adopted in the last years should be considered as a first step in improving our country position in the international arena, there is still a lot to be done in order to gain a stronger voice in EU.

As a result, it is it is assumed axiomatically the thesis stipulating that Romania's economic security is indispensable for its national security, while economic power may also be used as a negotiating tool within the EU, especially regarding the structure of the multiannual budget, together with the level and the destination of structural funds. By preparing at the institutional level to join the euro area (see OUG no. 24/2018), Romania has assumed the rules of governance within the EU and, in our opinion, this status-quo annihilates the criteria for its marginalization within the EU, as those criteria are usually discriminatory. Moreover, as a member state, Romania cannot rely exclusively on NATO for the defence of its own security, but must achieve strong internal development comparable to that of Western partners for enabling a viable national security.

The security issue in the Black Sea area is undoubtedly related to the economic development of the region, especially in the case of Romania as a riparian state. However, we cannot deny the influence of the political factor on economic development, which is all the more obvious at key moments for our country's future, such as those of joining NATO and the EU.

The issues concerning the security of the Black Sea are viewed by some studies as predominantly related to military actions. Several analyses (e.g. NATO, 2017) show that regional economic security is undermined by the poor economic development of some countries such as Romania and Bulgaria and this leads to an insufficient capitalization of the opportunities offered by the huge transit of goods and services in the region. As a result, these countries have neither the resources to modernize their own defence nor the capacity to strengthen their national security.

According to the above analysis, achieving a balance in security matters requires military ground, maritime and air force that is difficult to secure only from national resources for the economically underdeveloped states. Such an analysis determines us, as economists, to ask ourselves what kind of security should be provided in the Black Sea area: passive, defensive, or deterrent; how, with whom and by whom. Regarding this, we mention that there is a tendency for riparian states to approach security issues in an introverted manner at the expense of multilateral approaches that prove to be more effective. It seems that every bilateral relationship between the countries bordering the

Black Sea is burden with tensions and these are hard to overcome. Considering the need to create a "buffer" between NATO and Russia with the involvement of other non-Alliance countries (Georgia, Ukraine, and Moldova), additional efforts would be needed from each of the riparian countries, involving both military and financial resources. Regarding this reality, some authors (Rogan, 2017) show that "Romania's military capabilities remain weak, as the country has a relatively modest defence budget and has been preoccupied with out-of-area missions such as the International Security Assistance Force in Afghanistan ".

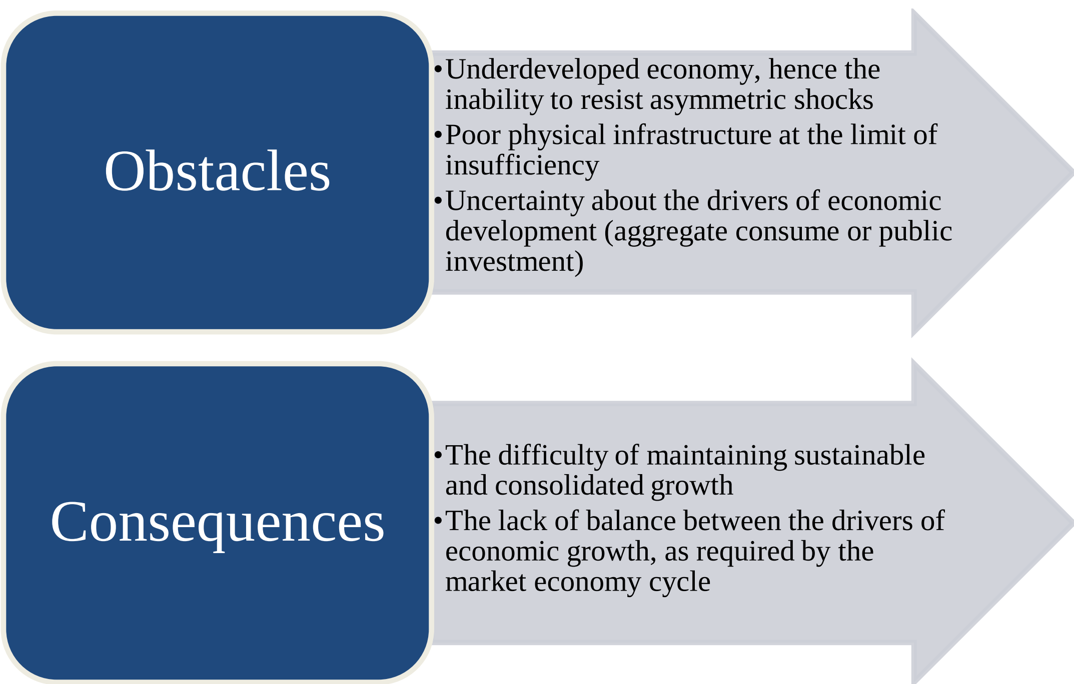
3. The case of Romania

Presently, Romania has undertaken the necessary political interventions to help increase security in the Black Sea Area. This is all the more useful because, in order to be good partners in the international security coalition, we must prove that we are capable of economic and even military efforts on our own. In fact, the need for such an approach is more evident than ever in the current geo-political context, and this reality is underlined by the strategic partnership between Romania, US and NATO.

Romania's economic security at the Black Sea should be assessed taking into account the evolution of key macroeconomic indicators, as they are directly related to the economic development in the coastal area.

Concerning the economic security of the Black Sea, Romania faces certain difficulties (see Figure 1).

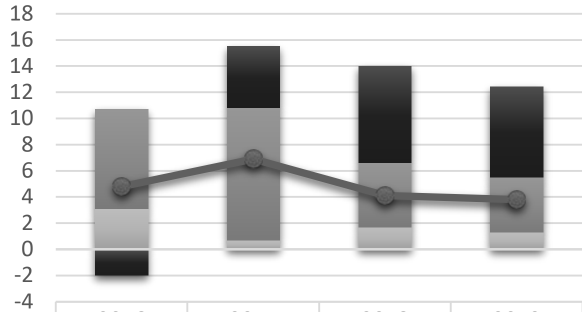
Figure 1: Romania's economic security - obstacles and consequences



Source: Authors representation based on studied literature.

Regarding the obstacles outlined in Figure 1, we suggest that the "market-state" ratio should be reconsidered, not from an interventionist perspective, but to fully exploit the opportunities of the current fulminating growth rate (highlighted in Graph 1).

Graph 1: GDP growth and main contributors (%)

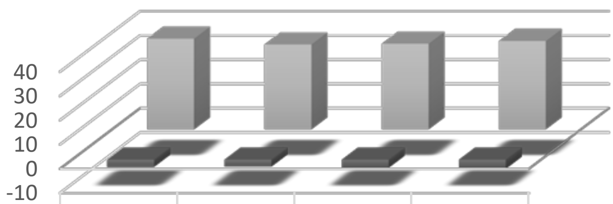


	2016	2017	2018	2019
Grossed Fixed Capital Formation	-2	4.7	7.4	6.9
Private consumption	7.6	10.1	4.9	4.2
Public consumption	3.1	0.7	1.7	1.3
GDP growth	4.8	6.9	4.1	3.8

Source: Authors representation based on European Economic Forecasts, Summer Interim (2018).

According with the data presented in Graph 1 data, we may conclude that Romania's economic perspectives are moderately optimistic. Looking ahead, growth is expected to decelerate but remain robust. Private consumption is forecast to slow down in 2018, as nominal wage growth moderates and inflation increasingly weighs on real disposable income, but will remain the main driver of growth. Investment, however, is likely to further strengthen in 2018 on the back of a pick-up in the implementation of projects financed by EU funds. In our opinion the main risk factor remains the evolution of the general government balance (Graph 2), which may undermine the present and even the future development.

Graph 2: General government balance and general government gross debt (%)



	2016	2017	2018	2019
General governement balance	-3	-2.9	-3.4	-3.8
General governement gross debt	37.4	35	35.3	36.4

Source: Authors representation based on European Economic Forecasts, Summer Interim (2018).

While the budget deficit has exceeded 3% of GDP (the Stability and Growth Pact limit) since 2017, and it is currently well above the MTO objective, the economic perspectives remains uncertain, given the economic cyclicality or the possible rise of a new global crises in which Romania could engage without being able to make financial reserves as a result of the current economic growth.

With public revenues of 26-29% of GDP, compared to over 40% in the case of our European partners, Romania does not have sufficient resources to sustain powerful growth and neither to invest in security measures. The current financial framework of Romania - the revenues to the public budget, as well as other financial resources (from commercial banks, from structural funds and from the capital market) - place us very low in the hierarchy of the neighbouring countries (Bulgaria, Poland, Hungary), although in the ranking of GDP at Purchasing Power Parity (PPP), Romania exceeded in 2017 with 60% the EU average, while also registering an unemployment rate among the lowest in the EU.

The high growth of GDP at Purchasing Power Parity conceals regional discrepancies – especially between counties – as development poles do not create a "spill-over" phenomenon over adjacent areas because of the lack of physical but also due to the diverging interests of some European and global players.

With regard to human capital, the only creator of added value, some important issues are to be highlighted. Currently, Romania faces the lack of labour force at all levels of qualification. The active labour force is of 4.8 million people while there are structural weaknesses in the labour market potential, revealed by the high inactivity rate (33% of the potentially active workforce, the third as size in the EU), the high share of young people not involved in any economic activity (20%), the limited internal mobility and lack of correlation of training with the labour market requirements of.

High school and university graduates prefer to find jobs abroad, an option encouraged by the multitude of job fairs, demonstrating the same shortage of workforce that is encountered inn many developed European countries as a result of aging or re-qualification from an age up. According to the data published by the National Bank of Romania (NBR), as a result of the behaviour of the Romanian financial system that has a foreign capital above 90%, banking intermediation largely diminished, falling to 27%, from a peak of 40% in 2011, compared with 54% in Bulgaria and 56% in Poland. Monetization of the economy is among the lowest in Eastern and Central Europe, with the share of M3 in GDP being about 40%, compared with 85% in Bulgaria, 68% in Poland and 106% in the euro area. Gross capital formation and saving rates remain at low levels, regardless of the economic cycle, respectively of 24-28% and 22-24%, between 2010 and 2017. During the last three years, the public investment rate in GDP was of 3%, the lowest level since the post-accession period. With regard to the Structural Funds, in addition to resuming funding from this resource with a long delay, the absorption rate reached only 10% in the current multi-annual financial exercise (2014-2020).

Currently in Romania, there are a number of inadequacies regarding the implementation of economic policies dedicated to sustainable development. These policies should, in our opinion, be geared towards boosting the growth of high added-value economic sectors, but this is not the case the least in the current government approach, and as a result there is a lack of confidence in the business environment (instability and legislative unpredictability, especially with regard to taxes which, as we know, are pillars of any credible business plan).

On the other hand, Romania's economic security is also jeopardized by the evolution of the inflation rate, which continues to maintain an upward trend, despite numerous state interventions (with negative repercussions on excise duties, but also on utility prices).

In a world of interdependence, these risk factors add a further burden to the evolution of the European and global economic cycle and, as a result, the prospects for Romania's economic security are uncertain. So far, the reforms implemented by all succeeding governments in recent years have failed to meet the expected goals, hence not having the needed beneficial effects. These reforms, however, have exhausted public resources that are limited and cannot be increased without further fiscal measures or without reducing public spending.

Considering the challenges of globalization, we must note that Romania has so far a poor economic cooperation and has registered only partial success in the process of European integration. Legislative and institutional harmonization with EU standards has been done without proper synchronization with national interests, without the increase in human resource capacity, the only one able to manage the effects of this process (see, in this respect, the case education reforms n that have destabilized the level of professional training which we would have needed after joining the EU). Also, the granting of state aids to foreign companies at the expense of the Romanian companies, as well as the transfer prices, led to the supremacy of the multinationals towards the Romanian economic sector, a situation whose negative effects are currently observed.

Another impediment to achieving Romania's economic security is the public procurement law. The performance of public spending on long-term investment on economic development shows that this law currently creates obstacles to improving the structure and performance of the national economy. The functionality of the law still obviates the real competition between those with technical and engineering capabilities (well-capitalized and technically-endowed firms) that could implement large-scale economic projects.

The level, quality and geographical dispersion of physical infrastructure is another factor that negatively affects Romania's economic security. As a result, we are currently confronted with the economic polarization of the counties and with a high level of population affected by social and economic exclusion.

This status quo leads to a lack of real convergence, and as a result Romania is "left behind" by the “tough-core” of European Union, represented by the Eurozone. This situation is all the more frustrating as Romania is obliged to contribute with new funds to other stabilization mechanisms (the Banking Union) and the EU Securitization (PEPCO). Black Sea security, an area that must be considered the EU's eastern border, must be included in the Brussels strategy of security with proper measures for increasing the economic security of riparian states, including Romania.

Regarding the two coastal counties and their economic potential, we note that, presently, their level of economic development is far below advances development poles and even below the national average. In our view, the prospect of Romania becoming a safe Eastern and Maritime Border both for the EU and for NATO implies a stronger focus on strengthening the economic capacity of the two coastal counties (Constanta and Tulcea) along with that of the neighbouring counties (Galaţi, Braila). This preoccupation would also create the premises for Romania's west-eastern development, including as a result of a good capitalization of structural funds.

An analysis of natural capital (natural resources), physical capital (technological endowment of commercial companies) and of human capital as well as their contribution to development, lead to the conclusion that these counties have a degree of development compared to the one of the South Region, where they are administratively included, but well below the average of other regions.

We believe that in order to increase the level of development of these counties, measures are needed to create a competitive economic structure in order to attract national and foreign investors, contributing to the stimulation of the geo-economic interest of the region as a whole. Another problem identified by us is that the potential of the Black Sea for stimulating the economic growth in the riparian counties is underutilized despite some projects whose implementation has been discussed over time (see the case of Constanta Port and its connections with other ports in Turkey or Georgia, or its transformation into a storage and distribution point for liquefied gases from the Middle East along with the projected construction of a submarine pipeline for oil transport). Unfortunately, national support for such projects required major financial resources, and for foreign investors their attractiveness was reduced due to the inefficient functioning of the public private partnership (excessive bureaucracy).

The regional economic potential can be identified in several ongoing projects, but they do not yet contribute significantly to the overall economic growth of Romania, nor to the dynamics of the local economy and its increased attractiveness to investors. Their enumeration, in an absolutely personal hierarchy of importance, would be the following: Constanta Port, Cernavoda nuclear power station, wind power fields, offshore oil and gas fields, Galați steel factory. There is also a high agricultural potential of the region, but also a touristic one, which is poorly developed due to the lack of quality of services offered. In our opinion, all the mentioned projects do not benefit from optimal exploitation, international promotion or long-term consolidated partnerships.

4. Conclusion

There is a relevant number of essential questions that have to be answered by the national authorities, giving the vital importance of Black Sea region for Romania's security. Some possible answers have been revealed by documents and public data, while others can only be guessed.

i) Could the precarious situation of Constanta Port (with only three terrestrial infrastructure links that connect it to Europe) be a consequence of the Netherlands’s opposition in order to defend the position of the Rotterdam Port while hindering the Rhine-Danube connection, despite the arguments for the need of such" water highway” crossing Europe and bringing some South-eastern countries out of the current periphery?

ii) Could the perpetual postponement of the completion of Units 3 and 4 of the Cernavoda Nuclear Power Plant be a consequence of Russia's interests? In other words, is this the result of Russian permanent interest to avoid Romania becoming an important electricity supplier for the Republic of Moldova and even Ukraine?

iii) Is the under-utilization of the Danube-Black Sea Canal or poor developed railway a way to undermine the activities of Constanta Port and to minimize its possible position in the flow of products and services from the EU and at the same time an intrinsic way to keep it open just for eastern countries, while stopping it to compete with other Western ports?

iv) Was the privatization of the Galaţi steel factory, driven by IMF pressures on the grounds that it produced a loss of $ 5 million per day a consequence of external pressures? Considering that, given the nature of the buyer who ultimately purchased it (though there was an Indian buyer interested in having a functional combination for the rehabilitation of the entire railway system in India, a program that although known to Romania was not accepted for a direct partnership)?

v) What happened to the future of Sulina Free Zone, which today could have become an active technological park for high-tech products if we had invested in utilities and port infrastructure?

A good example of a successful project in the region is partly represented by Kogalniceanu Airport, but its development has been mostly driven by the partnership with the US and NATO, this project being necessary to receive troops from various theatres of war for rehabilitation and medical care, hence the boom of investments in sanitation and treatment facilities.

Human capital remains a crucial issue for assuring economic security in the region. In Constanta County, the share of the working population in the total population decreased from 70.5% in 2012 to 68.1% in 2017. This situation was also due to the acceleration of temporary and definitive emigration (16.4% in 2016 of the total resident population), especially for age groups 30-34, 35-39 and 40-44. School drop-out in the region also has a rate that exceeds the national average, and non-formal adult education is insignificant, with only 4.5% of the adult population. The average number of employees decreased in 2016 compared to 2008 by 13.7%. On the whole of the county, the annual growth rate cannot be sustainable, being based solely on consumption, while the trade balance remains negative. As far as road infrastructure is concerned, only 65 additional kilometres were achieved in 2010-2015, although the number of registered vehicles increased by 23.2%. As a result of the economic difficulties that affect negatively the incomes, the population of the county is a net borrower of the local banking system. In Tulcea County, the risk related to human capital is due to the massive emigration of young people under 30 years of age. At present 5.3% of the resident population was lost only in the period 2012-2016, and this phenomenon adds to a visible aging process. The risk related to the level of education is represented by school abandonment at a rate above the national average, while non-formal education comprises only 4.5% of the adult population. The active (both occupied and unemployed) labour force decreased by 34% between 1990 and 2016. The economic structure is not competitive, due to the lack of investment and reduced labour productivity. Other negative effects are generated by the location of the population in marginalized areas with limited access to jobs. Road infrastructure has increased by only 15 km in 2010-2016, compared with a 48% increase in the number of vehicles.

Local and central government need to work together in order to make the two counties attractive for investment and turn them into economic development poles. But for achieving this long term goal, a stable and more predictable national strategy is needed. The long-term coherence of the public policies for the development of the Black Sea region is a fundamental issue to ensuring Romania's riparian security.

In our opinion, a road-show promotion of the economic potential of the aforementioned counties along with a correct explanation in public space of their importance for the new security challenges, would be beneficial for boosting the economic growth of the riparian area as a whole.

Geo-economic initiatives should play a major interest in the future configuration of Romania’s governmental policies, given the security challenges and international tensions in the Black Sea area. The creation of so-called "dynamic economic display" has been and remains a good tool for attracting potential economic partners. Such approach is of vital importance since economic partnerships remain a guarantee of confidence among riparian countries for achieving a multilateral security solution, beneficial to all, with the respect of common economic interests to the detriment of approaches dominated by divergent interests.

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[15] INS România

OPPORTUNITIES OF CAPITALIZING ROMANIA’S NEW OFFSHORE GAS RESERVES BY INCREASING DOMESTIC CONSUMPTION AND CREATING A REGIONAL GAS HUB

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Abstract: *This paper aims to analyze the possibility of capitalizing Romania's new gas reserves by increasing domestic consumption as an input for economic growth and creating a regional gas hub. In the first part of the article it will be described the situation of natural gas production in Romania. At the same time, the prospects for possible resources in the Black Sea, concession companies and conditions of concession agreements will be analyzed. In the second part it will be presented the gas hubs in Europe which are relevant for the gas export from the Black Sea and in the last part of the paper it will be analyzed the Romania’s opportunities and chances to create a regional gas hub, from the point of view of the necessary conditions, the advantages and competitors.*

Keywords: *hub, natural gas, policies, analysis*

JEL Classification: *Q30, Q32, Q35, Q48*

1. Introduction

In the regional energy equation, Romania has been, by tradition, a relevant actor in the natural gas industry, and currently, after the announcement of ample discoveries of natural gas in the country's continental platform in the Black Sea, the growth potential in this energy sector is prefigured to be an extremely important one, both by capitalizing its own gas resources but also by an active role in redistributing energy products from regions such as the Caspian Sea, the Middle Eastern Mediterranean to the European market.

Economic interests related to the discovery of crude oil and natural gas reserves in the Black Sea, Caucasus and central Asia have transformed the Black Sea basin into a geostrategic stake for the world's big actors. Valuing the commercial potential of the Black Sea and its position as a bridge between Europe, central Asia, the South-Eastern Mediterranean and the Middle East has led to the involvement in the area of the world’s power factors (USA, Russia, and EU countries). The control and management of this region is, under the current conditions, not only a challenge that arouses interest in the context of fierce economic competition, but also requires the need to harmonise efforts to develop and materialize projects aimed at boosting cooperation and strengthening the energy security.

In 2008, the Romanian Government signed several concession agreements of gas perimeters in the Continental plateau of the Black Sea. The largest concessors are the

Exxon group, OMV Petrom, Romgaz, Lukoil, Black Sea Oil & Gas. In the Neptune Perimeter, which was leased to the Exxon-OMV consortium, a large-scale gas deposit was discovered. The concessors estimated it in 2012 to 40-80 billion cubic meters, then in 2018, revised the initial estimation to 100-200 billion cubic metres, and the specialists from the National Agency for Mineral Resources (NAMR), at over 300 billion cubic metres. Romania annually consumes around 10 billion cubic metres of gas. The reserves in this area would equate to the consumption of Romania over a period of 8-30 years, which would guarantee Romania a long-term energy autonomy. The estimated monetary value is between 30 and 100 billion euros.

The essential challenges for Romania are on the one hand, the revenues that the state could earn from the exploitation of these reserves and on the other, how it can manage and capitalize this gas for the benefit of the country.

2. The evolution of natural gas production in Romania

Natural gas production was one of the most important pillars on which the industrialization of Romania was based, before the 1989 revolution, Romania being among the top 10 natural gas producers in the world. During this time, the annual consumption was of 40 billion cubic meters, more than three times higher than the current one (ZF, 2018a).

This dynamic recorded in the natural gas industry contributed to the industrialization of Romania. Benefiting from important natural gas resources, Romania has primarily used it for domestic economic and social development, as raw material for chemistry and a much cleaner energy source than coal, in contrast to the rest of Europe which used mostly coal as an energy source. It is worth mentioning that in Romania, natural gas secured and is still an important component of household consumption, but not as important as the country's potential gas would have been given. Thus, only 32% of the 8 million households heat up with natural gas. In the '60-'70, Romania exported natural gas to Hungary at a level of 200 million cubic metres annually.

3. Current situation

At the moment, Romania consumes only 11-12 billion cubic metres of natural gas annually. The deep decline of the chemical industry, one of the industries that grew amid this internal wealth, was one of the factors that led to the dramatic collapse of natural gas consumption in Romania.

At the end of 2017, Romania still had natural gas reserves that amounted to 100 billion cubic metres, according to the centralized data of British Petroleum (BP). At European level, Romania has the fourth largest reserve of gas after Norway (1,700 billion cubic meters), the Netherlands (700 billion cubic meters) and the UK (200 billion cubic meters).

In 2017, Romania's gas production was 10.3 billion cubic metres - also the fourth largest in Europe, excluding the Russian Federation. The production registered last year is comparable to that of the years 2008 (10.5 billion cubic metres), 2009 (10.4 billion), 2014 and 2015 (both with 10.2 billion cubic meters).

In 2017 Romania consumed 1.6 billion cubic metres more than it produced. Thus, consumption reached 11.9 billion cubic metres, more than the average of the 2013-2016 period, but less than in 2007 with approximately 2.9 billion and 2.2 billion cubic meters compared to 2008 (ZF, 2018b).

4. Perspectives of Black Sea natural gas resources

Romania's position as a player on the natural gas market will depend more than ever on the ability of the Romanian authorities to promote the national interest in the context where pressures and external interests on market opening are very high. The newly discovered reserves already provide a second or third place in Europe, both in terms of reserves and production.

At the moment, Romania is on the verge of launching new production fronts, from the deep Black Sea area, but according to Romanian legislation, otherwise specific to all concession contracts worldwide, the resulting output returns to the investors, in exchange of **royalties**[1] **and taxes** paid to the concessionary state, if prior to the settlement of the agreement, no other favouring clauses were negotiated, such as acquiring a quota of the extracted production (the so-called sharing of production). Without additional clauses, *investors assumes rights, often exclusive, of exploration, development, sale and export of crude oil/gas extracted from a given area for a specified period of time.*

Resources in the Black Sea represent huge political, geostrategic and financial stakes. Unfortunately, the Romanian State had no access to real data on the results of offshore prospecting carried out over the last few years, the expertise reports up to 2018 presenting amounts that were much lower than the real amounts identified in the deep Black Sea.

5. Advantages and disadvantages for Romania

Despite the pressures that are made in terms of changing the offshore law in a more favourable sense for the multinational companies, and even in terms of additional concessions, the companies will not take everything. But even Romania will not get the proper part. The country will basically win, regardless of the quantity to be extracted, about half of what would have been right to win according to global standards.

If Romania, the rightful owner of the resources would have known before the awarding of concession agreements, the much more important volume of resources, it would have had a major asset to the negotiations in order to request a production settlement agreement, in such a way as to give to the resources owner a share of at least 20% of the production to directly capitalize on, and also to be able to impose much more firmly the other payment conditions.

Although the plans of the companies that extract oil and gas from the Black Sea were partially thwarted by some changes in the content of the offshore law by the

[1] The owner of oil deposits or mineral resources may grant an operating licence to a third party, for which he perceives a resource rent, or a royalty as a percentage of the value of the production or the resulting profits. When a government is the owner of the resources, the license terms and the royalty rate are usually legislated or regulated.

Romanian Chamber of Deputies, there are enough advantages to lead them to continue operations in the Black Sea:

- The royalties were maintained at the 2008 level, respectively between 3.5 and 13%, visibly lower than those practised by other countries: 25% in Bulgaria, between 18 and 40% in Germany; between 19 and 22% in Austria. With regard to taxation of additional revenues, the Netherlands has a tax of 50%, Norway of 53%, UK 62.5%, all higher even than the progressive taxes imposed by the Romanian state;
- The extraction of gas deposits in the Black Sea will certainly begin in the coming years. Exxon and OMV-Petrom have already reserved an entry capacity for 120 billion cubic meters, over 15 years (2021-2035), in the National Transport System, in Tuzla, on the Black Sea coast. 100% of the allocated capacity, for each year, has been reserved, what it proves that the two companies have the firm intention of starting extraction, and then the export.

6. Solutions for capitalizing on the new gas resources. Pros and cons.

With 8 billion cubic metres that would be withdrawn annually on Horizon 2021, Black Sea will almost double the production of Romania's gas. At the moment, the country cannot "swallow" this quantity, the local consumption being only 11-12 billion cubic metres. In these conditions, without a coherent strategy to internalize the most important part of the extracted production, much of the gas could be exported and Romania would be a simple transit pipe for this gas. The high stake, however, is to keep as much in the country as possible, to bring value from exploiting this resource.

How can this be done? By increasing domestic consumption.

A favourable premise is the law provision which stipulates the sale of a 50% share of the production on wholesale centralized markets in Romania in a transparent and non-discriminatory manner. The fact that all participants in the energy exchanges must be registered in Romania in order to be able to trade, will make it harder to export those quantities. On the other hand, however, Romania does not have a competitive market, and the number of traders is relatively low.

But the most important measures should include: the development of the gas distribution network by connecting to the distribution systems of about 1 million new households, the construction of new capacities for the production of electric and thermal energy based on natural gas and/or the conversion of the capacities to gas and, last but not least, the rehabilitation or construction of new capacities in the chemical industry.

With regard to the 1 million consumers who might be able to enter the distribution network, it should be noted that this is a hypothetical situation, because there is no real option from two points of view: rural areas or even small towns are not connected because there is no interest of the large distributors to extend the network, and on the other hand, because it is very expensive to connect, which is not affordable from the consumers point of view. The costs are far too high than the benefits. The state could take over the burden of expanding the network in rural areas, especially now that the legislative framework exists. Gas connection was passed by law to public utilities, and mayoralties and local councils can delegate it to a private person, although it is difficult to assume that municipalities will, within a reasonable period of time, achieve 1 million new gas connections. And even if they do, these new consumption points would only mean about 1 billion cubic metres of gas annually.

The high stake remains the chemical industry, especially the chemical fertilizers industry, the more so as that the fertilizers facilities are out of function and Romania is forced to import large quantities.

The Black Sea companies, especially ExxonMobil, said that it has no investment plans in a local chemical industry, being more interested in the development of the transport network, a sign that they are particularly interested in exporting.

7. Potential hubs in Europe relevant for the export of Black Sea gas

Currently, Austria is considered the main player in central european countries due to its natural gas hub in Baumgarten, and the new project of the BRUA pipeline (Bulgaria-Romania-Hungary-Austria) was viewed by Vienna as a perfect tool in order to consolidate its position on the European gas market (Business Review, 2018).

So, Central European gas hub AG (CEGH) is the most important commercial Hub, a trading centre for natural gas in Central and Eastern Europe. As an operator of the virtual trading point, CEGH opens to international natural gas traders an access path for trading in the area of entry/exit of the Austrian market. In 2017, CEGH reached a total trading volume of 622 TWh of natural gas on the VTP (Virtual Trading Point) Market and 89 TWh on Gas Exchange. Due to this excellent development, CEGH is the leader of natural gas hubs in Central and Eastern Europe.

CEGH works as a trans-regional balancing platform offering trading activities and services for different markets:

- CEGH OTC Market (over-the-counter);
- Products on the Pegasus CEGH Gas Exchange with delivery on Austrian VTP (Virtual Trading Point) offered through the Pan-European PEGAS Platform;
- Czech gas stock market PEGAS CEGH with delivery on Czech VTP in cooperation with PEGAS.

The unique combination of OTC services (over the counter) and products transforms CEGH into a unique counter for gas traders and also into the most important hub in Central and Eastern Europe. The main CEGH success factors are reliability, flexibility, high-performance personalized technology, combined with knowledge of liberalised gas markets.

According to its management, CEGH is a dynamic company that adapts its activities to the special needs of its customers and the market. The company's goal is to continuously expand the range of products to make trade with natural gas easier and more attractive (CEGH, 2018).

8. Opportunities, chances and possible competitors of to Romania’s idea of becoming a regional gas hub

Among the conditions that a country must meet in order to become a natural gas hub are the following: strategic geographic positioning, interconnected transport networks, storage capacities, trading platform, access of multiple supply sources to the hub, a regulatory framework governing the hub. According to the Ministry of Energy, Romania does not lack any of these components. So, Romania already owns all the constituent elements of a natural gas hub. However, all these components must be intensified. These elements that are still in different stages of development and improvement require intensified short and medium-term investment efforts (A3, 2018).

At national level, ensuring energy security as a strategic objective aims to trigger actions to facilitate access to energy resources, greater predictability for external and internal developments, good resource management and ensuring the best solutions. It is necessary to develop strategic partnerships in the energy system on the dimensions of investment, transfer of know-how and security of infrastructure. Romania needs substantial investments in the energy sector in the coming years.

The interconnection projects that Romania is currently party to, with Bulgaria, Hungary, the Republic of Moldova and, in perspective, with Serbia, as well as the participation in the Vertical Corridor, including the main BRUA component, highlight Romania's potential for cooperation and the possibility of establishing a common space between Member States. The Danube and the Black Sea represent two elements of utmost strategic importance, which gives Romania the position of European gateway, whether we are talking about the transit of goods, oil and gas pipelines, electricity transmission networks or financial flows.

According to experts, the necessary support investments are estimated at 15 billion euros. Therefore, a hub can be built, but more important is that Romania generates influence, with participation in the European energy platform where it has the chance to become a key factor. At the same time, with regard to the issue of independence versus energy security, the security involves internal and external interconnection. The new paradigm is connectivity. Infrastructures crossing borders have won the battle with borders. Interconnection provides security even when you have no resources. According to a study published by Deloitte, from the advantages point of view, the creation of a hub in Romania could create all around 30,000 jobs.

It should be taken into account that Romania is already an important player in the sector, independently, with its own natural resources, and a balanced portfolio of projects. But it must maximize its position at regional level. According to Rompetrol company, Romania is missing an articulated strategy for maximizing benefits, as a result of all these strategic advantages, the country benefiting from all the elements (expertise, qualified personnel) in order to develop.

It should also be taken into account that Romania has an ageing infrastructure, about 60% of the pipelines have been in operation for a long period of time and therefore require massive investments. It is estimated that at the level of the 8 distribution operators, about 10 billion euros are needed only to replace all the infrastructure with expired life span. Although this has been one of the main condition imposed by the state to the gas distribution companies, with the occasion of privatization, the investors have delayed it a lot. There is a need for an extremely active dialogue between the private sector and the authorities and a predictable, stable and particularly stimulating primary regulatory framework. Only such a framework can ensure the attraction of resources in order to reach energy security, functional markets and development sustainability.

Mariana Gheorghe, until recently the CEO of OMV Petrom said, within the Profit Growth forum that Romania has the potential to become a regional energy hub, but that she would not hazard to say that this would be accomplished immediately. She said that interconnection is only a necessary, but insufficient condition for Romania to become a regional energy hub. "Currently, Romania has problems with the interconnection to the gas infrastructure of neighboring countries. In addition to the interconnection, a regulatory component, but also a commercial one, is needed. The commercial part depends on how the demand and supply are met, if the two intersect on a route that passes through Romania". In this respect, the former CEO of OMV Petrom declared she is optimistic, following the possibility that, in the coming years, pursuant to a possible decision to start the gas production activity in the Black Sea, Romania would reach the position of producing more gas than the necessary internal consumption.

Competitors

Hungary has recently made two key moves to secure a seat at the table of energy gamers. First, in July 2017, Budapest announced that BRUA, designed to connect Bulgaria, Romania and Hungary with the Baumgarten gas hub, will be completed in Hungary and will not be linked to Austria. While many experts viewed this move as an attempt to ensure Hungary an advantage over Vienna, the second movement raised questions about why Hungary, a country with almost no energy resources, is trying to position itself as a dominant player on the regional energy market (Business Review, 2018).

Greece's gas and oil sector attracts "intelligent" money, thanks to the projects launched and to hydrocarbons discovered in the Eastern Mediterranean. For the Chinese, for example, Greece is at the heart of one Belt, one Road initiative. They chose Greece, especially the port of Piraeus, as their hub for Western Europe (ZF, 2017).

If it takes advantage of the opportunity to become an energy hub, **Greece can become the natural gas inlet gate in Europe from three sources:** from central Asia and Turkey, the Eastern Mediterranean and also from its own resources. But its major chance is that the **US considers Greece essential to ensure the Western energy needs and to restrict Russian influence in the region.**

But if it wants to become a gas inlet gate in Europe, Greece must move quickly to finish its own segment of the so-called Southern Gas Corridor, an initiative by the European Commission to bring gas from the Middle East to Europe, independent of Russia. Construction works on this segment are half-finished, and gas could be pumped from Azerbaijan to Europe by 2020.

Regarding Bulgaria, the geographical position of this country seems to be a more advantageous one in terms of transit routes, by its location in the way of potential gas flows, thanks to: (Energy Center, 2017)

- The transport system operating at 55 bar pressures, interconnected with the transport systems of all its neighbors: Romania, Serbia, Macedonia, Greece.
- The border with Turkey, which allows Bulgaria to become a gateway to EU gas from the Caspian Sea area, Iran, Iraq, Egypt.
- The border (agreements) with Greece, which creates the EU gas entry gate from the area of Israel and Cyprus (via Greece), but also the only route of access to LNG of Southeast European countries, on the Greece-Bulgaria route. It should be noted that the use of LNG will grow strong in the future and the possibility of access to a LNG terminal will have an important role in the development of hubs.
- Access to the possible South Stream route (the route that could be back in actuality, in the situation where Nord Stream 2 will win in the battle despite the strong opposition of USA).
- Last but not least, the European Commission strongly encourages Bulgaria's endeavor to become a gas hub.

9. Uncertainties regarding the creation of an energy hub in Romania

A hub is primarily a meeting space of demand and supply and only ideally the meeting point of several physical gas flows through the related infrastructure. The gas hub is the place where transactions are made freely, transparent and competitive, where speculation is made, it is the place where a market must actually operate. But a market needs, in addition to specific mechanisms, the following conditions: *confidence* from those working (suppliers, traders, etc.), *a sufficiently large number of important traders* (with important financial resources) to eliminate the possibility of influencing the market, *major gas flows* and a *predictable environment* (Energy Center, 2017).

Confidence: Unfortunately, the US does not encourage Romania's aspirations to become a regional gas hub, its interests going rather towards the export version. There is a discreet controversy surrounding the Black Sea gas exploitations whose full content has not been made public. Although the project involving two major American companies seemed to be a success story, a tense situation has been created in the last period. It is natural to have complications in the course of negotiations, but this time it emerged that pressures are exerted on the authorities in Bucharest.

Traders: In Romania there are no traders, except in relatively low numbers, there are wholesalers and retailers who, naturally, only want a functional market up to a level that is controllable by them.

Insufficient storage spaces (about 3.5 billion cubic metres). There are two reasons for this: 1) Romania is a gas producer and 2) Russia that was going to build a huge storage space in Romania gave up, in order to keep Romania's dependence on importing from this country, although this degree of dependence is currently of maximum 5-7%.

Predictability: It is a concept ignored by Romania in several areas.

Gas flows: A Hub is also the meeting place of several gas flows, which are important both in terms of inputs and outputs in the system, and as a competition indicator. Unfortunately, in the near future, Romania is no longer in a position to be transited by large gas flows, due to US intervention that blocked the Nabucco project, relying on Romania's shale gas and especially on the Black Sea reserves. Romania also doesn't have the technical capability to allow the passage of such streams. Romania has an obsolete transport system designed to operate under pressure regimes below the operating pressure of the systems in its vicinity, which does not make it suitable to be used in the transit system.

10. Conclusions

1. The problem of capitalizing natural gas resources in the Black Sea started long before this year, based on a sequence of classified Emergency Government Ordinances, which represent as many acts of neglecting the interests of the Romanian state because, besides the secret character, they were based on *blind* negotiations, respectively, hiding the Romanian side knowing the real amount of possible resources and implicitly depriving it to negotiate better contracts' terms. The bigger are the reserves, the higher are the claims that the owner of the resources can impose.

2. The carried out events related to the voting of the Offshore Law, the hesitation and delay to finalize the decision, shows the lack of firmness of the government in

supporting a project of vital importance for energy security and economic prosperity of Romania (Papatulică, Prisecaru, 2018).

3. The economic, energy and geopolitical stakes of the exploitation of these reserves is so large that it has generated extremely strong external political pressures both from countries whose companies are involved in the project and from and others (the case of Hungary) that without rights on these resources, are lobbying only for their own interests and against Romania' s ones.

4. The current revision of the offshore law must outline some provisions such as the share of production (50%) which would be traded on the internal market, and which should be accompanied by a set of methodological rules to clarify the conditions for traders to be involved in these transactions. It should be noted that there will be no a kind of a buy-back arrangements of gas to the Romanian state at preferential prices, but the quantity will only be traded transparently at real prices on the market, in order to encourage that gas remains in the country and contributes to internal economic development (Papatulică, Prisecaru, 2018).

5. The attitude of the authorities (NAMR, ministries), and especially the governments that were in place, to the problem of capitalizing the gas resources in the Black Sea, shows a kind of a *loser's complex*, negotiating each time against Romanian interests, with or without intent, from the lack of practice in this area, without regard to the fact that Romania had four years to set up a strategy for addressing the negotiations. (The tax adjustment has to be made in 2014-2015, but it was delayed until 2018).

6. It is obvious to assume that Black Sea operators will try to maximize their profits, and even disguise them in various forms, at the expense of the Romanian state's interest. This will not happen immediately, because it is a medium and long-term affair. Romania must do all its calculations and evaluate the gains, but also the losses that can afford. Romania can become the third largest player in Europe as it is as possible it does not matter on the European gas market . Romania can occupy the third place as a volume of exploitation, but will it be a country that will benefit economically from this honorable third place? **This is why** the regulatory framework should have been drawn up thoroughly and more transparently. In reality, things happened the other way around. The Offshore Law was used politically in underground negotiations, and recently, on the last hundred metres, the urgency of its adoption was invoked, with an at least doubtful text (Papatulică, Prisecaru, 2018).

7. Despite the estimated potential for the gas deposits in the Black Sea, the plans of the gas concession companies in this area aim mainly for export, rather than participating in the construction of domestic consumption opportunities. However, Romgaz is the only company that is running a concrete project for the use of new resources internally, through a new power plant.

8. When oil prices are rising (as presently) the resources owners tend to capitalise on the advantages of higher energy prices by imposing higher fees and royalties, but Romania acted against its own interests, by freezing them at the former levels.

9. The interconnection projects we are currently party to, with Bulgaria, Hungary, the Republic of Moldova and, in perspective, with Serbia, as well as participation in the Vertical Corridor, including the main BRUA component, highlight Romania's potential for cooperation and the possibility of establishing a common space between Member States, **with the condition that there is a political will to finalise them, which would expedite our access to regional hub status.**

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ROMANIA'S AGENDA FOR THE PRESIDENCY OF THE EU COUNCIL

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Abstract: *Romania will have the Presidency of EU Council in the first semester of 2019 when Multiannual Financial Framework for 2021-2027 period should be adopted while Brexit negotiations must end and bring a final deal. Romania has to demonstrate a strong political vision on the role of the EU and on the progress of European integration. There are four defined priorities or major themes for Romanian presidency, inspired by the content of Rome Declaration (2017): Europe of convergence (growth, cohesion, competitiveness, connectivity), Europe of safety/security, Europe as a global actor, Europe of common values and how they meet or overlap with some of the 10 priorities established by Juncker Commission and presented in the report on State of the Union 2018 on September 12, 2018. Our paper presents an analysis concerning previous documents, policies and strategies promoted by EU that could support the priorities set by Romania and those of Juncker Commission.*

Keywords: *presidency, EU Council priorities, negotiations, convergence, safety, global actor, common values*

JEL Classification: *E 52, E 62, F 13, F 15, F 22, F36, F 45*

1. Introduction

It has remained less than 2 months until Romania will take over the presidency of EU Council. But the theme - of a crucial importance for Romanian politicians and decision makers, and especially for our diplomats, it is not sufficiently known to the public and it is somewhat absent from the public debate. Not only many citizens do not realize the importance and the magnitude of the subject, but even business environment does not seem too concerned or interested therein. While the misunderstanding of the favorable context created by the Romania's presidency of the EU Council may have little impact on the Romanian economy where most companies have interest and policies on short term, lacking or not being concerned with a long term vision, there are, of course, some people (bureaucrats or public officials) who perform some "backstage" work and get over the general indifference and ignorance, among them think tanks, NGO's, academic institutes, universities, journalists.

A certain public consultation has been organized in Romania this year for the definition of the main priorities during its first-ever presidency of EU Council and some 30 citizen dialogues are going to take place in Romania on this topic. Romanian publication Cursdeguvernare.ro, supported by the National Bank (Romania's central bank), held in June 2018 the conference "Romania at the EU Council presidency: making economic opportunities, the boundary between national interests and EU strategies". At this conference the Chief Economist of National Bank Valentin Lazea said that by taking over the EU Presidency in the first half of 2019 "Romania will need to demonstrate a strong political vision on the role of the EU and therefore how to advance the European project". Valentin Lazea believed that during that period Romania should become "an active player in finding political solutions and technical needs for European construction, at a time of multiple challenges". An official point of view is that Romania should come with its own contribution, especially since one has been spoken increasingly more, including at a high political level, on multiple scenarios of different speeds, in the context of discussions on the EU future. The period of the Romanian Presidency of the EU Council will be characterized by the joint effort of EU member states for finding responses to major challenges for the European project and defining its evolution in the next decade.

One of the issues facing the Romania's presidency, which must be continued and completed in the first half of 2019, is the adoption of the next Multiannual Financial Framework for 2021-2027 period that will involve tough negotiations between Member States. Valentin Lazea believed that "Romania's primary mission is to understand first of all the new philosophy of the EU budget" and to answer the question "What kind of Europe do we want?"

Another difficult issue is related to Brexit negotiations, which have proved extremely complicated so far. Theresa May is under further and strong pressure after the EU rejected parts of her so-called Chequers plan, but a spokesman for the European Commission declared ”what we are trying to do is to negotiate a deal, it's time to pursue these negotiations and bring them to a good end." Chief negotiator of European Union representing European Commission commissioner Michel Barnier has proposed the extension of transition period due to frequent blockages and tough positions encountered in bilateral negotiations. Finally in November 2018 it was agreed a withdrawal agreement and an accompanying political declaration on the future relationship between EU and Great Britain, and Michel Barnier thinks that both parts will have full control over their own legislation and rule-making.

According to the National Bank Chief Economist, Valentin Lazea, for Romania, holding the presidency of the EU Council in the first half of 2019 means:

- Additional efforts for a better knowledge and deepening of all debated files;
- Acting as a honest mediator ("honest broker") among all other 26 Member States;
- Harmonizing positions and smoothing contradictions by applying compromise solutions;
- Preparing a plan B in the event that our priorities will not be reflected in the final document.

2. What kind of future is predicted for the EU?

After the Brexit shock European Union has entered a difficult period of reconsiderations and quests for its integration path with attempts to accelerate economic and political integration. On January 31, 2017 before the Malta informal summit the president of European Council Donald Tusk has identified three main threats endangering the stability of Europe: a) the new geopolitical situation induced by China, Russia and by the new US president, b) the internal situation mirrored by increased nationalist and xenophobic feelings within EU, c) the mood of pro-European elites decreasing confidence in political integration, rallying to populist arguments and doubt/distrust in the fundamental values of liberal democracy. On March 1, 2017 Jean-Claude Juncker has released the White Paper on the Future of Europe containing 5 scenarios. The third scenario *Those Who Want More Do More*, that proposes that the EU-27 should allow to the willing Member States to do more together in specific areas, is a typical two speed Europe scenario. Related to this scenario, it should be noted that several times during 2017 Angela Merkel and Emmanuel Macron pleaded for a two speed Europe while the president of European Commission Jean Claude Juncker has tried, through the White Paper on the Future of Europe and other public interventions, an impossible political balancing between the ideal of unity and salvation of European political project, on the one hand, and the susceptibilities and growing reserves of the founding nations for a too much extended European Union on the other hand.

On the occasion of the celebration of the 60th anniversary of the Rome Treaty it was released a common declaration with 4 objectives:

1. A safe and secure Europe: a Union where all citizens feel safe and can move freely, with secured external borders, with an efficient migration policy, and fight against terrorism and organized crime.

2. A prosperous and sustainable Europe: a Union which creates growth and jobs; with a strong Single Market, with a single currency supporting growth, cohesion, competitiveness, innovation and exchange, with completing the Economic and Monetary Union; a Union where economies converge; a Union where energy is secure and affordable and the environment clean and safe.

3. A social Europe: a Union which, based on sustainable growth, promotes economic and social progress as well as cohesion and convergence, a Union which fights unemployment, discrimination, social exclusion and poverty; a Union where young people receive the best education and training and can study and find jobs across the continent; a Union which preserves our cultural heritage and promotes cultural diversity.

4. A stronger Europe on the global scene: a Union further developing existing partnerships, building new ones and promoting stability and prosperity in its immediate neighbourhood to the east and south, but also in the Middle East and across Africa and globally; a Union ready to take more responsibilities and to assist in creating a more competitive and integrated defence industry; a Union committed to strengthening its common security and defence, also in cooperation and complementarity with the North Atlantic Treaty Organisation, a Union engaged in the United Nations and standing for a rules-based multilateral system, proud of its values and protective of its people, promoting free and fair trade and a positive global climate policy.

The Rome declaration and its objectives inspired the Romania’s agenda for the presidency of the EU Council.

3. Romania’s main fields of interest or priorities for the presidency

Minister-delegate for European Affairs (Foreign Affairs Minister) Victor Negrescu said that Romania will take over the presidency of Council of the EU at a time of great transformation for the future of the European project. Consequently, Romania's performance will be judged by the number of cases closed, admitted Victor Negrescu, who said that there will be 170 legislative files, plus other dozens of non-legislative files. "We hope that previous presidencies from 2018 to finalize many of them, but one may see that common decisions are taken increasingly difficult," said Victor Negrescu. The former minister-delegate Victor Negrescu reviewed the main topics of interests or pillars for Romania’s presidency:

- Europe of convergence: growth, cohesion, competitiveness, connectivity
- Europe of safety/security
- Europe as a global actor

Europe of common values

Deputy Minister announced that Romania will try to promote projects for each of the four pillars, exemplifying by the relaunching of Danube Strategy and creating a network of home affairs attachés.

"We study the possibility of organizing meetings in Moldova, to send an important signal in terms of Eastern Partnership", said Deputy Minister. Victor Negrescu said that the first half of 2019 will be a challenging one, in which "we must be realistic and proposing tangible proposals, leading to prosperity in the lives of everyday citizens."

From January the 1st to the end of June 2019, there will be about 250 meetings in the country and 1,400 in Brussels, as well as major events such as a European summit in Sibiu and ministerial meetings to be hosted by the Parliament Palace in Bucharest

The 10 priorities of the (Juncker) European Commission presented in the report State of Union 2018, which Romanian Presidency should take into account, refer to: 1. A new boost for jobs, growth and investment, 2. A connected Digital Single Market, 3.A resilient Energy Union with a forward-looking climate change policy, 4. A deeper and fairer Internal Market with a strengthened industrial base, 5. A deeper and fairer Economic and Monetary Union, 6. Trade: A balanced and progressive trade policy to harness globalisation, 7. An area of Justice and Fundamental Rights based on mutual trust, 8. Towards a new policy on migration, 9. A stronger global actor, 10. A Union of democratic changes.

4. How Romanian priorities are reflected by EU documents

4.1. Europe of convergence

The report of five presidents (European Commission, Eurosummit, Eurogroup, ECB, European Parliament) from June 22, 2015 revealed significant differences in fiscal policy from euro area, which creates instability for the whole EU and therefore requires substantial progress towards a real Economic Union based on common structural features, to a Financial Union based on a Banking Union and a Union of Capital Markets, ensuring the integrity of the single currency (euro) and risk sharing with the private sector, towards a fiscal union to ensure the fiscal sustainability and stabilization, towards a political union based on democratic accountability, legitimacy and institutional strengthening. There is a common monetary policy in the euro area based on a single currency but there are implemented various economic policies that do not allow real convergence, especially in the absence of a fiscal union.

Real convergence can be achieved with a high rate of economic growth and employment but also requires a deepening of the single market, but sustainable convergence involves structural reforms in order to modernize their economies, i.e. more efficient product and labour markets and stronger public institutions (institutional convergence). On the short-term one may foresee a convergence towards the best performance and practices within the EU, aiming at better governance and achieving resilient economic structures within the euro area. In the medium term real convergence will be based on agreed legal standards and establishing a mechanism to absorb shocks.

On short term progress towards convergence, growth and jobs will be based on four pillars:

- *Creating a system of competitiveness authorities (CA) in the euro area;*
- *Implementation of the procedure for macroeconomic instability;*
- *Greater focus on employment and social performance;*
- *Stronger coordination of economic policies within the restructured European Semester*.

A national body responsible for monitoring the performance and policies of competitiveness has been recommended for each Member State from euro area to assess the dynamics of wages compared to labour productivity and progress with economic reforms aimed at increasing competitiveness, the role played by the public institutions and public policies to support productive companies. Under this system, the European Commission should coordinate national authorities on an annual basis and then should consider the result of this coordination when deciding on measures under the European Semester, in particular, for the Annual Growth Survey and for the decisions to be taken under the Macroeconomic Imbalance Procedure, including activation of the Excessive Imbalance Procedure.

In the medium term real convergence process involves the adoption of common standards focused mainly on labour markets, competitiveness, the business and government, and certain aspects of tax policy (for example, the taxable profit). Specific recommendations for each country and the excessive deficit procedure can be used to monitor progress towards the implementation of these standards, but one needs a depth scientific analysis for adopting standards and specific indicators, such as the flexicurity - combining security and flexibility in the labour market.

Reflection Paper on deepening EMU, published by the European Commission in May 2017 is a continuation of the Report of Five Presidents and brings into question four guiding principles:

a) Employment, growth, social justice, economic convergence and financial stability;

b) Responsibility and solidarity, reduction and risk sharing;

c) EMU and its completion must remain open to all Member States;

d) Decision-making process must become more transparent and democratic accountability must be ensured.

Reflection Paper advances a number of measures and options that may help building a clear vision for deepening EMU until 2025. This would require a general roadmap with clear order of measures, and options presented should include measures in three areas:

firstly would be the achievement of a genuine Financial Union, secondly would be a more integrated Economic and Fiscal Union, thirdly would be anchoring of democratic accountability and institution building in the Eurozone.

Reflection Paper addresses to getting the re-convergence through a more integrated Economic and Fiscal Union. It's *real convergence*, measured by indicators as income level and standard of living, including issues of economic and social cohesion achieved through balanced growth, price stability, full employment, *the nominal convergence* measured by macroeconomic indicators established Maastricht, *cyclical convergence* that is the alignment to the predominant economic cycle. Convergence to resilient economic structure does not necessarily mean harmonization of policies or economic situations, but common approaches and implementation tools appropriate to national specificity.

To achieve a greater convergence one may have in view reinforcing the Community framework, coordination of economic policies and of the use of structural funds, also one needs to improve the capacity for macroeconomic stabilization in the euro area. Single Market and the unions proposed provide a favourable convergence within EU and Eurozone, coordination of national policies impacting on convergence through the European Semester has its role, the same happens with a set of standards for public expenditures and investments in education, for more open and competitive markets for goods and services, for more efficient and equitable system of taxes and benefits, and setting minimum social standards. European Semester Priorities should be linked more closely with the use of structural funds and European investment funds. Community budget may not have by its size a stabilizing effect but may promote the convergence of financial cycle. It may be created a special fund or set payments dedicated to stimulate reforms aiming at convergence.

A Convergence Report is published by ECB at least once every two years or at the request of an EU Member State which would like to join the euro area. Both the ECB and the European Commission issue these reports describing the progress made by non-euro area Member States towards achieving the criteria necessary for a country to adopt the euro. Within European Semester non euro countries must submit to European Commission the "Convergence Programmes", which include additional information about monetary policies and these documents are used by the Commission and by finance ministers to assess whether Member States are on track towards reaching their Medium-Term Budgetary Objectives (MTOs) on the basis of two pillars: structural balance analysis and the expenditure benchmark.

4.2. Europe of safety/security

Within the seventh priority of European Commission from the Report on the State of Union 2018 (12 September 2018) *An Area of Justice and Fundamental Rights Based on Mutual Trust,* it is mentioned that Juncker Commission has made security a top priority and has come up with some initiatives in 2017 to build the foundations for an effective and genuine Security Union. This means plans for civil protection for helping population affected by natural disasters, the fifth Anti-Money Laundering Directive, in force since July 2018, fight against illegal content online of terrorist propaganda, by removing it within 24 hours, strengthening the Schengen Information System, for sharing more relevant information and for making alerts on terrorist suspects, the new European Travel Information and Authorisation System (ETIAS), a strong European Agency for the

Operational Management of Large Scale-IT Systems in the Area of Freedom, Security and Justice, new rules on Passenger Name Record, increasing the security budget to 4 billion euro for 2021-2027 period.

Within the eighth priority of European Commission from the Report on the State of Union 2018 (12 September 2018) *Towards a new Policy on Migration,* one may find some security issues like reinforcing Coast Guard Agency by transforming it into a genuine European Border and Coast Guard with 10,000 people, fight against migrant smuggling and criminal networks on the high seas, stopping irregular migration, implementing successful EU resettlement programmes and a more efficient EU return policy.

4.3. Europe as a global actor

Within the ninth priority of European Commission from the Report on the State of Union 2018 (12 September 2018) *A Stronger Global Actor,* Juncker Commission proposed to increase the external action budget (more flexible and effective) to 123 billion euro for the period 2021-2027. It also proposed an ambitious Western Balkans strategy, it has developed strong relations with all six Eastern Partnership countries, it has provided donor of 11 billion euro for Syrian crisis, it has made efforts for finding political solutions in Northern Africa and Middle East conflicts, supports the full and effective implementation of the Iran nuclear deal, is engaged in promoting security and non-proliferation in Eastern Asia and across the continent, gives support for Colombia, Cuba, Venezuela. EU is the biggest donor of development and humanitarian assistance globally, it has launched the EU's External Investment Plan for African and European neighbourhood countries (44 billion euro in 2020), it has allocated 1 billion euro for EU humanitarian assistance yearly (for almost 120 million people around the world), it has remained a key player in the G7 and G20 formats, it has signed a second Joint Declaration with NATO, it has started to build a European Defence Union, based on a Permanent Structured Cooperation, European Defence Fund (13 billion euro for 2021-2027 period), other programmes, a European Peace Facility (10.5 billion euro).

4.4. Europe of common values

Within the tenth priority of European Commission from the Report on the State of Union 2018 (12 September 2018) *A Union of Democratic Change* Juncker Commission showed its efforts to make the EU more democratic. European Parliament and EU Council accepted Juncker's proposals for revising the rules for funding European political parties by increasing transparency and by improving democratic legitimacy. Commission has already presented some practical measures for improving the connection between EU Leaders and citizens at the next European elections (Citizens'Dialogues and "Spitzenkandidaten"process) and has adopted a new Code of Conduct for the Members of the Commission. The European Commission has enhanced and reformed the role of European Citizens Initiative and now the public may better contribute to the legislative process. Under the subsidiarity and proportionality principles national Parliaments can comment on draft legislation which may be reviewed and improved. European Commission has proposed a mandatory Joint Transparency Register, where almost 12,000 organizations and individuals now appear. European Commission has a special partnership with national Parliaments, European Parliaments and citizens. European Ombudsman, established by the Maastricht Treaty and elected by the European Parliament, plays an important role by issuing decisions and recommendations to European institutions and agencies related to maladministration: administrative irregularities, unfairness, discrimination, abuse of power, failure to reply, refusal of information or unnecessary delay.

Juncker Commission believes that journalists are important actors of democracy and must be protected, there are too many disagreements and disputes between national governments and European institutions full of polemical and often defamatory attacks, Commission firmly opposes to any interference with the rule of law in the Member States and if the rule of law is at risk it should be applied Article 7, respecting the rule of law and abiding by Court decisions, particularly those adopted by the EU Court of Justice are not optional but compulsory. Juncker wants to do more to bring together the East and West of Europe and to end the spectacle of a divided Europe. European Union must also take better care of its social dimension. Juncker rejects unhealthy nationalism and embraces enlightened patriotism because one should never forget that the patriotism of the 21st Century is two-fold: both European and national, with one not excluding the other.

5. Conclusions

Romania has established ambitious and difficult priorities for the presidency of EU Council. Besides unfinished legislative and non-legislative files Romania will face the big files of Europe, aiming at achieving a common security and defence policy, economic development and convergence, finalizing Brexit process, defining financial perspective 2021-2027, where it may have a card to play or a hard word to say, if the negotiations will not deploy as it has been expected because multiple obstacles and opposing positions may arise, reflecting different interests and certain tense relations between some national governments from Poland, Hungary and Romania on one side and European Commission and European Parliament on the other side.

Leaders from France and Germany, and the President and Prime Vice-President of the European Commission threatened with penalties that may be introduced to European funds for the violations of the rule of law, actually an excuse to redirect a part of cohesion funds from Eastern to Southern Europe. Penalizing some new Member States during the next financial framework is sharply contrasting with increasing external financial assistance, especially that offered to African countries.

Romania could prepare a defining project for the EU and Romania, a topic of great impact as the Danube Strategy (SUERD), for which took over the presidency on 18-19 October in Sofia. On 8 December 2010, the European Commission endorsed and published the EU Strategy for the Danube Region, consisting of a Communication and an Action Plan. The four priority axes of the Strategy are: connectivity, environment protection, building prosperity in the Danube region and improved governance.

Romania will face another important challenge during its presidency of EU Council, the elections for European Parliament which will take place in May 2019. European elections will take place amid increasing populist and extremist movements as a result of the great political mistakes made by political leaders and traditional parties, the effects of financial and economic crisis and also due to ineffective and counterproductive bureaucracy promoted by Brussels.

Complicated geopolitical and geo-economic developments deploying nowadays show that Europe must quickly move forward with economic and social integration, especially with the project of fully implementing the Economic Union. For Eastern Europe it is imperative to implement structural reforms and prepare seriously for a rapid accession to the Eurozone.

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CHINA-EUROPE BRI CONNECTIVITY: WHAT'S WRONG, WHAT'S NEXT

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Abstract: *Connectivity is definitely a prerequisite of economic development and China has known and experienced that for millennia. To get rich, this country focussed on developing domestic infrastructure and it now goes further on, committing itself to building infrastructure networks at intercontinental level, under the Belt and Road Initiative (BRI). Naturally, China's proposition to the other countries has embeded its national interests - which is perfectly acceptable up to a certain level – but, in practice, the Chinese companies' actions have pushed their own interests much further, up to the point where their partners have come to the conclusion that the win-win promise of Chinese officials means nothing more than „China wins twice", while for them, China-financed and implemented projects might rather equate with losses and risks. This paper looks at these issues, focussing on what's wrong and trying to envision the way forward (what's next).*

Keywords: *China, Europe, EU, CEE, BRI, OBOR, connectivity, infrastructure, sea ports, railways, investments, win-win.*

JEL Code: *F21, G33, H53, H81, N74, N75.*

1. BRI and some of its implementation hurdles

Connectivity, *infrastructure* and *win-win* have become the buzz words of the recent five years in the rhetoric backing two major Chinese international endeavours of utmost interest for Europe: the largely promoted and most looked at *Belt and Road Initiative* (BRI) and the less widely known, *16+1 Platform*.

Launched in 2013 as "One Belt One Road" (OBOR), the "Belt and Road Initiative" (BRI) – as it has been renamed since 2017 – is a China-designed, China-centric strategy, that aims at re-constructing the ancient Silk Road at the standards of the 21st century and on a much larger scale: it envisions a terrestrial component spanning three continents (the Belt) – Asia, Africa and Europe – and a maritime one, covering the oceans and seas between the three (the Road). The strategy is designed around the idea of increased connectivity as a prerequisite of the countries' economic growth and development and it envisages the construction of extended networks of both hard and soft infrastructure between the three continents and beyond: on the one hand highways, railroads, tunnels, bridges, channels, as well as pipeline, energy and telecommunications networks interconnecting cities, technological and industrial parks, new or modernized ports and airports, and, on the other hand, international trade and transport agreements, financial cooperation mechanisms, institutional building, harmonized policies and standards, as well as enhanced people-to-people relations and cultural exchanges.

As it currently includes (but it isn't limited to) roughly 80 countries, covering about two thirds of the overall world population and involving Chinese investments estimated at a total of about USD 1 trillion (Hillman, 2018a), the strategy is obviously huge in scale, costs and ambitions. But albeit promoted as a global public good that is meant to speed up development and bring prosperity to all the countries involved, the BRI seems to primarily be meeting China's domestic and foreign policy purposes (Box 1), aiming at both pushing further the Chinese supply-side reforms, economic rebalancing and advancement and at reshaping the world economy, international relations and global order according to Chinese interests and goals.

Despite having increasingly captured the world's attention since its announcement, the BRI has largely remained "*…the best-known, least-understood policy effort underway*" (Hillman, 2018 b), that is perceived as "*amorphous*" (Economist, 2016) and non-transparent, short of reliable information, of unequivocal criteria on what should a BRI project be, as well as lacking the necessary definitions, rules and norms to regulate the partnership relations between the involved. While these traits could be interpreted as elements of the strategy's flexibility, they might rather create the appropriate conditions for biased decisions, collusion and corruption, rent-seeking, a tilted playing field and unfair competition.

Box 1: Determinants and aims of BRI genesis

The 2013 advent of the *One Belt, One Road* strategy was brought about by China's economy structural asymmetries and imbalances that had demanded comprehensive supply-side reforms. OBOR seems to have firstly been designed with a view to mitigating China's economic vulnerabilities and inefficiencies by:

- Creating external demand for the home industries burdened with overcapacity - primarily for steel, cement, glass, aluminium, other metals and construction materials;
- Creating external demand for the Chinese construction equipment industries;
- Creating new jobs for the Chinese, both at home and abroad;
- Relocating abroad obsolete, low-technology or too polluting industrial units and restructuring domestic industry and reshaping regional and global value chains, in the process;
- Relocating capacities with lost competitiveness between China's regions, to geographically rebalance domestic economy;
- Closing advantageous agreements with the resource-abundant countries along the BRI corridors and investing in adequate infrastructural connections to ensure the long-term procurement of the necessary commodities for the national economy;
- Creating alternative, safer corridors for China's international transports - primarily for oil;
- Building transport networks that facilitate, shorten and cheapen Chinese delivery of goods to foreign markets, at the transited countries' cost;
- Getting Chinese-financed infrastructure construction contracts for the Chinese designers and builders (simultaneously crowding out any local and/or foreign

competition, with dumping prices underpinned by state subsidies and/or by imposing credit-linked obligations).

- Hastening and supporting the internationalization of Chinese companies, taking over valuable foreign assets in strategic industries, innovative start-ups, units owning intellectual property rights over state-of-the-art technologies, R&D capabilities, renowned brands, extensive and efficient distribution networks, to speed up China's transition to the innovation-led economy;
- Capitalizing on the nation's huge external reserves;
- Fostering an increasingly larger use of the RMB as an international currency.
- Diverting by all these ways a large part of the world economy towards China, rendering the countries in the BRI area "*…more dependent on the Chinese economy, increasing China's leverage over them*" and empowering it to *"…more readily shape the rules and norms that govern economic affairs in the region"* (China Power Team, 2017).

Also, the strategy was designed with the purpose of repositioning China globally, among the great economic powers of our time, increasing its influence, promoting its own model, interests and will and helping reshape the entire global order according to them. Additionally, beneath all these more visible, overlapping layers of interests and goals, there seems to be a deeper, probably even more important, geostrategic and military one, which may explain best China's involvement in extremely unsafe but strategically significant regions, where no investors dare go, and risk large amounts of money on potentially unsustainable projects.

Source: the author

The question of the tilted playing field

It is documented that no less than 89% of all the Chinese-financed transport infrastructure projects in 34 Asian and European countries along the BRI corridors have been assigned to Chinese companies without tendering, leaving only 11% to other contractors (7.6% to the local firms and 3.4% to the foreign ones, other than Chinese). For comparison, in the case of infrastructure projects financed by multilateral development banks – such as the World Bank, or the Asian Development Bank – the distribution of contracts was much more in favour of the local companies (40.8%), with the obvious purpose of generating a strong positive impact on the local economy, while the balance was almost equally shared between Chinese (29.0%) and non-Chinese (30.2%) foreign companies (Hillman, 2018 b).

Moreover, albeit China is truly not meddling in the beneficiary country's "internal matters" (such as, for instance, local reforms, human rights observance, transparency, or even the economic and environmental sustainability of the projects financed), the terms of the loan contracts that Chinese companies offer for infrastructure building do have many strings attached. They usually include a series of preconditions – which may seem quite benign, but not always are –, regarding not only the direct assignment of contracts to Chinese builders, but also the mandatory use of Chinese equipment, materials and labour for project implementation, which leaves almost no chance for a local positive economic impact in terms of job creation, or a significant boost to the local horizontal industries. On the contrary, such terms crowd out local contractors and may even push some of the local producers to bankruptcy on the grounds of subsidized imports from China. Moreover, some other contractual terms, such as *long-term tax exemptions* granted to Chinese firms - as it is the case in Pakistan, for instance -, have created a discriminatory playing field for the local companies, that has virtually put an end to local manufacturing (Chansoria, 2018).

The question of Chinese loan securing

Additionally, Chinese loans are strongly secured against risks by either *sovereign guaranties* from the beneficiary states, or by other contractual provisions that protect against default, such as *collaterals* (e.g. giving China access to local natural resources, or to strategic assets in case of default), or *debt-to-equity swaps for the settlement of the outstanding debt* (i.e. the borrower accepting to yield to the Chinese investor equities in the social capital of the newly-built asset, up to the amount due). The recent case of the deep-sea strategic port of Hambantota in Sri Lanka, which, after being modernized by Chinese firms was not commercially viable, could not earn sufficient returns to service the outstanding debt and had, therefore, to be handed over to the Chinese investor company[1] for 99 years, is a case that speaks clearly about how benign such contractual terms may be. On the other hand, countries such as the EU members in Central and Eastern Europe (CEE11) cannot grant sovereign guaranties, as demanded by China, and risk enlarging their national debt to unacceptable levels according to their previous EU commitments.

The question of cheap Chinese credit

On the other hand, the quite advertised *Chinese cheap credit* is not always that cheap. Given the usual lack of transparency that surrounds Chinese actions, such data are very scarce, but pieces of information still appear. They show that while the interest rates asked for by China for BRI infrastructure loans are sometimes in the range of 2% to 3%, which is below the commercial rates level, they are still much higher than those offered by other competing investor countries, such as Japan[2] (0.25%-0.75%), or those attached to the *soft loans* given by the multilateral development banks[3] (0.25%-3%), and they tend to escalate to 5%, making repayment more difficult (Manuel, 2017).

In other cases, such as that of Sri Lanka (Hambantota) or Pakistan (CPEC[4]) projects, the interest rates have been quite high from the outset, climbing to 6.3%, or even up to 8%-10%, (Economic Times, 2018). On the average, Pakistan, for instance, has to pay annual interest rates of 7%, amounting to values that account for 0.5-1p.p.[5] of the country's entire GDP, so that, by 2024, this country will have to pay back to China almost USD 100 billion (Chansoria, 2018). Chinese loans to Russian companies have been placed at 7% and in South East Asian countries, Sri Lanka included, they went as high as 8.8% (Godement & Vasselier, 2017). A research paper by experts from *William and Mary* estimated at USD 354.4 billion the total Chinese lending between 2000-2014, of which about three quarters had been under commercial terms, and explained that China was successful at getting higher interest rates for loans because it was proactive - offering project ideas and financing without solicitation - and it assumed higher risks that other lenders would dodge (e.g. MDBs in Sri Lanka's case) (Hillman, 2018b).

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[1] China Merchants Port Holdings, a state-owned enterprise.

[2] Japan offered loans for infrastructure building to the Philippines at 0.25%-0.75% interest rates, while China's were between 2%-3% (Punongbayan, 2018). Philippines received offers for Japanese loans at 0.1% interest with 40 years repayment period (Klasa, 2018).

[3] IBRD (World Bank) and ADB infrastructure soft loans are offered at 0.25%-3% interest rate (Economic Times, 2018).

[4] CPEC = China-Pakistan Economic Corridor, one of the six main economic corridors of the BRI.

[5] p.p. = percentage point

Anyway, interest rates don't feature all the cost of Chinese credit. By contract, the level of the interest rate is often linked to either the total value of the project, to the number of Chinese companies involved in its implementation, or to other preconditions: for very expensive projects, such as, for instance, speed train links, the interest rate may be lower, but it may increase quite a lot if the project is only about a railway upgrading[6]; similarly, the larger the number of Chinese companies involved in project implementation, the lower the interest rate for loans. Anyway, the borrower country either loses something or it takes a higher risk, to the advantage of its Chinese partners. Even *zero interest rate loans* given by China may entail other fees and commitments that, in the end, render them considerably more expensive than initially thought.

The question of infrastructure route selection

It is significant to note that, irrespective of the borrower's priorities and interests, Chinese financing is usually offered for specific BRI routes, that primarily meet not the most acute needs of the beneficiary country, but China's goals of optimizing either the transport time and cost of its exports to certain markets (e.g. western Europe), or the safety and efficiency of its imports (e.g. imports of commodities, primarily oil and gas, as in the case of the ports of Gwadar, in Pakistan, or Kyaukpyu, in Myanmar).

Still, one of the best examples in this line of argument remains the case of the highly touted Belgrade-Budapest rail connection which was launched in 2013 as a speed-train project and then adjusted to only a project of upgrading an already existing line. While it hasn't yet started - for a host of reasons, including the disregard of the EU legislation on procurement - and in spite of being "downgraded" to a more modest type of a project, the Belgrade-Budapest rail is still very expensive and contested by Hungarians in terms of its necessity, utility, efficiency in operation, opportunity costs and the time needed for investment recovery.

In an article relevantly entitled "Who benefits from the Chinese-built Hungary-Serbia railway?" Zoltan Voros, a Hungarian scholar from the University of Pecs, rhetorically asks: „Is it beneficial for Hungary to construct this railway with Chinese help? It seems that the project is more ideal for China than for Hungary." The rail will not connect other Hungarian cities in the region, he argues, it will not admit a 200 km/hour speed as announced, it will not reduce the transport time as pretended (due to the rest of the infrastructure connection from Piraeus to Belgrade which is in very bad shape), it will not substantially increase trade flows from the Piraeus port to western Europe. Furthermore, the project will be paid by Hungarians, but it is promoted and known as Chinese. „So, summarizing the project – the author concludes - Hungary is going to upgrade a 152 km railway for roughly \$3 billion, plus interest of between \$500 and \$800 million, to fulfil China's economic vision, with the help of Chinese loans, with the majority of the work done by Chinese companies. According to estimates, it will take between 130 and 2,400 (!) years to make the project profitable for Hungary (Voros, 2018).

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[6] For instance, for the Serbian segment of the Belgrade-Budapest rail, the financing deal offered by China provided for a 4.6% interest rate, reduced to 3% in case over 50% of the equipment used was Chinese, and further on lowered to 2.5% if the deal had in view a more expensive fast train (Godement&Vasselier, 2017).

2. BRI connectivity – mixed outcomes after the first five years

In theory, increased connectivity is the precondition of enhanced economic activity, extended commercial exchanges, higher economic growth and improved living standards. Similarly, the old Chinese wisdom teaches that *if you want to get rich, you should build a road*, while the new Chinese narrative speaks about the *win-win* outcomes of infrastructure building and interconnectivity. In real life, it is not that straitforward, and the way in which quite many of the BRI projects have progressed so far following the contractual terms pushed for by the Chinese lenders, shows that not all the parties win. On the contrary, the Chinese-loan beneficiary countries, especially those that are short of both infrastructure, financial means and bargaining power, may find themselves negotiating with Chinese partners that speak about *win-win cooperation*, but in fact don't take into consideration the host country's needs, trying only to meet their own goals, assuming, if possible, no risks and trying to extract for themselves all the benefits of each deal. That is why some of these host countries have come to „translate" the win-win concept as „*China wins twice*" (Dorsey, 2017). That is also why foreign analysts increasingly speak about a deliberate Chinese policy of extending influence and gaining power by creating indebtedness and economic dependency (*debt trap diplomacy*).

Indeed, reflecting a growing change of heart as to the Chinese financial involvement in their infrastructure development, an increasing number of worried countries are currently attempting at mitigating risks by giving up some of the previously accepted Chinese projects: **Malaysia** has recently halted BRI projects worth USD 23 billion; **Myanmar** has stopped a USD 3.6 billion hydro power station project and wants to substantially scale back plans (and costs of about USD 10 billion!) for a new deep-sea port in the Bay of Bengal (Kyaukpyu), that was of utmost importance for China's oil imports (Bloomberg, 2018a); **Pakistan** has cancelled the USD 14 billion Diamer Bhasha Dam project because of „*the tough financial terms imposed by China*"; **Nepal** scrapped a USD 2.5 billion hydro power station project for „*financial irregularities*" (Voa, 2017) and even in Africa there is a first such case: **Sierra Leone** has just scrapped a USD 318 million Chinese-funded new airport mega-project outside Freetown, contending that „*... it is uneconomical to proceed with the construction of the new airport when the existing one is grossly under-utilized...*" (Dipanjan, 2018).

While Chinese infrastructure investments have been more focussed on Asia, Europe was not forgotten, but on the contrary. Still, in spite of the efforts directed to Europe, there aren't many accomplishments to cite in terms of Chinese loan-based infrastructure investments. The reasons are almost the same as those that have rightfully worried the Asian countries, but, additionally, in Europe there is the EU which, on the one hand, is financing itself infrastructure investment programmes under very competitive terms, based on grants, and, on the other hand, EU has strict rules that function all over its 28 member states and are incompatible with the current Chinese funding model. Therefore, despite setting up and institutionally developing the 16+1 Platform[7], China could not make

[7] 16+1 is a cooperation platform set up in 2012 by China and 16 Central Eastern European and Balkan countries (CEE16): Albania (AL), Bosnia and Hertzegovina (BA), Bulgaria (BG), Croatia (HR), Czech Republic (CZ), Estonia (EE), Hungary (HU), Latvia (LV), Lithuania (LT), Macedonia (MK), Montenegro (ME), Poland (PL), Romania (RO), Serbia (SR), Slovakia (SK), Slovenia (SI). 11 of these 16 countries are EU Member States (CEE11) and 5 (the ones in the Balkans) aren't. After 2013, the 16+1 Platform has turned into an instrument of implementing BRI in Europe.

significant inroads in the European infrastructure building, except for some projects in the Balkans. Most of the CEE11 countries are still reluctant, for both legal and financial reasons (Jakobowski & Kaczmarski, 2017). But even in the Balkan countries - where there are China-financed projects underway for either motorways (in Serbia, Bosnia & Herzegovina, Montenegro, Macedonia and Albania), or for thermo-power stations (in Serbia and Bosnia) - the local impact is mixed, all the host countries piling up considerable debt to China and the smallest one, Montenegro, cited among the eight most vulnerable countries in the world that risk falling into the *debt trap* (Hurley, Morris & Portelance, 2018).

However, albeit in its first five years of BRI implementation, China has a quite modest track record of accomplishments in Europe in terms of infrastructure building, it still has made significant advances in other ways:

(i) It has developed permanent block-train connections between China and Europe, with regular direct freight transport services between Chinese and European cities (the so-called *China Railway Express*, or *China-Europe Freight Trains*);

(ii) It has progressively increased Chinese ownership and/or involvement in the management of a growing number of European and Mediteranean sea ports;

(iii) It has managed a remarkable upsurge in Chinese outbound direct investment (ODI) in Europe, mainly by takeovers of some Western-European high-tech, strategic industrial assets, capable of propelling China's supply-side domestic reforms and its transition to an innovation-led development model;

(iv) It has expanded its influence in some of the European countries (mainly in those where its economic involvement is larger, e.g. in Greece, or in Hungary).

Against the backdrop of China's growing power, larger international involvement and increased assertiveness, coupled with its lack of transparency, all of these forms of increasingly insinuating itself into the European environment have stirred a wave of unease and distrust regarding its real intentions, at both the Union's and individual countries' levels. This is a serious drawback for China-Europe cooperation in general and for the BRI success in particular and, therefore, it should be swiftly, but thoughtfully addressed by the parties.

Has BRI connectivity rendered positive results for Europe? Let's briefly look at the main accomplishments we have previously identified:

(i) China-Europe rail connection: *China Railway Express*.

This endeavour started long before the BRI launch, with China's huge diplomatic effort of negotiating for years the customs agreements with Russia and the other countries on the route, so that trains leaving China could eventually travel through Kazakhstan, Russia, Belarus and Poland to Germany and the rest of Western Europe, using the existing rail infrastructure.

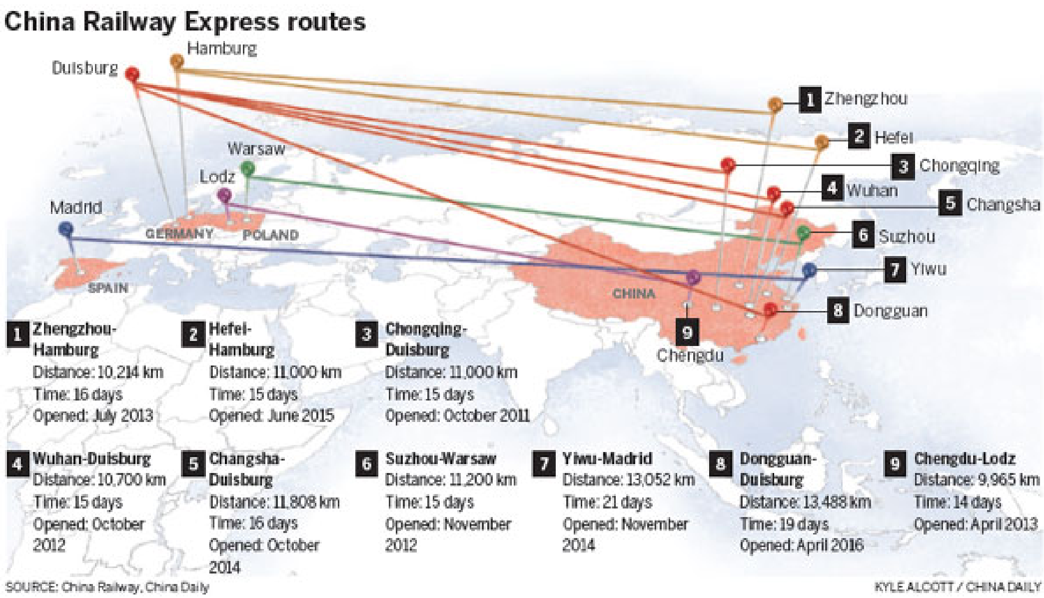
The first *block train*[8] travelled from Chongqing (China) to Duisburg (Germany) in October 2011, covering a distance of over 11,000 km in only 16 days, while the traditional route by sea would have needed 36-38 days (Figure 1). At present, there are 65 rail routes, connecting 48 Chinese cities with over 40 towns in 14 European countries (China Daily, 2018)

[8] A block train is a rail transport method in which all the wagons are fully loaded in the same point and all of them travel to the same destination. It also means that a single forwarder booked the whole train.

and the number of hauls has kept growing year by year: if there have been 2,000 in first three years (between 2013-2015), in 2016, in only one year, their number jumped to 1,800, and further on, to 3,000 in 2017. According to China Railway Corp. forecast, about 4,000 China-Europe hauls will take place in 2018 (Mordor Intelligence, 2018), a level which is consistent with the National Development and Reform Commission's (NDRC) planning, which provided for 5,000 yearly hauls, after 2020 (China Daily, 2016). There have been 10,000 hauls already carried through in the time lapse between October 2011 (the first Chongqing-Duisburg transport) and the end of August 2018 (China Daily, 2018). The upsurge was also impressive in terms of freight volumes, which jumped almost 228 times, from only 1,400 TEU[9] in 2011, to 319,000 TEU in 2017 (Szakonyi, 2018). Moreover, it is worth noticing that there are quite many European cities (e.g. Hamburg, Duisburg, Warsaw, Milan etc.) that receive 3-5 times a week fully-loaded freight trains from China.

What is troublesome, is that on their return journeys, these trains are only partially loaded, or even empty. Sometimes, empty containers are shipped by sea, for cheaper transport back to China, or they are even sold in Europe to save the return trip costs. According to Makocki (2016) the number of trains heading west was double that of the trains heading east. Other, more recent, sources speak about only one train going eastward, for every three trains travelling westward (Szakonyi, 2018). This asymmetry, that keeps worsening, is both a reflection of the existing imbalance in trade flows and a factor which worsens further the trade imbalance between China and its European partners, which, in their great majority, are running growing trade deficits with China.

Figure 1:



Source: China Daily, 22.06.2016

The transport by the "new" rail routes is faster than the sea-borne and cheaper than the air-borne ones, and that influences the structure of the goods transported by cargo trains. In 2016, 35% of the goods exchanged between China and Europe using *China*

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[9] TEU = Twenty foot Equivalent Unit; FEU = Forty foot Equivalent Unit.

Railway Express were raw materials, 17% machinery and equipment components, 14% automotive parts, 12% high tech products, 6% fashion items, 4% capital goods and 2% chemicals (Mordor Intelligence, 2018).

However, beyond any of the exporters' or the forwarders' calculations on the haul structure by cargo type, or even of their reasons to opt for *China-Europe Freight Trains* or not, we should keep in mind that this service would have not been possible in the absence of the *Chinese state's subsidisation*. There is an entire system of subsidies in which both the central government, the regional and the municipal administrations contribute together to covering about 60% of the real cost of the transport along these rail routes. According to the forwarding companies that run such contracts, the real cost of the rail transport for a standard 40 feet container (FEU) from China to Europe raises to about Euro 8,000 (USD 9,430), while the starting level for calculating the transport fee paid by the transport beneficiaries is usually about Euro 3,000 /FEU. The remainder of Euro 5,000 /FEU is represented by the subsidy (Knowler, 2018). The Centre for Strategic and International Studies (CSIS) in Washington also estimates that transport subsidies on these routes are somewhere in the range of USD 1,000/FEU - USD 5,000/FEU depending on the transport specifics, out of the total real transport costs of USD 6,000 to USD 8,000/FEU.

As such, there is no wonder that the amounts spent by the Chinese government on subsidies are huge: the block trains that travelled from China to Europe between 2011 and2016 incurred over USD 300 million in budgetary expenditures (Mordor Intelligence, 2018). Obviously, as long as subsidies continue, the rail transport on these routes has a good chance to continue growing[10] and, consequently, the total cost of subsidisation paid by China will skyrocket. According to Jonathan Hillman, from CSIS, if the transported volume is doubled by 2027, even in case subsidies drop to an average of USD 2,500/FEU, the annual cost of subsidisation would reach USD 927 million (Szakonyi, 2018).

Under the circumstances, the question is for how long will the railway transport subsidisation continue? When the proper conditions for real cost decline and transit sustainability are not yet fulfilled and when, additionally, a major political significance has been attached to the BRI, it seems rational to expect that subsidies will continue to be granted further on. That is worrisome because, like any other interventions of this sort, the rail transport subsidies distort the market, creating a tilted playing field. Chinese subsidies for the exported goods and/or for international rail transport fees encourage unfair competition, promote Chinese exports while the Chinese domestic market remains quite firmly protected, contributing, as such, to aggravating Europe's trade deficits with China. On the other hand, even if the railway transport becomes feasible for more exporters and the transported volumes keep growing swiftly, its weight in the total China-Europe trade will remain marginal and *„...less game-changing than often advertised"* (Hillman, 2018c). The seaborne transport, which accounts for about 70% of the cargo traffic to Europe, will remain for long and by far in the leading position.

(ii) China-Europe maritime connection: the European seaports – a new concern.

[10] The International Railway Union forecasts that the weight of China-Europe freight transport in the overall bilateral commercial exchanges, will double in the next decade (Mordor Intelligence, 2018). Nevertheless, considering that, in 2016, just under 1% of the bilateral trade by volume, and only 2% by value were transported by rail, it is obvious that even if it becomes double by 2027, the rail transport weight into the total China-Europe trade will still remain marginal (Hillman, 2018c).

Because 70% of Europe's foreign trade is seaborne, maritime ports are vital assets for the European economy, for its competitiveness, safety and security. Goods worth about EUR 1,700 billion (USD 1,934 billion) are transported yearly to and from Europe by sea and over 1.5 million people are involved in European ports operation (Pandya & Tagliapietra, 2018). On the other hand, China's most important commercial connections with Europe in terms of volumes (94% of the bilateral trade), values (64%) and competitive transport costs, remain the ones by sea.[11] As such, the ports situated along the world's main maritime trade routes and especially the ones along the lanes that cross the South China Sea, the Indian Ocean and the Red Sea, going through the Suez Channel into the Mediterranean Sea towards the European coasts, are important strategic assets that China is extremely interested to control[12]. The same goes for other sea ports on the Mediteranean shores, such as those in northern Africa, Turkey, or Israel, but, in fact, for any harbours significant for the BRI goals.

According to China's Ministry of transport, in the five years since the BRI launch, Chinese companies have participated in building and operating 42 ports in 34 countries all over the world (Global Times, 2018). Container ports and terminals enjoyed priority and, according to *Drewry Consultants*, their number has increased sharply, from only 8 in 2002, to 30 in 2017. Backed by the Chinese banks' financial support - embodied in cheap loans, that bore only a 2.5% - 3.5% interest rate -, Chinese investors were encouraged to adopt an aggressive bidding attitude to get a foothold in the sea ports of strategic importance to China (Moore, 2017). *Grisons Peak*, a London-based investment bank, revealed in a 2017 study that China's total overseas spending on port projects raised to almost USD 10 billion in 2016 and that, in 2017, Chinese companies were expected to buy stakes or invest in foreign ports a more than double amount, of USD 20.1 bn. (Fang, 2018).

Even before the BRI launch, at the onset of the global financial crisis, but the more so afterwards, the European maritime ports have caught the attention of Chinese leaders, planners and companies, who seized the opportunity of „coming to the rescue" of the European economies in distress, by acquiring (parts of) their strategic assets, seaports included. The case of Greece with its port of Piraeus is the first and the most well-known, but the Chinese offensive on European harbours has continued, so that now, there are many sea ports and terminals, both in the southern and the northern parts of the continent, having the benefit of Chinese stakeholders or investors. According to OECD International Transport Forum (2018) statistics, at present, Chinese SOEs control 10% of the European container terminal capacity. In 2017, they have managed their highest jump in container terminal acquisitions since the launching of the BRI, increasing their share of the overall European container capacity from 6.5%, to 10% in just one year. In 2010, China had only 1% of that capacity. For comparison, it is worth underlining that, thus far, there are no European stakeholders or investors in the Chinese port authorities or harbours and that, according to Chinese law, the European shipping companies are not allowed to inshore navigation.[13]

A *Bruegel* research contends that during the last decade, both Chinese state-owned (SOEs) and private-owned (POEs) companies acquired stakes in eight European maritime

[11] 2016 levels (Hillman, 2018c).

[12] According to NDRC (2017), this route (China-Indian Ocean-Africa-Mediterranean Sea) is the first of the three *blue economic sea passages* under BRI/MSR (Maritime Silk Road). The other two main maritime passages span China-Oceania-South Pacific and the Arctic Ocean, linking China to Europe.

[13] Cabotage transports along the Chinese shores.

ports, some of them ranking in the Top 10 largest ones on the continent[14] by container volume. These eight ports are *Piraeus (*GR), *Vado Ligure* (IT), *Marseilles* (FR), *Valencia* and *Bilbao* (ES), *Antwerp* and *Zeebruegge* (BE) and *Rotterdam* (NL) (Pandya & Tagliapietra, 2018). As such:

In northern Europe, China owns 35% of Euromax, which runs *Rotterdam* (NL), the largest European port, but it also detains 20% of *Antwerp* (BE), the second busiest port after Rotterdam, and 100% of *Zeebrugge* (BE), which has the world's largest RO-RO facility.[15] It also dominates the traffic in the port of *Hamburg*, Europe's third leading harbour, where Chinese goods account for more traffic than that of all the other users taken together (Linden, 2018).

In southern Europe, where the fastest growing ports are, China owns, through its SOEs, 67% of the port *Piraeus*, the largest Greek seaport, 49% of *Vado* (IT), which has the largest refrigerating facility in the Mediterranean, it manages the Spanish ports of *Valencia* and *Bilbao* and it designs a docking bay off the coast of Venice (IT), at *Malamocco*, that will be able to handle large container ships.

Besides the maritime harbours named above, in the southern part of Europe, China and Italy are currently financing - under the Maritime Silk Road (MSR) component of the BRI -, the *Five Ports Alliance*, a partnership in the Northern Adriatic Sea that involves three Italian ports (*Venice*, *Trieste* and *Ravena*), the Croatian port of *Fiume* and the Slovenian port of *Capodistra*. These ports will create a major docking system for large container ships that will also use the offshore platform of the *Malamocco* port (IT), near Venice, to unload the Chinese ships coming through the Suez Channel and distribute their cargo throughout Europe, by rail. The bulk of these goods will travel through Switzerland and Germany to northern Europe. Due to their favourable location, the Adriatic ports will become a priority for China, which will develop them, along with the Greek port of *Piraeus*, into a strategic logistical hub that serves China's purpose of creating the shortest, cheapest and most efficient transport routes to the rich markets of Europe (HSBC, 2018).

In the context, it is worth mentioning that not all of China's attempts of penetrating Europe through the Adriatic ports have been successful. The Slovenian authorities, for instance, have refused a 99 years, USD 1.2 billion lease of *Koper*, a port that would have provided perfect access to Chinese exports through the Brenner Pass into Austria and further on, to the rest of the continent. Nevertheless, in case it works, the *Five Ports Alliance* will probably become an even better solution than Koper, from China's point of view.

The listing of other European ports where Chinese owners and/or investors have been reported to be present, include *Dunkirk-Le Havre, Marseille-Fos and Nantes* (FR), *Marsaxlokk* and *Malta Free Port* (MT), *Klaipeda* (LT) [the port-container terminal], Constanza (RO) [the cereal terminal]. At present, Chinese companies hold stakes in 13 European city ports (HSBC, 2018), but there is an even longer list of ports in Europe or in its neighbourhood where Chinese companies have expressed their interest of getting

[14] Top 10 European seaports by container volume (2016): Rotterdam (Netherlands/NL), Antwerp (Belgium/BE), Hamburg and Bremerhaven (Germany/DE), Valencia and Algeciras (Spain/ES), Felixstowe (United Kingdom/UK), Piraeus (Greece/GR), Gioia Tauro (Italy/IT) and Le Havre (France/FR) (Pandya & Tagliapietra, 2018).

[15] RO-RO = Roll-on/Roll-off multimodal, terrestrial-maritime transport.

directly involved, such as: *Shengjin* (AL[16]), *Varna* and *Burgas* (BG), *Elefsina* (GR), *Trieste* and *Genoa* (IT), *Sines* and *Lisbon* (PT), *Anaklia* (GE[17]) (Fang, 2018; CMA CGM, 2013; Capital, 2016).

On the non-European shores of the Mediterranean Sea, China is also financially involved in the ports of *Somaport Casablanca* and *Tanger Med* (in Morroco), *Port Said* (in Egypt), *Kumport* and *Ambarli* (in Turkey), *Ashdod* and *Haifa* (in Israel) (Fang, 2018; Linden, 2018).

COSCO Shipping Ports (COSCO), belonging to the China Ocean Shipping Group and *China Merchants Port Holdings (CMPort),* which is part of the China Merchant Group, are the two state-owned conglomerates that are most actively acquiring shares and building sea ports or terminals overseas. In fact, they are the first and the second largest Chinese investors in foreign sea ports.

- **COSCO** (Beijing) has invested in 30 seaports around the globe, including the most of the European and Mediterranean ones (*Piraeus, Valencia, Bilbao, Vado Ligure, Rotterdam, Ambarli, Port Said*). *Drewry Shipping Consultants* forecast that, due to its large expansion of recent years, COSCO will become the world's no.1 terminal operator by 2020, but it is highly possible that the company has already been ranking first since the end of 2017, when it might have already overpassed its competitor, the former world leader, Hutchinson Ports (Lupova, 2018).
- **CMPort** (Hong Kong) has acquired stakes ranging between 5% and 85% at terminals at different European harbours - such as *Dunkirk-Le Havre, Marseille-Fos and Nantes* (FR), *Antwerp* (BE) -, or in Europe's neighbourhood: *Somaport Casablanca* and *Tanger Med* (in Morroco), *Ambarli* (TK). It seems that there are also intents of more acquisitions by CMPort along the Arctic shipping route, in ports such as *Klaipeda* (LT), *Kirkenes* (NO[18]) and some ports in Iceland (Duchatel & Duplaix, 2018).
- **Shanghai International Port Group Co. Ltd.** (Shanghai), the exclusive state-owned operator of all the terminals in the port of Shanghai, is another Chinese company interested in getting a foothold in, or around Europe. Its recent successful bidding in Israel, won a concession for 25 years to operate the Bay Terminal of the busiest local port of *Haifa.* This is the second Chinese state-owned port operator present in Israel, after **China Harbour Engineering Company** (Beijing) which built the port of *Ashdod* some 40 km away from Haifa that it now owns (Hao, 2018).

Therefore, China has not only created the so-called *string of pearls* encircling an increasingly worried India by getting control on several ports in the Indian Ocean[19] along the lanes that stretch from the Malacca Straits to the Suez Channel, but it has also managed to extend that *string* around Europe too, by establishing its presence in a growing number of sea ports surrounding our continent in what can be the dangerous embrace of the *„anaconda strategy"*, as Theresa Fallon, a China analyst in Brussels, names it: *„If you*

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[16] AL = Albania (http://www.europeancuisines.com/Europe-European-Two-Letter-Country-Code-Abbreviations)

[17] GE = Georgia

[18] NO = Norway

[19] Gwadar (Pakistan), for 40 years (starting in 2015); Kyaukpyu (Myanmar), for 50 years (2015); Oboch (Djibouti), for 10 years (2016); Feydhoo Finolhu (Maldives), for 50 years (2017), Hambantota (Sri Lanka) for 99 years (2017) (Fang, 2018).

think of China's growth strategy [in maritime ports] – she says – *they've invested all along the peripheries of Europe. So it's like an anaconda strategy: surround and squeeze it*." (Fang, 2018).

While China's investing in the European ports' expansion and upgrading may be, at first sight and in the short run, a positive endeavour - that generates local jobs, increased GDP and budgetary receipts, economies of scale, reduced transaction costs and low freight fees etc. - in the longer run, and reaching sufficient scale, they might become problematic and even dangerous.

The Piraeus experience shows that, besides a local development boost, Chinese investments may lead to the introduction of different labour policies toward port workers, similar to the ones in China (longer work hours, without benefits or job security, straight shifts without breaks, a tough stance towards workers, including firing the ones that had demands) and sometimes they may lead to increased corruption and tax evasion.[20] They may also determine „*pre*-emptive *obedience*"[21]and „*undue political influence"* affecting both the national and the EU decision-making and functioning. Most of the companies that have stakes in the European maritime ports, primarily COSCO and CMPort, are SOEs, with leaders appointed by the communist party, that receive tasks and targets from the party, implement their national policies but „*...are more than simply implementation units of the Politburo's Standing Committee*" (Ibid).

- One of the great risks in the longer run, stems from the fact that having control over port infrastructure gives to Chinese companies the strategic advantage of selecting their business partners, setting the prices and, ultimately, making the rules that all the others will have to observe. This may finally impact the *navigation freedom*.

Another important risk in the longer run is that European shipyards may become the source of state-of-the-art technologies and know-how for upgrading and reviving the Chinese shipbuilding industry[22], a development that may simply lead to creating the Chinese competitors able to replace Europe in the global markets and to determine the gradual extinction of its own industry in the future. This is not a „theoretical threat" as long as: *Fincantieri* (IT) is already assisting *Baochan shipyard* to build cruise ships - a move that endangers not only the Italian firm, but also other European builders of high-end vessels; *Genting Hong Kong* has already taken over the Nordic Yards' three German shipyards in Wismar, Warnemunde and Stralsund, with expertise in cruise vessels building; the Swedish-Swiss *ABB* company is transfering technology and helping China build ferryboats. Moreover, China has already caught up and became a redoubtable competitor in certain segments of the military shipbuilding sector, which the European shipbuilders used to dominate (frigates, corvettes, patrol vessels, submarines and even aircraft carriers).

- Furthermore, some of the host countries of Chinese SOEs also have security concerns. Israel, for instance, is worried by China's presence in the port of Haifa,

[20] "*In April, the European Union and Italian authorities announced they were investigating Chinese-owned firms on allegations that they are run by criminal gangs who were fraudulently avoiding import duties and value-added tax on goods shipped through Piraeus, according Reuters*." (Fang, 2018).

[21] "*It means making decisions with the idea of not upsetting China."* (Ibid).

[22] Chinese shipbuilding industry ranks first worlwide since 2017, but it specializes in low-end, unsophisticated vessels, lagging behind Japan, South Korea, the US and Europe in terms of high-value ships and marine technologies. Europe dominates, at present, high-end shipbuilding global markets.

where there are the country's main fleets, including the nuclear submarines one, while the whole military world is concerned about China's activities in the port of Haifa, considered a strategic location which can be used to keep a close watch on the western fleets passing through the port (Hao, 2018).

- Additionally, against the backdrop of the recently changed (2015) Chinese approach of the national defence, from the traditional concern for the „*offshore defence*", to the new concepts of „*open seas"* and „*far seas protection*", we cannot exclude the question regarding the *dual use,* civil and military, of the maritime ports that China has come to control around the world and, specifically, in Europe. Albeit controlling foreign ports seems to primarily have a commercial motivation for China, the case of the *Oboh* port in Djibouti - China's first military base (2016) -, is very significant and represents, according to Duchatel & Duplaix (2018), „*...a new approach to Chinese presence overseas rather than an exception*", opening the era of China's naval presence globalization. The PLAN's[23] frequent visits to many of these ports (the Chinese warships made over 290 port visits on all continents, between 2003-2017) re-enforces this assumption. They reveal which are China's priority zones of influence and cooperation, as well as the areas earmarked for intelligence collection. As such, in case the foreign ports are entirely controlled by China, they could be anytime switched to military use, especially when their upgrading or building plans had in view such a transformation from the very beginning.
- The picture becomes even more intriguing when also considering the growing Chinese involvement in the *European airports*. Although the phenomenon is not as intense and large-scale as that of the sea ports, it has already recorded, besides failures, a number of significant successes. Chinese entities already own, totally or partially, at least the following European airports:
  - *Tirana,* the largest airport in Albania belongs 100% to China Everbright Limited, since 2017;
  - *Heathrow,* London, the 1st in Europe and the 2nd globally by passenger traffic –China Investment Corporation[24] acquired 10% of the owner company, in 2012;
  - *Manchester* – Manchester Airport Group and Beijing Construction Engineering Group are jointly building the „airport city" (office buildings, hotels, warehouses, advanced manufacturing, logistic centre) in which the Chinese partner owns 20%[25];
  - *Frankfurt Hahn Airport*, an important cargo distribution German centre, is 82.5% jointly owned by the Chinese HNA Group and ADC GmbH (DE), since 2017[26];
  - *Toulouse-Blagnac,* the fourth largest airport in France (where Airbus has its headquarters and is testing its planes) sold, in 2015, a 49.99% stake to a Chinese consortium including the Chinese state-owned group Shandong Hi-

[23] PLAN = People's Liberation Army Navy
[24] China Investment Corporation (CIC) is China's sovereign wealth fund set up in 2007 to invest some of China's external reserves.
[25] https://www.telegraph.co.uk/property/uk/chinese-investment-manchester-property-powers/ .
[26] https://centreforaviation.com/analysis/reports/chinas-belt-and-road-initiative-and-aviation-419638.

Speed Group and the investment company Friedmann Asset Management, based in Hong-Kong[27].

(iii) Chinese acquisitions and China's influence in Europe

According to the BRI declared purpose, outbound investments should be *win-win* endeavours that aim at speeding up development and at bringing prosperity to all the participant countries. If that is the goal, then the priority destination of BRI investments should be the less developed and emerging economies, that strive to catch up. But that doesn't seem to be the case in Europe. Since the 2008 outburst of the global economic crisis, the European landscape of China's outbound direct investments (ODI) has changed hugely in terms of quantities, sectoral structure, geographical reach and distribution. In just a decade, Chinese yearly investment flows to Europe skyrocketed from only USD 840 million in 2008, to USD 42 billion in 2017 and the overall ODI volume reached, over the ten years' interval, a total of USD 318 billion (Le Corre, 2018). Acqusitions have prevailed over greenfield investments (during this time-span, China took over about 360 European companies) and the number of state-owned investors soared much above that of the private-owned ones (2/3 SOEs vs. 1/3 POEs).

The bulk of the Chinese investments in Europe went to the western, highly developed countries, while the Central and Eastern European (CEE16) emerging economies have been only marginal beneficiaries: according to MOFCOM statistics (2017) the ODI stock in CEE16, cumulated just USD 1.67 billion in 2016, which is a few times less than the annual flow into just one of the great western European beneficiaries and, of course, much less than the cumulated amounts invested there by China: UK - USD 70 billion, Italy - USD 31 billion, Germany - USD 20 billion, or France - USD 13 billion (Le Corre, 2018).

In terms of distribution by sectors, Chinese investments favoured either the European high-tech industries (telecommunications, internet/software, semiconductors, electronics, robotics, automotive), infrastructure (traditional and new energy, transport and logistics, property and construction, utilities), or services (finance, commercial services, retail/wholesale, entertainment, health). Looked at by their sectoral structure, the Chinese acquisitions of western European high-tech companies (Table 1), which have been dominant, reveal a strong connection with the fields identified by Chinese planners in the *Made in China 2025* strategy and earmarked as essential for China's advancement to the stage of an innovation-driven economy, able to master the technologies of the future and to dominate their global markets. Consequently, both the geographic and the sectoral distribution of these acquisitions suggest that the main purpose of the Chinese takeovers is that of getting access to breakthrough technologies, as well as to the European research and innovation capabilities, technological and organisational know-how, powerful brands and global distribution networks.

[27]https://www.airport-technology.com/news/newsfrance-sells-49-stake-in-toulouse-airport-to-chinese-consortium-4461847/.

Table 1: Recent Chinese takeovers in Europe

The European company [country](field, rank)	The Chinese buyer	Contract value (USD bn.) (year of conclusion)
Pirelli [IT](tyres, 5th globally)	China National Chemical Corp. (ChemChina)	7.7 (2015)
Avolon [IE](airplane leasing)	HNA-Bohai Leasing	2.6 (2016)
Syngenta AG [CH](agro-chemicals)	China National Chemical Corp (ChemChina)	46 (2016-2018)
Supercell Oy [FI] (internet/software)	Avic Capital Co. Ltd. (managed by Tencent)	8.6 (2016, 86% equity stake)
KUKA AG [DE](industrial robots)	Mideea Group Co. Ltd	4.8 (2016)
Global Switch Holdings Ltd. [UK](telecomunications)	Anxin Trust Co. Ltd.	3.0 (2016, 49% equity stake)
NXP Semiconductors NV [NL](semiconductors)	China Jianyin Investment Ltd.	2.8 (2016)
Skyscanner Holdings Ltd. [UK] (internet/software)	Ctrip.com International Ltd.	1.7 (2016)
EEW Energy [DE](energy)	Beijing Enterprises HoldingLtd	1.6 (2016)
KraussMaffei Group GmbH [DE] (systems for production and processing plastics and rubber)	China National Chemical Corp (ChemChina)	1.0 (2016)
Bio Products Laboratory Ltd. [UK](healthcare)	Creat Group Corp.	1.2 (2016)
KION Group [DE] (materials-handling equipment, trucks, forklifts; 1st in Europe, 2nd globally)	Wechai Power Co. Ltd.	1.5 Gradual acquisition of a 38.25% controlling stake (2006-2016)
Daimler A.G. [DE] (cars, commercial vehicles, engineering, 3rd globally)	Zheijiang Geely Holding Group	9.0 (2018, 9.7% of Mercedes Benz, 2nd car brand globally)

Source: Compiled by the author from media.

Moreover, the high price that the Chinese companies are willing to pay for some of these takeovers also suggests that their motivations don't have a purely economic, but also a strategic nature. They additionally show that, irrespective of their ownership type (SOEs or POEs), these companies benefit from the Chinese state's support so that they can freely act under the guiding principle that no matter how expensive some of these acquisitions may be at present, the benefits they would bring in the long run would turn them into veritable bargains.

As such, some of these deals have scored real records. For instance, the takeover of the Swiss company *Syngenta A.G.* by ChemChina for USD 46 billion, was the most expensive deal signed in the world in 2016 and it implied the payment of the highest amount ever paid by a Chinese company for an acquisition. The takeover of the *Kuka A.G.* by Mideea was the most expensive deal in Germany and also the one that has turned into a wakeup call for that country's leaders as to the risks of losing vital technologies in strategic industries. Still, the stunning takeovers in Germany went on: the 2018 acquisition of a stake in the capital of *Daimler A.G.* by the private-owned Geely Group (which made it the single largest investor in Daimler) was the largest investment by a Chinese company in a global car manufacturer.

It is significant to highlight that, with just one exception (Geelly Holding Group), all the notable deals listed above have been concluded by state-owned companies, with the direct and indirect support of the Chinese state through its banks and sovereign funds, including the ones specifically created for BRI implementation. For instance, the USD 9 billion takeover of the Italian company Pirelli, ChemChina benefitted from the financial support of the Silk Road Fund[28] (Le Corre, 2018). It is not very clear how is this deal complying with the declared purpose of the Silk Road Fund. It rather looks like the Chinese state is simply backing with all its means and tools its otherwise huge and powerful state-owned companies, in implementing China’s global strategies. One way or another, the big Chinese private companies are also supported by the state and involved in putting into effect the governmental policies regarding China's presence in international markets and its repositioning among the great global powers. Moreover, it seems that POEs are required to share data with the Chinese government and to set up party committees that give the government control over company decisions (Reuters, 2018). Obviously, all the interventions of the Chinese state made in favour of its *national champions*, or through them, generate significant market distortions in Europe, as well as on the global stage, and crowd out competitors.

Increasingly more European leaders, especially from Germany, France and Italy, become wary of Chinese takeovers. They warn that Europe is risking to lose its competitive edge if it continues to underestimate the far-reaching impact of losing key technologies in Chinese takeovers. Last April, Germany’s head of domestic intelligence agency said, in a conference, that a sharp drop in China’s cyber espionage activity, that had first puzzled everyone two years ago, was later on understood and explained as a change of approach (and tools) by Beijing, which gave up the focus on cyber espionage in favour of the legal, easier way of accessing German technology by direct takeovers. “*Industrial espionage is no longer necessary if one can simply take advantage of liberal economic regulations to buy companies and then disembowel them or cannibalise them to gain access to their know-how*” he said. (Reuters, 2018).

Europe may also face security risks either from allowing the access of foreign companies to dual-use technologies, or from letting them gain total control on extremely sensitive assets, such as grid companies, nuclear power plants, sea ports or airports. This year, for instance, *China Three Gorges* – a big state-owned energy corporation - tried a USD 11 billion, 100% takeover of the Energias de Portugal (EDP), the largest Portuguese grid company, with subsidiaries in North and South America (Le Corre, 2018). How safe could that be for Portugal’s sovereignty and national security, as well as for the EU and NATO to which Portugal belongs? That is a question that any of the other member countries should honestly answer any time they might be lured with such deals.

The expected abrupt decline in Chinese takeovers after 2016 did not happen. Neither the Chinese government’s control measures to curb capital flight, nor the European’s growing resistance could stop the Chinese appetite for acquisitions in the EU, primarily in

[28] The Silk Road Fund is a USD 40 billion state-owned investment fund of the Chinese government, established in 2014 with the declared purpose of fostering the development of the countries along the OBOR/BRI routes.

the western, technologically developed economies. These went on in 2017 and 2018, at a slower pace, in a more selective and prudent manner and changing focus, from the big and famous companies, to the innovative start-ups and to the high-tech-savvy and creative small and medium size enterprises (SMEs) that make the backbone of the EU manufacturing and economy.

Europe is committed to the free movement of capital, but allowing the control of foreign firms over resources, critical infrastructure, sensitive technologies and information **„...***comes at the cost of technological advances and security and public order in the European Union*" (Reuters, 2018). Europe has to react. Several countries[29] in the EU have developed their own mechanisms for vetting foreign direct investments (FDI), but only a few have put in place systematic screening mechanisms in key economic sectors such as infrastructure, or strategically important high technologies and not many deals have been officially blocked. That is why, for better results, such screening mechanisms should be developed and coordinated at EU scale. The process is underway, but probably it will not advance swiftly, both because the 28 countries have different visions on how to address the issue, and because some of them, that already have, or just wish to have a stronger Chinese capital presence in their economies, are influenced in their decision-making and will oppose measures that might annoy China. To avoid that in the future, the EU will most probably switch from unanimous, to qualified majority votes on sensitive subjects.

3. Conclusions

Connectivity is definitely a prerequisite of economic development and China has known and experienced that, for millennia. To get rich, this country focussed on developing domestic infrastructure and it now goes further on, committing itself to building infrastructure networks at intercontinental and even global level, following the old Chinese saying *„ If you want to get rich, first build a road"*. Obviously, for now, China is the only country that has come up with an undeniably impressive vision on the future progress of humankind, that may answer to many of our needs and concerns. It has also come up with a strategy, the BRI, with financial resources, institutions and mechanisms, with building capacity and capabilities and a long track record of breath-taking achievements in terms of infrastructure building and infrastructure-led economic development.

Naturally, China's proposition to the other countries has embedded its national interests - which is perfectly acceptable up to a certain level – but, in practice, encouraged or not, supported or not by their local and central governments, the Chinese companies' actions have pushed their own interests much further, up to the point where their partners have come to the conclusion that the *win-win* promise of Chinese officials means nothing more than *„China wins twice"*, while for them, China-financed (and/or implemented) projects might rather equate with losses and risks. For the developing and emerging economies, Chinese-financed connectivity under BRI might entail huge debt burdens resulting from newly-built infrastructure assets that often don't comply with their national needs, priorities and interests and don't meet economic rationality, social and environmental requirements. Nevertheless, in case of default, they may incur severe debt

[29] 15 of the 28 member states

settlement formulae (remember Hambantota, or the countries that use their natural resources as collateral for loans).

For the highly developed nations, Chinese investments in various sensitive sectors of their national economies may become both a way of getting a foothold and of extending influence in the local markets and communities, and also a mechanism of draining toward China local valuable knowledge, high-tech know-how resources and innovative capabilities. Such moves, especially the takeovers endanger not only the competitive edge, global market shares, profits and even the survival of these western companies, but they may also harm their economies, future living standards and security.

Until now, the intensified China-Europe railway and maritime connectivity seems to have led to larger bilateral trade volumes, but they have mostly helped China discard more of its overproduction into the European markets, without the long expected further opening of the Chinese domestic market to the European suppliers. That asymmetry, the lack of reciprocity and some of the Chinese policies (e.g. the tool-kit of the traditional industrial policy) have exacerbated the bilateral trade deficits of most of Europe's economies, with China. Furthermore, in the absence of a Bilateral Investment Treaty (BIT), the same asymmetry is also plaguing the China-EU investment relationship, so that, while Chinese investments capitalize on the benefits of a liberal market in Europe, the European investors are still subject to numerous barriers to entry, conditionalities and hardships in China's markets. In infrastructure building, the Chinese banks and companies have mainly targeted the CEE and Balkan countries' areas of Europe (CEE16), not very successfully in the CEE11 - due to the misfit financing model they have come up with -, but with some projects underway in the Balkans, that have unfortunately put some countries in danger of over indebtedness (remember Montenegro).

For all the actors on the international stage, BRI may become a true opportunity as long as all of them, starting with China, do what they say (act in honesty) and say what they do (are transparent), catering for their partners' interests as much as for their own. That does sound quite idealistic, but it is in perfect resonace with the *win-win* concept promoted by China. Is the *win-win* concept too idealistic? For now, it seems that it is, judging specifically by the BRI outcomes in Europe and almost wherever. Is it an idealistic concept, marketed to an open and too naive Europe by a pragmatic, self-interested China, which now *„...approaches Europe with less respect – as a sort of supermarket of opportunities to extract benefits that can help it rise, neutralise opposition to its foreign policy and keep the West from acting as one against it."?* (Economist, 2018). That might be exactly so. Or not?

BRI may be re-formulated and refined to work better and for the benefit of all the countries involved, if China wants to. To succeed, BRI needs to be re-designed and managed as a true multilateral endeavour that observes international principles, rules and norms, incorporates ideas from all the participants considering them all with their specifics and priorities, sharing fairly the risks and benefits among them and observing the requirements of economic rationality, social and environmental sustainability. China needs to restore trust, stir the willingness and enthusiasm of other countries to take part in the BRI, which is not possible without turning the theoretic idea of win-win connectivity from simple rhetoric, into clear facts. If not largely accepted and truly beneficial to all the involved, BRI has a great chance of meeting increasing resistance and backlash, generate discontent, flare up old regional rivalries, as well as hostility to China. On the contrary, if re-designed in a balanced, finely-tuned and less China-centric approach, BRI could indeed change the world to the better. China will have to decide what's next.

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FORTY YEARS OF CHINA'S REFORM AND OPENING POLICY: INNOVATIVE TRANSFORMATION OF SUZHOU INDUSTRIAL PARK AND ITS CONNECTION WITH THE ONE BELT AND ONE ROAD INITIATIVE

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Abstract: *China's National Economic Zones (NEZs) recently have got new drivers for upgrading, innovative transformation as well as expanding new space for international cooperation since the undergoing supply-side structure reform goes to deep and the One Belt One Road initiative has been smoothly and fast implemented. Suzhou Industrial Park (SIP) as a one of most developed NEZs in China is taking this new opportunities to carry out the first open innovative and comprehensive experiment zone in order to realize upgrade version of China's NEZs and provide new model of Suzhou industries zone as a pilot. From the following three aspects, this article makes deep analysis on explaining why Suzhou industrial Park has such an ambitious development goals and how make it successful transition to the open innovative and comprehensive experiment zone: firstly, SIP has become successful owing to the China's reform and opening up policy with a strategic and forward-looking vision; Secondly, how does SIP take the innovative development path to realize the upgrade version of NEZ? Finally, the author predicts that the open innovative and comprehensive experiment will become a new engine to speed up SIP's transformation and upgrading in the future.*

Keywords: *Suzhou Industrial Park, transformation and upgrading, innovation and development, open innovation comprehensive experiment, one belt and one road Initiative, China's reform and opening policy*

1. Introduction

The practice of reform and opening up has proved that China's national development zone is not only a significant test ground to drive regional economic growth, narrow regional differences, optimize industrial structure, introduce foreign capital and practice innovation but an engine of regional economic development. China's National Economic Zones (NEZs) recently have got new drivers for upgrading, innovative transformation as well as expanding new space for international cooperation since the undergoing supply-side structure reform goes to deep and the One Belt One Road initiative is going to be smoothly and fast implemented.

Since the founding of the first NEZ in 1984, the building of economic development zones in China has been highly valued by governments at all levels and the national development zones have come to the ground in all provinces and municipalities. In the 219 national economic development zones throughout the country, Suzhou Industrial Park (SIP) can be regarded as a successful example for the development of parks in China. As the flagship project of the intergovernmental cooperation between China and Singapore, the experimental plot of reform and opening, the demonstration area of international cooperation as well as one of the fastest growing and most international competitive development zones in China, SIP has made a unique achievement which is highly affirmed by the party and government. In 2015, the State Council formally approved SIP as the first state-level comprehensive experimental area for opening and innovation, which has contributed to a new opportunity for the innovative development of the park during a key period of transformation and upgrading. Therefore, it is worth to further discussed at the present stage about SIP's experience in innovative transformation due to its positive role in demonstration and reference to other development zones in our country.

2. The Strategic and prospective Version of the Reform and Opening Up Policy Highlighted by the Development of SIP

2.1. SIP loads the strategic goal of reform and development in terms of introducing foreign capital and developing advanced manufacturing

In the process of accelerating to the opening up and constantly integrating into the international economy, China's economic development is on the fast track with an ascending component in the global economy. In 2010, China's GDP exceeded Japan for the first time and became the second largest economy in the world. The gap of economic scale and development strength between China and the powers such as the United States, Japan, European Union is also shrinking year by year. While the NEZs, the main carriers and development epitomes of China's reform and opening up, have made a crucial contribution to the national economic growth. According to the statistics of the Ministry of Commerce, among the 219 state-level economic and technological development zones, there are 107 in the Eastern part, accounting for the maximum proportion (with the highest share), 63 in the central part and 49 in the West. In 2016, the 219 development zones realized 8313.9 billion yuan of gross regional product, 330.1 billion yuan of foreign investment in actual use and foreign-invested enterprises reinvestment as well as 4760.5 billion yuan of total export-import volume (consisting of 2694.6 billion yuan exports and 2065.9 billion yuan imports). In terms of SIP, founded in 1994, it has made a series of breakthrough progress in attracting investment, processing trade, service trade, technology trade, technological innovation and so on, thus become the engine of economic growth in the South of Jiangsu and the benchmark in the construction of China's Parks. After more than two decades of development, SIP has set up dozens of pilot projects labeled as "the first", marking its gratifying achievements in all aspects.

In the early stage of the construction of SIP, China's economic development confronted many problems, such as the shortage of foreign capital, the weak advanced manufacturing capacity, the lack of high-end technicians and the backward management experience, which restricted our pace of transformation from a traditional planned economy into a market economy. In the early 1990s, our country's attraction to foreign investment was very limited, the (actual) utilization of foreign capital in 1992 only reached 11.008 billion dollars, accounting for 5.7% of the investment in fixed assets. Compared with other factors such as manpower, technology and system, the shortage of funds seriously rrestricted the economic development. In order to coordinate with the national development strategy, SIP has accelerated the introduction and utilization of foreign investment since its establishment. Its 20th anniversary achievements exhibition represented that, by the end of 2013, it had actually utilized 24.8 billion dollars of foreign capital, introduced 136 projects worth hundreds of millions of dollars and 7 projects worth billions of dollars. Besides, there were 91 of World's Top 500 enterprises, which had invested 150 projects in total, as well as 27 headquarters of multinationals and functional organizations settled in the park.

The expansion of foreign investment scale and the introduction of foreign institutions are beneficial for the park to establish advanced manufacturing bases and improve manufacturing capabilities rapidly and achieve a gradient growth in trade with processed goods. The basic period of processed goods trade foundation was started from 1994, when SIP began its construction, to the end of 2001, in the year of China’s accession to the WTO. In the meantime, SIP gathered a number of foreign enterprises with large investment scale and high technical level through carrying out large-scale investment attracting work on the basis of the experience of Singapore. The average investment intensity of enterprises in the Sino-American cooperation zone exceeded 30 million dollars, and the amount of European and American projects accounted for approximately 50%. The processed goods trade in SIP has been in a rapidly developing stage since 21st century. After the adjustment of the share ratio between China and Singapore in 2001, SIP implemented the strategy of "big development, big construction and big investment", thus enterprises funded by Europe, USA, Japan, South Korea and Taiwan quickly entered the park. The volume of processed goods trade also rose 11.5 times rapidly and jumped to 50 billion dollar for the first time in 2008. Nevertheless, due to the international financial crisis, the bottleneck factors that promote the constant expansion of the processed goods trade in the park appeared, such as the greater difficulty of attracting capital, the shortage of land, the rise of production cost, the increasing pressure on environment protection and so on. The favorable factors such as the preferential policy were also decreasing year by year, the extension development gradually came to an end. Therefore, the intrinsic development mode with a characteristic of transformation and upgrading was put on the agenda.

When expanding the processing and manufacturing industry, SIP began to optimize and adjust the industrial structure at the same time. By the end of 2013, the industrial structure system has been formed, taking the high and new technology industry as the leading factor, the emerging strategic industry as the pillar and the modern service industry as the support. While the industrial layout shows a “2+3” pattern, which characterizes the equipment manufacturing industry and the electronic information as the leading production and the nanotechnology application, bio medical, cloud computing and other new strategic industries as the backbone. Moreover, the production of IC industry in SIP accounts for about 15% of the whole country. Generally speaking, the manufacturing capacity of the park is obviously higher than that of its surrounding areas in Suzhou. Its gross value of industrial output in 2013 is 393.042 billion yuan, of which the output of the emerging strategic industries accounts for 56.3% and the proportion of the high-tech industry production reaches 61.1%, 17.7 percent higher than the average level of Suzhou.

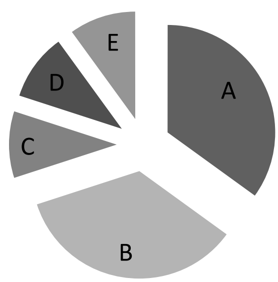
2.3. SIP creates an innovative development mode between countries and promotes practical cooperation in various fields between China and Singapore

SIP is not only a pilot for attracting investment in general, but a useful attempt and a bold exploration for reinforcement and innovation of the relationship between China and Singapore, which has been promoted in all aspects. Since 1994, SIP has become an important carrier for China and Singapore to strengthen cooperation in diverse fields. And the two countries have constantly increased their willingness to cooperate in the trade and investment field.

In October 1999, China and New Zealand signed “the memorandum of understanding on economic cooperation and promotion of trade and investment”, establishing the bilateral consultation mechanism for economic and trade. Since then, the two governments also signed “the agreement on promotion and protection of investment”, “the agreement on the avoidance of double taxation and the prevention of tax evasion”, “the agreement on maritime transport”, “the agreement on cooperation of post and telecommunications”, and “the agreement on the establishment of the Sino-Singapore Investment Promotion Committee”. On January 1st, 2009, the Sino-Singapore free trade agreement came into effect. So far, Singapore has set up economic and trade cooperation mechanisms with Shandong, Sichuan, Jiang, Liaoning, Tianjin, Jiangsu and Guangdong respectively, and a series of fruitful local cooperation have been carried out.

With the establishment and improvement of the Sino-Singapore cooperation mechanism, the scale of bilateral economic and trade cooperation has been expanding. From 2013 to 2015, China had maintained Singapore's largest trading partner and Singapore had also been the largest source of investment in our country for three consecutive years. In November 2015, the Sino-Singapore relation climbed to a new stage, upgrading to an overall partnership. The bilateral trade volume reached $70.42 billion in 2016. Until April 2017, China has become Singapore's largest trading partner as well as the biggest export market and the largest importer.

The Optimized Mode Diagram of “2+3” Industrial Structure



2 means A+B, and 3 means C+D+E

A: Equipment Manufacturing
B: Electronic Information

C: Cloud Computing
D: Application of Nanotechnology
E: Biological Medicine

[1] The Publicity Office of Suzhou Industrial Park: "Development shown by numbers: The 20th anniversary of Suzhou Industrial Park Development and Construction ", August 2014., http://news.sipac.gov.cn /sipnews/yqzt /20140429yq20zn/ssfz/.

2.3. The government management mode guided by the SIP management committee provides policy and system guarantee for the overall planning, rational layout and long-term development of the park

The management mode of the National Development Zones can be divided into the government-leading mode, the government, market and enterprises mixed dominant mode and the enterprise governance mode. In particular, SIP adopts the first mode dominated by SIP Administrative Committee (SIPAC), which is responsible for the whole implementing process and checking work of the park planning. This mode is superior in long-term planning, rational layout and orderly advancement. And the arrangement and implementation of SIPAC embodies the wisdom of the leaders of both countries.

For one thing, the regular consultation mechanism at the level of the two governments ensures timely communication and full consultation on major strategic issues. The foreign ministries of China and Singapore have established a regular consultation mechanism since 1995, and so far 9 rounds of consultations have already been held. On the occasion of the 25th anniversary of diplomatic relations between China and Singapore, the 17th meeting was held by the Sino-Singapore SIP Joint Coordination Council on October 13th, 2015. It focused on six issues, consisting of the third Sino-Singapore cooperation project, the upgrading of the bilateral free-trade agreement, the economic transformation, the financial cooperation, the cultural communication as well as the tolerance and the sustainable development, and a general consensus was finally reached in the meeting.

SIPAC has also set up a number of functional institutions, mainly including the Merchants, the Economic and Trade Development Bureau, the Planning and Construction Bureau, the City Administration Bureau, the Financial and Tax Bureau, the Social Service Bureau, the Local Development Bureau, the Organization and Personnel Bureau and so on. These departments above have operated well according to their separate duties in specific work, coordinated and cooperated with each other to promote the industry development, urban exploitation, social governance, education development, talents introduction and other collaborative work in the park.

The government-leading mode emphasizes the guidance and regulation. The stable policy mechanism and institutional system of SIP contribute to its long-term plan and overall layout, and also provide (a mechanism security) security of mechanism for the blueprint to come true. At the 20th anniversary of the establishment of SIP, the planning drawings of the park were highly consistent with the development status, reflecting "planning ahead" and "planning is the law". At the beginning of the establishment, SIP learned from the experience of planning and construction of Singapore and international advanced cities, compiled a high standard overall development plan, and established a series of rigid restraint mechanisms to ensure that the planning and implementation are consistent, realizing "a plan drawing for twenty years" and ensuring the high science level as well as the sustainability of construction and development.

3. The Creation of an Innovative Development Road for Development Zones in an Upgrading Version

At present, China's economy is in a critical period of transformation. Most development zones are confronted with bottlenecks of development and it is urgent to find a breakthrough in transformation and upgrading. The main problems that industrial parks usually face are: inadequate impetus of endogenous growth, low industrial cluster degree, low utilization rate of resources, environmental damage, slow integration pace of production and city, lack of the innovative vitality of management system mechanism and so on. In particular, after the international financial crisis in 2008, the world economy has (been in) passed through a general recession. Most of the developed countries have suffered an economic decline, a serious shortage of funds and a sharp decrease in foreign investment. As a result, there were a few problems of increasing difficulty of (in) attracting capital, serious shortage of land, rapid increase of production cost, and the widening gap between innovation level and development target in SIP. It is essential for the park to accelerate transformation and upgrading in order to adjust its development strategy, to optimize the industrial structure and achieve the innovation-driven development.

"Transformation", originated from the biology and chemistry field, can amplify or lessen the function of things by adjusting their structure. Since then, "transformation" has been applied to sociology and economics gradually, associating with governments, markets and enterprises. Transformation is actually a process of the optimal reconfiguration of resources, manpower (labour), technology, capital, market and other factors. During the transformation, each industrial park should adjust and optimize the layout according to its own development status, existing weaknesses and potential challenges. As for "upgrading", there is more research from the perspective of economics. In 1990s, most scholars believe that enterprise upgrading is a process for an enterprise to increase its competitiveness and produce high value-added products and step into the capital and technology intensive economic field by means of continuous acquisition of new technologies and new markets. But the upgrading in an industrial level generally consists of three aspects: firstly, the upgrading and replacement of the traditional industrial products; secondly, the rise of new industries, especially the ascending proportion of high and new technology industries; thirdly, the adjustment of the industrial proportion and the continuous development of information and service industry.

There are five main paths of transformation and upgrading for industrial parks. The first path is oriented by industrial transformation and upgrading, which can gradually overcome the problems of many industrial parks in China, such as the outmoded development pattern, relying on the comparative advantages in land, tax and policy, low industrial level and obsolete industrial structure. It can also enhance the momentum of endogenous growth in the park. The second one is led by industrial agglomeration. The sound development of industrial cluster is not only an endogenous force for the sustainable development of industrial parks, but the key factor for the industry upgrading inside parks. The third path is based on the integration of the industry and city, so as to correct the deviation of excessive emphasis on industrial development and ignorance of urban construction as well as promote the construction of the park with production and living functions as a whole. Furthermore, there is also a method with the mechanism innovation and reform. And the final path of transformation and upgrading is oriented by the ecological park construction.

The essence of transformation and upgrading is to break through the limitations of traditional economic growth theory. Although the theoretical system of regional development, which includes growth pole, industrial cluster, innovation-driven development and technology progress theory, has provided theoretical guidance for the development of NEZs in China, the practice of the zones has continuously tested, enriched and perfected the theory. In the initial stage of construction, the zones will develop rapidly with the support of various preferential policies, widening the economic gap with surrounding regions. In order to continue to play their growth roles which promote the balanced growth of neighboring areas, the development zone shall carry out the transformation and upgrading timely, will seek new economic growth points, and will achieve the conversion between the new and the old kinetic energy. According to the theory of industrial agglomeration, the industrial cluster can form industrial chains, may produce the effect of scale economy and may stimulate the regional growth. However, the type of agglomeration industry and the cluster scale may determine whether the park can form core competitiveness and continue to be the engine of regional development. Besides, there are another two key factors: whether the industry is labor, capital, technology intensive, or innovation driven, and if the industrial chain can be formed.

In the transformation and upgrading process, SIP emphasizes eclecticism to achieve the coordinated development of industrial structure optimization, industrial agglomeration, integration of industry and city, mechanism innovation, ecological construction of park and so on, providing a model for our country to build development zones in an upgraded version.

The early plan of SIP is the exploitation of three areas: the new and modern commercial center, the residential and industrial land with the integration of industry and city, and the high-tech industrial park for research and development activities. Since 2001, SIP has developed greater autonomy and begun its transformation and upgrading through the ownership reform. It begins to adjust the periodic target and takes the comprehensive beginning of the construction of Zone Two and Three as an important symbol.

Its main directions of the transformation and upgrading are: gradually converting from the export-oriented economy to the introverted economy; from developing manufacturing industry to promoting manufacturing industry, R&D and innovation in the meantime; from valuing industry to emphasizing both industry and commercial services. Besides, the relief and the cluster of urban functions are also paid much attention apart from development. The effect of its upgrading and transformation is quite obvious at present.

3.1. The industrial structure is constantly optimized, promoting the development of high tech development and greening

Structure adjustment, production capacity and steady growth are the overall objectives for SIP to optimize its industrial structure. To achieve these goals, SIP is dedicated to intensifying the promotion of intelligent and green production capacity and transforming to the high and new technology and emerging industries. After years of exploration and practice, the industrial structure of the park has been continuously optimized, forming a trinity structure of leading industry, modern service industry and emerging industry. In particular, the leading industries dominated by electronic information and machinery manufacturing have become more high-end and intelligent, forming a competitive industrial cluster. The modern service industry, in which the financial industry is a breakthrough, takes advantages of the innovation demonstration base of service trade, and focuses on developing industries branches such as finance, headquarters, outsourcing, literary creation, commerce and logistics, tourism exhibition and so on. Moreover, the emerging industries are guided by nanotechnology and focus on five new industries, consisting of photoelectric (new) energy, biomedicine, fusion communication, software animation games and ecological environment protection. Another three strategic emerging industries are also emphasized, including biomedicine, nanotechnology applications and cloud computing. In 2016, the gross value of the new and high technology industry reached 66.2% of total industry output, and the production of the three emerging industries reached 47 billion yuan, 38 billion yuan and 35 billion yuan respectively.

3.2. SIP aims to transform from factor driven to innovation driven, to accelerate the R&D investment and the introduction of innovative talents, and to accomplish new high-tech industrial clusters such as nanometers

With the increasing competition of science and technology at home and abroad as well as the decreasing inflow of international capital, the era of depending on the labor and capital factors to promote the development of the park is coming to an end. On the basis of the innovation-driven development factors, SIP set(s) up new and high industries with innovative and R&D vitality by means of expanding the R&D investment, contributing to a new situation of transformation, upgrading and innovative development for itself. In 2013, the R&D investment accounted for 3.32% of GDP (and 3.36% of GDP in 2016). And there are 51 national R&D institutions, 147 R&D institutions funded by foreign enterprises, 253 R&D institutions funded by large and medium-sized industrial enterprises, and 6 technology transferring agencies in the national, provincial or municipal level. The R&D investment in SIP has been steadily ascending recently. (The input accounted for 3.36% of GDP in 2016).

So far, the park has built up various scientific and technological carriers covering over 38 million square meters, more than 30 public technical service platforms and more than 20 national innovation bases. There have been approximately 10 national scientific research institutes and 28 Chinese and foreign universities as well as 480 R&D institutions. In the meantime, SIP accelerated a few national innovation projects, such as the experimental stations of nano vacuum interconnection and the International Innovation Park of National Nanotechnology. The innovative clusters such as international science park, creative industrial park, Nanopolis Suzhou and bio-industry park have basically been formed. Nanopolis Suzhou, has absorbed a number of leading figures and institutions in the field of nano research and development, and represented an obvious agglomeration effect since its formal application on January 18th, 2013. By December 2016, in Nanopolis Suzhou, more than 300 thousand square meters had been put into use, and more than 260 nanotechnology related enterprises, including the Suzhou Institute of Lanzhou Institute of Chemical Physics of Chinese Academy of Sciences (CAS), the Suzhou Institute of the Electronics Institution of CAS, the Suzhou Education Center of CAS, Xiexing Group and other major projects. Besides, five international centers of Finland, Holland, Czech Republic, Iran and Canada about (involved in) nanotechnology have also been set up in the park.

3.3. The concept of integration of industry and city penetrated through the building of SIP, promoting the transformation of the neighborhood center from a single business community to a comprehensive service community

The integrated layout of the industrial park and the living community is the crucial planning content of SIP. The first residential area, built in the fourth year after the establishment of the park, not only solves the problem of workers’ accommodation in the park but introduces new talents. The development of supporting facilities for living also keeps pace, improving the modern service function gradually. Particularly, the "neighborhood center" mode, created in 1997, has been transformed from emphasizing single community commerce to providing community integrated service after 20 years of development. The neighborhood center takes the community commerce as an axis and integrates the functions of civilian service, public affairs, entertainments and healthcare services, finally realizing a win-win result of economic and social benefits. In June 2015, the "neighborhood center" brand was recognized as a well-known trademark in China by the State Administration of Commerce and Industry, becoming the first famous brand in the community commercial service. By the end of 2016, the Neighborhood Centers Inc had been managing 18 projects in the park with a total assets valued 3.15 billion yuan, becoming a leading community commercial service chain and a comprehensive service provider on community commerce.

3.4. The building mechanism (construction) is under optimization and innovation, in order to provide policy and guarantee mechanism (guarantee) for the industry, service and external innovation and opening up in the park

Decentralization is aimed at reducing the cost of operation and management and is conducive to innovation and entrepreneurship. Over the years, the park has tried to explore a mode of “one seal for approval, one team for law enforcement, one platform for credit and one network for service”, and found out a way of reform with its own characteristic, providing references for the whole province and other development zones across the country.

On the basis of the reform of the "one license, one code" business registration system in Jiangsu Province, SIP simplifies the approval procedure and carries out the "one window for acceptance, one station for approval" pattern, in which registration is in accordance with "a window for acceptance, a set of materials, a process, a license, a number, a file, a platform". As for the approval affairs involving multi departments, such as registration, enterprise investment and construction projects, the park comprehensively implements the parallel approval. At present, SIP has transferred the 114 items that were originally distributed in 16 functional departments to the Administrative Approval Bureau in batches according to the priority. At the same time, the original 30 offices and 16 seals were reduced to 3 offices and 1 seal, realizing "a window and a seal for approval" and “a seal for 114 administrative approvals”.

4. The Establishment of the Innovation and Opening Up Experiment Area which Injects New Vitality into the Transformation and Promotion of SIP

In order to promote the co-construction of the Silk Road Economic Belt and the maritime Silk Road in twenty-first Century, SIP actively seeks new opportunities to accelerate the transformation and upgrading as well as the innovative development. In October 2015, the State Council approved the general plan for the comprehensive experiment on opening up and innovation of SIP, making the park the first area to carry out this experiment in China. The construction of an open and innovative and comprehensive experimental area will help to implement the innovation-driven development strategy, actively integrates with the free trade areas and copy their successful experience, explores and establishes a new open economy system, provides references for the transformation and upgrading of the national economic and technological development zones.

According to the content of the State Council’s approval, SIP will actively explore the development path of integration for opening and innovation, innovation and industry as well as industry and city, better leading the transformation, upgrading, innovation and development of the National Development Zones. In the future, the development goals of SIP will create an upgraded version of China's development zone, building a world’s top high-technology industry park and promoting the level of internationally open cooperation. Moreover, there are five major platforms to be constructed, namely, one of open cooperation demonstration in a higher level, one of industrial optimization and upgrading demonstration, one of international innovation-driven demonstration, one of administrative system reform demonstration and one of urban comprehensive management demonstration.

The construction of the comprehensive experimental area for opening up and innovation provides new kinetic energy for SIP to blossom again, keeping the development and building of the park always in the forefront of China's reform and opening up in the future. In order to achieve the transformation of new and old engine, the park is exploring an open and innovative path from "introduction" to "going out".

4.1. Establishing the first national demonstration platform of foreign investment services

Due to the Belt and Road Initiative, China's foreign investment amount has grown a lot and the companies have accelerated their pace of going out in recent years. There are approximately 30,000 Chinese enterprises overseas currently. With the expansion of scale, the Chinese enterprises which entered into the international market have been constantly optimized and upgraded. From the initial stage with the major investment based on energy and resources, these enterprises have gradually transformed into more diversified development fields as the building of infrastructure (construction), manufacturing, technological innovation, financial services and other (industries) activities, while the exports changed from the processed product to the whole production chain. Under this circumstances, SIP has set up a national demonstration platform of offshore investment services, to provide policy consulting for corporations’ overseas investments. In order to allow more Chinese enterprises which go abroad and various service institutions to share overseas investment opportunities, understand and prevent investment risks as well as to seek sustainable development cooperation chances, the demonstration platform mentioned-above was formally unveiled at the opening ceremony of “the Summit Forum of China (Suzhou) Overseas Investment and Service in 2015”, which was held on December 15, 2015. A letter of intent considering the establishment of an overseas investment platform in SIP has been signed by the Administration Committee of the park and the Development Bureau of Singapore. According to the content of this letter, a higher level of open cooperation demonstration platform was going to be set up depending on the advantages of Sino-Singapore cooperation in order to steadily implement the "go out" development strategy, better participating in international cooperation and competition in economic and technical fields, and providing comprehensive one-stop services for China's enterprises which go abroad.

This national demonstration platform for foreign investment services is the first and only one in SIP. It will promote the park for actively integrating the superior resources at home and abroad, form and strengthen four functions which consist of strengthening public service, talents training, investment and financing services, international services. The platform can also accelerate its development to a comprehensive one-stop service window with the most complete function, most convenience for investment, most perfect system and most thoughtful service for Chinese enterprises to go out. Furthermore, for the sake of coordinating with the platform and improve the operating mechanism, in November 2015, the Foreign Investment Promotion Committee was established to take special responsibility for the research and promotion work meant to facilitate Chinese foreign investments. With the help of this platform, the enterprises in SIP maintain their enthusiasm for overseas investment. By September 2016, there had been 239 enterprises in the park investing in 372 projects abroad with 8.27-billion-dollar cumulative amount of the new agreed investment by the Chinese side.

4.2. Transforming from "introduction" to "going out", export experience of the park and construct (building up) the economic structure of opening to the world

In terms of (the) radiating and exporting the development experience, SIP has been (trying) involved for many years in China and accumulated a lot of experience. Since 2002, the strategy of "going out" has been implemented. Through the dispatch of backbones and the export of management experience, this strategy has played an active role in establishing the brand of the park, popularizing the experience, expanding the development space and the transformation and upgrading of its own. Besides, it has been involved in building a number of domestic economic development zones, such as Lhasa Economic and Technological Development Zone (aid construction, 2002), Suqian Industrial Park in Suzhou (co-construction, 2007), Nantong Science and Technology Industrial Park in Suzhou (co-construction, 2009), Suzhou-Chuzhou Modern Industrial Park (co-construction, 2011), Huoerguosi Economic Development Zone (aid construction, 2011), Suzhou Industrial Park - Xiangcheng District Cooperative Economic Development Zone (co-construction, 2012), etc.

The development and opening up of the innovative and comprehensive experiment has accelerated the pace of the "going out" strategy implementation of SIP. The construction of the Sino- Belarus Industrial Park is a new beginning for exporting development experience of the park. Since the establishment of the Sino- Belarus diplomatic relation in 1992, the relationship between two countries has continued to develop healthfully and steadily. From the preliminary assumption to the final agreement of the Sino- Belarus Industrial Park, the two governments have fully negotiated and closely collaborated with each other. In March 2010, leaders of the two countries reached a consensus on the establishment of the Sino- Belarus Industrial Park in Belarus. In May 2015, the two heads of state agreed to create a new era of Sino- Belarus comprehensively strategic partnership and proposed that the construction of the industrial park would (be taken as the focus) represent a symbol of cooperation, promoting the park to become a (pearl) a major achievement of the Silk Road Economic Belt as well as a model with mutual benefit and cooperation between the two countries.

The Sino-Belarus Industrial Park has learned from SIP experience for its construction. First of all, the factors such as convenience of transportation are fully taken into account. The park has obvious regional advantages because it is located 25 km east of Minsk City, the capital of Belarus, and close to the Minsk International Airport and the railway, resulting in convenient transportation. Secondly, the successful development and (construction) building experience of SIP is combined with the stable investment environment (of) from Belarus, and the recycling of resources and environmental protection are both laid much emphasis. There is a meticulous early plan as well as a clear objective in blueprint: managing the infrastructure to achieve "seven flowing and one flat", which means road, electricity, water supply, drainage, communication, gas, heat and land that are (natural leveling)necessary (to satisfy) for satisfying the development needs of different types of enterprises. Thirdly, the industrial orientation is clear. The park focuses on the development of electronic information, machinery manufacturing, biomedicine, fine chemicals, new materials as well as warehousing and logistics. Fourthly, the land planning has replicated the successful experience of SIP and (realized) fulfilled the complex functions of production, life and service, contributing to the improvement of endogenous growth power in the park and (he) to the integration of industry and city. According to the plan of functions, the overall greening rate of the Sino-Belarus Industrial Park has reached 50%. According to the living axis and production axis, the whole park can be divided into the northern part for production, manufacture and commercial logistics, the central area for the research and development of science and technology as well as the outsourcing service, the commercial and residential area in the west for hotel, residence, exhibition and wetland parks, and the southern area for development reserve. Moreover, the presidential decree, signed by the president of Belarus in the form of the highest national legislation, stipulates the preferential policies for enterprises which engage in the leading industries in the matter of taxation, land and other aspects, creating one of the most loose policy environment for investors around the world. The shareholdings of the Sino-Belarus Industrial Park Development Inc are clear, consisting of 68% (shares by) for China and 32% (by) for Belarus. Last but not least, in terms of management services, the park spares no effort to build a "one-stop" efficient service system to provide a full range of services in the investment negotiation, company registration, construction, investment and operation as well as other stages, aiming to create one of the best industrial platform for investment and operation for enterprises around the world.

4.3. Explore the international development path of diversification

There are more international development elements injected into the park due to the (construction)building of international technology parks, the practice of systematic international education as well as the establishment of international centers for R&D and innovation. Since 2000, the Suzhou International Science Park has been built in SIP to (emphasize) potentiate R&D investment and technological innovation. And it has become the incubator of Chinese science and technology enterprises, the national software industry base, the national animation industry base, the national innovation and business venture base for overseas talents in a high level, the base of China offshore software engineering project, the Suzhou business center for Chinese overseas students, the demonstration base of China's outsourcing service as well as the Suzhou cloud computing industry base. The high-tech development has enhanced the competitiveness of SIP. As a result, Suzhou has ranked the first in "the most competitive development zone in Chinese cities" for many years. And its comprehensive development index ranks the second place in the national development zones and the top in the provincial new and high-tech zones.

In terms of educational modernization, the park has already developed a path (of educational) for internationalization of education with park characteristics (of the park). At the high point of regional development, a pattern of international communication and cooperation on the basis of regional cooperation mechanism has been preliminarily formed, taking the international friendly schools, international courses in high schools and (the) international communication projects as the pillar and international understanding education as the goal.

5. Conclusions

The development practice of SIP proves that transformation and upgrading of industries and services are mutually reinforcing with innovation and development. Innovation is necessary to promote transformation and upgrading, while the innovation and development (can) may contribute to transformation and upgrading conversely. In accordance with the national policy and development strategy and combined with the advantages and potential of the park, many factors, such as production resources, human capital, innovation technology, intellectual resources and management level, are optimized and properly distributed. (When) For helping the park (removes) to remove the outdated, backward production capacity and increases the advanced, emerging capacity, it is crucial to expand the R&D investment, (introduce) valorize intellectual resources and innovate management system. In the process of expanding overseas investment services and implementing overseas park construction, SIP shall fully understand the local investment environment and risks, and pay close attention to the changing trends of political, economic, social and security factors in the target country.

With the increasing attention of the construction of new think tanks, the role of all kinds of think tanks will be highlighted in the development of the park. To strengthen the cooperation (of) in production, learning and research, it is essential to lay more emphasis on the communication and cooperation between the think tanks and the R&D institutions as well as between the government departments, so as to grasp the situation and better seize the opportunities for development. The comprehensive experiment on opening and innovation will provide new kinetic energy for the transformation, upgrading and innovative development of SIP.

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BOOK REVIEW

REFLECTIONS ON THE ISSUES OF CAPITAL ACCUMULATION AND ECONOMIC INEQUALITY IN WESTERN COUNTRIES AS DESCRIBED IN THOMAS PIKETTY'S BOOK "LE CAPITAL AU XXI^E SIÈCLE[1]"

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Thomas Piketty is a French economist specialized in wealth and wealth inequality, professor of economics at the École des Hautes Études en Sciences Sociales (EHESS) since 2000, at the Paris School of Economics (PSE) (founder) since 2007[2], and at International Inequalities Institute, member of the London School of Economics and Political Science, between 2015 and 2016[3]. He graduated from the École Normale Supérieure (ENS) with a degree in economics and mathematics and obtained his PhD at EHESS in 1993.

In the field of economic inequality, Thomas Piketty has a new approach, combining the historical and statistical perspectives. Thus, he managed to collect, together with his colleagues from the PSE, data on capital accumulation in relation to economic growth over a period longer than two hundred years in France, the country with the most comprehensive archives in this respect, which has data since the French Revolution of 1789. Together with a British economist, Anthony Atkinson, and an American economist, Emmanuel Saez, he succeeded in a similar approach with regard to England and the United States.

Also, the three researchers, together with an Argentinian researcher, Facundo Alvaredo, have set up the World Top Incomes Database (today, World Inequality Database), an institution that aims to provide free access to the widest available data based on the historical evolution of global distribution income and wealth, both within and between countries[4].

The main works of Thomas Piketty are all related to this field of political economy (a name the author himself wishes to reintroduce in order to withdraw terms as economics and economic science as a result of his belief that the economy is a social science): *Les hauts revenus en France au XXème siècle, Inégalités et redistribution, 1901–1998* (Grasset, 2001), *Fiscalité et redistribution sociale dans la France du XXe siècle* (2002), *On the Long run evolution of inheritance. France, 1820–2050* (PSE Working Paper, 2010), *Pour une révolution fiscale* (Le Seuil, 2011) with Emmanuel Saez și Camille Landais.

In our opinion, the book that is the subject of this analysis, Capital in the 21st Century, which became an international bestseller immediately after its translation into English, is primarily a work of economic history that aims to build, for the first time in

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[1] Thomas Piketty, Le capital au XXI^e siècle, Éditions du Seuil, Paris, 2013, 976 p, and Romanian edition, Capitalul în secolul XXI, editura Litera, 825 p., 2015.
[2] https://www.britannica.com/biography/Thomas-Piketty
[3] http://www.lse.ac.uk/website-archive/newsAndMedia/newsArchives/2015/05/Thomas-Piketty-joins-LSE-as-Centennial-Professor.aspx
[4] https://wid.world/wid-world/

history, series of data on the evolution of income distribution and wealth over a period that ranged from the beginning of the nineteenth century to present. These data series are mainly collected from France and England, countries that have established institutions with this objective since the end of the 18th century, but also from the United States, Germany and Japan since the end of the nineteenth century.

The book is the result of research efforts lasting more than a decade and in which the author, together with a team of researchers from the Paris School of Economics, managed to outline the evolution of inequality since the beginning of the industrial revolution.

Also, through the conclusions he draws from the study of the data series, the author gives an answer to the following two questions: the dynamics of private capital accumulation inevitably lead to an increasing concentration of wealth and economic power or the competitive forces of market economy, together with technical progress, lead to a reduction of inequalities and a long-term stabilization? What is really known about the evolution of income and wealth distribution since the eighteenth century and how can we use this knowledge in the 21st century? We also dare to ask two extra questions from the analysis of the data presented in Thomas Piketty's work. First, can be delimited two alternative phases with a continuous succession of the evolution of inequality, one in which it grows and another one when it shows a decrease? Second, how great is the importance of extremely tense debates on the optimal level of inequality, when the level of income and wealth of people situated in the inferior decile from developed countries today supports living conditions that are much higher than those of the middle class 100 years ago, for example?

The structure of the article will be as follows: in the first part we will present a summary of the book and analyze some of the concepts presented here, fundamentals, in our opinion, for the understanding the phenomena of production, reproduction and capital distribution, and in the second part we will present the main reactions, both positive and negative, to the book. The article will end with a section of the author's conclusions.

1. Summary

First, in order to give more color to the arguments used to support his ideas, Piketty uses the characters and intrigues of the novels written by Honoré de Balzac, Jane Austen and Henry James to describe the rigid structure of social classes based on accumulated capital and to illustrate and strengthen its arguments on the uneven distribution of income and wealth in France and England in the late 18th century. He brings to life the tables and charts of the book (many and potentially boring), illustrating Elizabeth Bennet's attempts to acquire a wealthy husband, her only way to avoid poverty or a servile situation as a governess or telling us Rastignac's dilemma: this one, a law student, has two options, to marry a rich but boring heir, and to take a careless life or pursue a career that will probably lead to poverty and mediocrity.

The issue of wealth distribution, the subject of this book, has, in the author's view, an exclusively subjective and psychological connotation, irreducibly political and conflictual, being the result of the intuitive knowledge that each person builds on the income and heritage of the period in which he lives. On this theme there were written books (as we said earlier, some of them mentioned by Mr. Piketty) describing the implications of inequality with a profound sense of reality and an evocative power that no statistics, no scholarly analysis could do equal. Moreover, the author notices: "Fortunately, democracy will never be replaced by the republic of experts."

We ask ourselves, why did he write this book if no economic analysis (to place ourselves strictly within the economic mediocrity in which we claim to be specialists) succeeds to overcome the subjective dimension of each observer? What does democracy represent without grounded and, we dare to say, fundamental choices, as far as possible, for which voters express their preferences? Is not the advance of nationalism and populism the result of rejecting the experts' opinion (from all social spheres) from the simple and devious reason that they see the world deformed from their ivory tower? Should there be no solidarity between experts and mutual promotion, despite divergent professional opinions?

Then the book is structured in four parts dealing with the following topics: a) *Income and capital*: presentation of capital concepts, national income, capital and income ratio, description of the evolution of world income distribution and production, and evolution of the population and production growth rates, from the end of the 18th century to the present; b) *Dynamics of the capital / income ratio*: its long-term evolution and the segregation of national income between labor and capital income, the analysis of the aforementioned report at the beginning of the 21st century, the evolution of the forms of existence of capital in the two centuries studied, in the cases of France and England, then in Germany and the United States, and finally expanding this analysis to the world; c) *The structure of inequalities*: the analysis of the structure of labor and capital gains, the evolution over time of the inequalities generated by these incomes in the United States and France, the dynamics of the inheritance importance over long time and the prospects for evolution of the global patrimony structure; d) *Capital regulation in the 21st century*: breaking out political and normative conclusions on inequality, drafting a social state model for the 21st century, redefining the progressive income tax, drafting a progressive capital tax project and comparing it with other ways of taxation in the process of implementation in some countries of the world and the advancement of a debt reduction solution (considered unsustainable in the long run).

The first part of the book introduces a series of definitions, also explained in terms accessible to non-specialists in the economy, to be used throughout the book: national capital (generally all assets existing on the territory of a country and owned by the citizens of that country), national income (in general, all incomes earned in a country by the citizens of that country), labor income (paid work), capital income (the income obtained by investments made), capital ratio (the ratio of national capital and national income, expressed as a percentage).

Also, in the first part, the author analyzes capital (statically and dynamically), both by studying the components of national income (income from capital and labor) and by introducing the two forces that influence this ratio: falling rates of income growth, especially as a result of the decline in population growth rates, and the normal recovery of capital accumulation following the destructions made by the two world wars.

The author introduces here the **first fundamental law of capitalism**, $\alpha = r \cdot \beta$, (where α represents the share of capital income in national income, r is the average return on capital, and β is the ratio of capital to income, a law that allows the association of the capital stock with the flow of capital incomes. For example, if $\beta = 600\%$ and $r = 5\%$, then $\alpha = 30\%$, that is, if the patrimony[5] represents the equivalent of six years of national income

[5] Here having the meaning of capital, being composed of agricultural land, and residential land, residential and commercial buidings, liquidities and stocks etc.

(as in the case of France at the beginning of the nineteenth century and in the majority of the developed countries at the beginning of the 21st century), and if the average capital yield is 5%, then the share of capital from the national income is 30%. The motivation to consider this equation as the first fundamental law of capitalism is to allow, in the author's opinion, the simple and transparent relationship of the three most important concepts necessary for analyzing the capitalist system: the capital / income ratio, the share of capital in income, and return on capital, even if this relationship is strictly accounting.

In the second chapter, after specifying that growth rates per capita were on average 0.8% per year between 1700 and 2012, of which 1.6% between 1913 and 2012 (as we see, a long-term growth rate of 3% or 4% per year is an illusion), Piketty believes that in the long run, advanced countries are unlikely to have an increase in production higher than 1.5% per year. The average scenario taken into account in the book is 1.2% per year. However, an annual increase of 1% corresponds to a cumulative increase of more than 35% in 30 years, which means that a company with an annual growth of 1% renews itself deeply and continuously; so this increase is more than enough, given the experience of the last 200 years.

The author's explanation of the very different opinions in various developed countries on capitalism in its current form and especially on the commercial, financial and technological globalization is very interesting and extremely plausible. In Europe, especially in the continental part, the post-war decades that have been marked by a very strong state interventionism are still characterized as a tremendous growth period (*les trente glorieuses*, where the average annual growth rate was 4%), the decline of which is most often associated with the economic liberalization movement launched around the 1980s. At the same time, the United States (with an annual growth rate of about 2% in the same period) and the United Kingdom were quickly caught up - or even overtaken, in the latter case - by the countries that had lost the war or who had been affected much more by the war, creating a feeling of frustration among the general public, feeling that played a major role in the emergence of the conservative revolution of Ronald Reagan and Margaret Thatcher, who promised in election campaigns to give up Welfare State (considered to be the cause of the economic slowdown) and to return to the pure capitalism of the previous century.

In fact, if things are studied from a historical perspective, the thirty glorious years are the exceptional period because Europe had accumulated an enormous delay in growth towards United States in the 1941-1945 period, delayed recovered in the next 30 years. Once recovery finished, United States and the countries of Western Europe positioned themselves among the most developed countries in the world, and their growth rates slowed down and became similar. Using the same reasoning, in our view, China's economic growth over the past 30 years would be characterized by the same phenomenon, with the growth rate catching similar values over an average time horizon.

The second part of the book analyzes the evolution of the ratio between capital and national income over the last two centuries in some of the most developed capitalist countries for which have been found sufficient data: France, England, USA, Canada, Japan, Italy and Australia, having the purpose of understanding the way and the reason of the different developments from country to country and continent to continent. It also analyzes the evolution of the national income structure (divided between capital income and labor income) from the end of the 18th century.

France and England followed a similar pattern in which the reported ratio had a relatively constant evolution of about 700% until the beginning of World War I, followed by a steep decline to the 200% threshold and a return and stabilization to the level of 500%. It is noteworthy the very changing structure of capital, with agricultural land having the largest share of capital (approximately 300% throughout the 19th century) until the end of the nineteenth century, when the very strong industrialization forced it to decrease to a share of less than 100% of the national income at the beginning of the 20th century and an almost insignificant one today.

The author believes that the great world wars of the previous century, the extremely powerful economic and political shocks they caused, and the public policies generated by these shocks were the forces that led to a sharp decline in income inequality everywhere in rich countries and not the convergence forces components of the market economy laws.

Germany, although pursuing a similar trajectory to that of France, has a number of differences: the rate of capital, although increased after the Second World War, has only reached around 400%; Germany's assets abroad were much lower than those of France or England by the time of World War I due to the lack of a colonial empire, but are much higher today (around 50% of the national annual income) than those of the countries mentioned above (due to permanent high trade surpluses registered since 2000).

In the United States, the capital has embraced different and unusual forms, for three reasons: first, agricultural land was abundant, and its price was extremely low; second, the population growth from three to 300 million inhabitants in less than two centuries has made capital accumulation smaller than in Europe (its level has not exceeded 500% of national income). Last but not least, the existence of slavery (people treated as objects and not human beings, therefore having a book value, as assets; in 1860 there were 4 million slaves in the US at a population of 30 million people, about 13.3% of the total population) made the structure of capital quite different in America towards the old continent: throughout the nineteenth century, the total value of slaves (considered as assets) was equal to almost a year and a half of national income, about the same values as the land had.

Further, Piketty introduces **the second law of capitalism**, which describes in principle an obvious and very important reality: a country that saves much and grows slowly accumulates a very big stock of capital on the long run. In other words, in a quasi-stagnant society (both in terms of population growth and economic growth), the assets accumulated in the past gain more importance than necessary.

Formally, the law is transposed as follows: $\beta = \frac{s}{g}$, where β represents the capital / income ratio, s is the saving rate of a country, and g is the rate of increase of the national income. The previous definition can be exemplified as follows: if a country saves each year, let's say, 12% (s) of national income and if the rate of increase of national income (g) is 2% per year, then, in the long run, the capital ratio / income (β) will be equal to 600%, meaning that country will accumulate a capital equivalent to six years of national income.

The importance of this law is given by the fact that low variations in the increase rate of national income can have important long-term effects on the capital / income ratio. For example, if the saving rate remains the same (12%) and the growth rate drops to 1.5% and 1% respectively, the capital / income ratio increases to eight years of national income, namely 12 years, which means, in author's opinion, a very large concentration of capital in the hands of a few people, and, implicitly, an increase in inequality. These effects are even more significant because the increase rate of national income is compound by the growth rate of the national income per capita and the population growth rate, namely countries with a demographic stagnation reach more quickly higher levels of capital / income ratio over a period.

In the long run, this law makes possible the explanation of the capital / income ratio recovery over the last 40 years to very high levels after the global wars and the rapid growth phase of the second half of the last century. The same law also explains why the US is gaining less capital than Europe.

Another problem observed by Piketty is that of the national income structure, namely, its division between capital and labor. In the long run, it is noticed that the share of capital in national income increases (from 15-30% in the 1970s to 25-30% in 2010 in developed countries), even though many economists, with Keynes among others ("the stability of capital-labor division is the best established regularity in all economic science"), claim something else. In other words, the author contradicts the mainstream idea that the triumph of human capital over capital defined in the traditional sense (land, real estate and financial) is a natural and irreversible process due to technology and forces in the market economy.

The third part of the paper studies the evolution of inequality at the level of individual incomes and wealth in the analyzed countries and period. Income inequality will be broken down and analyzed separately into three components: the inequality in labor income; the inequality of the ownership over the capital and the resulting income; the link between the first two dimensions, namely, to what extent people with high labor income are the same with the ones with a high capital income.

First, inequality in relation to capital has always been, and continues to be, much higher than labor inequality, the distribution of capital property and the resulting income is almost inevitably much more concentrated than the distribution of incomes from work. This assertion is proven for all countries and all the available data, with no exceptions.

For example, the decile representing the highest earnings is generally 25-35% of the total labor income, whereas the decile representing the highest wealth exceeds 50% of the total heritage, climbing sometimes to 90% of the total wealth in certain countries. Moreover, half of the lowest-paid people receive between 25% and 33% of total labor income (roughly equal to the highest decile), while 50% of the people with the lowest wealth hold no more than 10% of the total wealth.

In terms of labor inequality, a significant difference can be observed between the more egalitarian (Scandinavian) countries and the United States: the upper centile achieves 20% of total labor income in the first countries and 35% in the United States, the 40% situated in the middle class earn 45% and respectively 40% of the revenues, and the poorest 50% earn 35% and 25% of the total labor income.

As a parenthesis, it worth mentioning that, from a methodological point of view, Piketty subscribes to a series of experts' opinions on inequality who find it inconclusive to use the Gini coefficient, one of the most commonly used synthetic indicators in official reports and public debates. The reasons are that it is impossible to sum up a multidimensional reality through a one-dimensional indicator without a leveling and loss-making simplification, and that this coefficient does not distinguish inequality from labor and inequality in relation to capital. That is why the author uses the distribution tables showing the weights of the different deciles and centiles both in the total income, and in the total wealth, but also because these distribution tables are much easier to be understood by the non-specialist reader.

From the point of view of the evolution of the income structure, the contemporary society has moved from a society in which the upper centile was heavily dominated by annuitants, to a society in which the top of the revenue hierarchy consists predominantly of people who earn labor income. Moreover, there are several groups in the upper decile, the poorest half of it being constituted of 80-90% of people whose income is based on the salary (super managers).

Another point worth mentioning, the most important in the case of unequal income from work, is that of the emergence of super managers, namely, a group of people who lead large companies that have reached extremely high incomes, not seen in history. For example, in the United States, in many companies, at least five people in each company have an annual remuneration that places them in the top 1% of revenue ($ 352,000 in 2010) or even the highest 0.1% of revenue ($ 1.5 million in 2010).

The most important reason for producing this "mutation" is generally considered to be the tracking race between education and technology, built on two hypotheses: (a) the salary of an employee is equal to his marginal productivity; (b) the productivity depends above all on his qualification and the status of demand and supply of similar qualifications in a company. The author disagrees with this explanation, considering that the concept of individual marginal productivity is poorly defined, being transformed into a purely ideological construction that allows the justification of a higher status.

Instead, the author offers his own explanations for this growth. The first is "meritocratic extremism", namely, the need of the American society to designate the winners themselves and to offer them more extravagant remunerations as they seem to be elected due to their own merits. However, Piketty believes, above all, that the main explanation is the massive reduction of the upper-income marginal income tax in the Anglo-Saxon countries since the 1980s, which has completely transformed the way managers are paid, and they are much more stimulated to struggle to get important increases.

The author signals the emergence of a neglected reality, namely the patrimonial middle class (assuming we divide the society into three categories: the richest 10% of the citizens, the next 40% and the poorest 50%), considered the most important structural transformation of wealth distribution in developed countries in the 20th century. This intermediary group in the wealth hierarchy has become clearly wealthier than the whole poorest half of the population, accounting for between a quarter and a third of the national wealth in all developed countries. The reason for the emergence of this middle class is the introduction in the last century of massive taxation on capital and its associated income, one of the most beneficial measures ever taken by states, the author considers.

Also, it deserves noting the total change in the perspective of inequality in the United States over the course of 100 years: when around 1910, the level of inequality in the United States reached the level in Europe, due to the accumulation of unprecedented industrial and financial assets, public perception was of worrying because their country could lose their innovative and egalitarian spirit. This fear partly explained America's invention of progressive taxation on very large inheritances and incomes considered excessive. Today, the excessive American inequality is described as a condition of entrepreneurial dynamism, being an opportunity of pride, as Piketty notes: "The modern meritocratic society, especially in the United States, is much harder for losers because it tries to justify domination by justice, virtue and merit, as well as the insufficient productivity of losers", although the reality is very different, luck and the environment of origin being extremely important, in our opinion.

Wealth inequality is considered very important by the author because of its long-term impact, especially in the actual context of increasing of current capital / income ratio (even if the level of this ratio has not yet reached the level from the early 20th century) and slow growth. This situation is more worrying than the process of divergence induced by the rise of super-executive’s wages, which remains a geographically restricted reality.

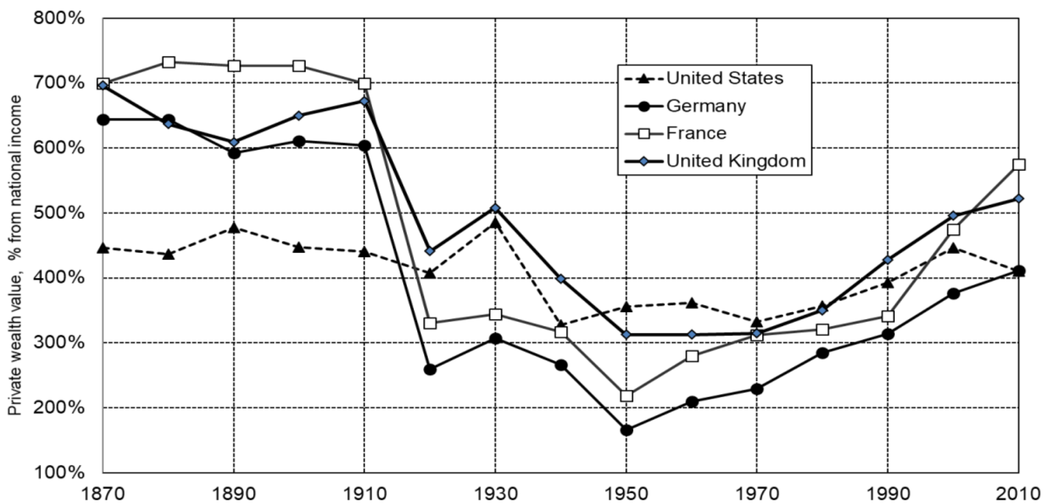
Therefore, the increase in the level of taxation of inherited wealth has a good reason: labor income is currently taxed at a much higher level (around 30% in developed countries), while the average rate of taxation of inherited wealth is less than 5%, the current perception being that inheritances are not meritocratic created.

Based on all the data presented so far, as well as the evolution of the capital / income ratio (represented in Figure 1 - for European countries characterized by population stagnation, the curve is U-shaped), Piketty builds the most important concept of the book, **a fundamental mechanism of divergence** describing the relation between the return on capital (*r*) - which produces capital in the form of profit, dividends, interest, rents and other capital gains, as a percentage of its total value - and growth rate (*g*) - the annual increase in income and output, as a percentage of its total value. In his opinion, the relationship between the two indicators is inequality: $r > g$.

The author claims that this inequality relationship has been usually valid, except for a few decades of the 20th century, and the likelihood of being true in the 21st century is high. This implies that inherited wealth recapitalizes faster than the growth rate of output and income, and it is almost inevitable that "inherited wealth will largely dominate the assets created during a working life, and the concentration of capital will reach extreme levels, high and potentially incompatible with meritocratic values and with the principles of social justice that are the foundations of our modern democratic societies".

This mechanism of divergence can be strengthened by additional mechanisms if the saving rate increases strongly in proportion to the level of wealth and/or if the average yield actually obtained is higher in the case of large fortunes than in the case of the smallest. The author himself gives such an example by comparing the capital returns of the 800 US universities grouped into four categories of wealth: less than \$ 100 million, between \$ 100 million and \$ 500 million, over \$ 1 billion, and four richest universities (Harvard, Yale, Princeton, and Stanford). Between 1980 and 2010, the average annual real-world capital yield of all universities was 8.2%, while the richest four had 10.2%, those over \$ 1 billion had 7.8%, the group between \$ 100 and 500 million had 7.1 % and the last group under \$ 100 million had 6.2%.

Figure 1. Evolution of capital / income ratio in the period 1870-2010 (in %)



Source: Author's graph based on available data at http://piketty.pse.ens.fr/capital21c

The highly controversial issue regarding the influence of the increase of inequalities on the start of the economic and financial crisis in 2008 is also addressed in this book, in the chapters in which the data gathered by the author are presented, and the conclusion reached by the author -yes, it is an important cause of the crisis- is apparently based only on the fact that the higher deciles in the US national income had two absolute maximum in the last hundred years, one in 1928 (the year before the crisis of 1929) and the other in 2007 (the year before the start of the 2008 crisis), even if he notices two more important determinants in the last sentence of the section entitled "Financial growth caused the financial crisis?": the structural increase in the capital / income ratio (an indicator of increasing inequality, in our opinion) and the amplifying of the gross financial positions.

Taking into account the evolution of wealth distribution, the structure of inequality since the 18th century as well as the laws and mechanisms outlined in the first three parts, *in the fourth part* the author tries to provide solutions for improving the existing situation based on his arguments and ideas regarding state role, redistribution, health, education and pensions.

Many left-wing observers denounce and regret the absence of an increase in the state's importance in the economy and accuse the market economy, underlining that, following the economic crisis of 1929, there have been radical changes in fiscal and budgetary policy that have led, for example, to the application of a almost confiscatory tax (with a rate of more than 80%) on excessively high incomes. Piketty rejects this idea, claiming that today the state's share in the economy is much higher than it was at that time, through the emergence of complex systems of education, health and pensions.

On the other hand, there are forces demanding a drastic reduction of the state's role in the economy, the dismantling of central banks and the preservation of truly important functions, those related to citizens' safety and property guaranteeing.

In the author's view, the two views, anti-market and anti-state, both have their own part of the truth in the sense that it is necessary to invent new tools that will allow the resumption of control over wild financial capitalism, and, at the same time, to renew and deeply and continuously modernize the taxation and spending systems that are the essence of the modern social state, sometimes difficult to understand and apply.

As far as redistribution is concerned, this is built around a logic of rights and a principle of equality of access to a certain number of goods considered fundamental. Throughout society, rights have expanded from the right to contract, and the right to be equal in front of the markets, to the right to education, health, retirement, and could further extend to the right to culture, own home or free traveling. The author believes that fundamental rights and material advantages must be extended to everyone's reach, if they confer an advantage to those with fewer rights and opportunities. "To the extent that the inequality of living conditions is caused, at least in part, by some factors that individuals do not control, such as the inequality of family endowments (inheritance, cultural capital, etc.) ... then it is fair for the government to try to decrease as far as possible these inequalities of condition."

In order to secure these rights, one of Piketty's solutions is the rethinking of progressive income tax, the most important tax breakthroughs of the twentieth century, in the sense of applying it to global income (sum of labor income, salaried and non-salaried, and income from any kind of capital: rents, interest, dividends, profits or even surplus value).The motivation of this approach is that taxation is not a technical matter, but rather a political and philosophical one, which contributes to achieving a common destiny and a joint capacity to act. Taxation gives citizens the opportunity to choose democratically the resources they want to allocate to their joint projects, such as education, sustainable development, pensions, infrastructure, etc. The objective is to determine who and what to pay, and for whose principles.

Another way to regulate the 21st century patrimonial capitalism is the introduction of a global and progressive capital tax, accompanied by the establishment of international financial transparency, technically feasible in the contemporary world. The author's hope would be that the introduction of this tax would avoid an endless spiral of inequality, as well as the effective regulation of the worrying dynamics of the global concentration of wealth.

Even if the global capital tax is an utopia, even in the author's conception, this utopia is useful because it is important that this landmark exists in our minds, and because, in the absence of a solution of this nature, it is likely that different forms of national refolding to reappear, such as various options of protectionism and capital control (a visionary idea from the author). In his opinion, "the main role of the capital tax is not financing the social state, but the regulation of capitalism", trying to avoid an unequal spiral and the expansion of wealth inequalities, as well as the effective regulation of the financial and banking crises.

Moreover, there are two ways of thinking that justify the need for a global capital tax: a contributory one and an incitement one. Contributing logic results from the fact that income is, in practice, a concept not always well defined for people with very large wealth, and the fact that only direct capital taxation allows a correct appreciation of the contributing capacity of the possessor of an important fortune. Incentive logic is based on the fact that a progressive tax on capital can force heritage owners to get the best return from it, forcing those who use their assets in an unappropriated way to sell them gradually in order to pay their taxes and to convey them others, more dynamic.

In order to give it a practical side, Piketty proposes the establishment within the European Union of a progressive annual capital tax, permanently applied, whose rates are necessarily relatively moderate and has four thresholds: 0.1% for wealth smaller than € 200,000, 0.5% for € 200,000 to € 1 million, 2% for those between € 1 million and € 5 million, and over 5% for assets over € 5 million. Thus, the returns from the progressive capital tax would amount to 3-4% of GDP, compared to 1-2% of land taxes, which they would replace.

The capital tax would also be the best solution, of the three advanced ones -the other two being inflation (which strikes the most in those that the state wishes to protect by reducing the incomes and reserves held) and austerity (the worst in terms of social justice and efficiency)- for the biggest European problem today: the huge public debt. Its solution would be to apply an exceptionally progressive tax to private capital (averaging 1.5% of the value of capital) over a period of about ten years, which would lead to the elimination of public debt.

Finally yet importantly, we consider as very adequate the author's idea of thinking the economy as a sub disciplinary of social sciences, along with history, sociology, anthropology, political science and so on. He considers the expression "economic sciences" very arrogant, leaving the belief that the economy has reached a superior and specific scientific level distinct from that of social sciences. Therefore, he prefers the expression "political economy", even if he is slightly out of date, because he has the merit of illustrating his political, normative and moral orientation.

The author condemns the so-called scientific methods used by a large number of economists, methods based on a useless use of mathematical models, which is often an excuse for lack of ideas. He also believes that it has been lost too much energy for purely theoretical speculation without having clearly defined the economic facts they explain or the social or political issues they can solve. This does not mean that these methods cannot be very useful if they are used with moderation and discernment, in guiding a part of this profession into practical questions or testing certain theories formulated earlier.

2. Reactions to the book

Considering the contribution of this book at filling (many) empty spaces in the evolution of income, wealth and inequality over such a long period, corresponding to a large number of countries (the most important work of its kind after the book of Simon Kuznets, Economic Change, published in 1953, the continuation of which is intended to be, but only in the sense of collecting data on inequality), it was natural for it to have praiseworthy views on this labor, so laborious, both from left-wing economists, as well as those on the right.

For example, Robert Solow, Nobel laureate for economics in 1987, wrote about *Capital in the 21st Century* in *The New Republic*[6]: “This is a serious book… Piketty’s main point, and his new and powerful contribution to an old topic: as long as the rate of return exceeds the rate of growth, the income and wealth of the rich will grow faster than the typical income from work... This interpretation of the observed trend toward increasing inequality... is not rooted in any failure of economic institutions; it rests primarily on the ability of the economy to absorb increasing amounts of capital without a substantial fall in the rate of return. This may be good news for the economy as a whole, but it is not good news for equity within the economy… There is yet another, also rather dark, implication of this account of underlying trends. If already existing agglomerations of wealth tend to grow faster than incomes from work, it is likely that the role of inherited wealth in society will increase relative to that of recently earned and therefore more merit-based fortunes… The arithmetic suggests that the concentration of wealth and its ability to grow will favor an increasing weight of inheritance as compared with talent… If the ownership of wealth in fact becomes even more concentrated during the rest of the twenty-first century, the outlook is pretty bleak unless you have a taste for oligarchy… Wouldn’t it be interesting if the United States were to become the land of the free, the home of the brave, and the last refuge of increasing inequality at the top (and perhaps also at the bottom)? Would that work for you?”

Paul Krugman, also a winner of Nobel Prize for Economics, had very favorable comments on Mr. Piketty's book in his article *Why we are in a new gilded age* in the New York Times[7]. Krugman believes that this book appeared at the right time, when the concentration of wealth and income in the hands of few people became a major political issue, providing valuable documentation and an unparalleled historical depth. The book also provides a solution to the issue of increasing inequality: applying public policies to reversing trends. Moreover, this book "has transformed our economic discourse; we will never talk about wealth and inequality as we used to".

As mentioned before, an Austrian school economist, Deirdre Nansen McCloskey, has a favorable reaction (among many other unfavorable ones) in his essay *Pessimism measured, unmeasured, wrongly measured and unjustified: an essay on the Capital of*

[6] https://newrepublic.com/article/117429/capital-twenty-first-century-thomas-piketty-reviewed
[7] https://www.nybooks.com/articles/2014/05/08/thomas-piketty-new-gilded-age/

Thomas Piketty[8]. She believes that Mr. Piketty's work will attract many young people interested in studying the history of the economy, one of the few quantitative branches of the economy in which economists look at facts, contrary to the case of current macroeconomics, trade theory, or industrial organization.

In addition, the book provides an example of good practice in the study of the past, not using the analysis of statistical regression in the processing of data collected by someone else, nor statistical significance tests when analyzing the link between, for example, the rate of taxation and economic growth. Also, McCloskey specifies that the book does not use other theories rejected by the Austrian school, the theory of non-cooperative games and the theory of general equilibrium. Another commendable thing is that Piketty builds or uses statistics of aggregate capital and inequality, then subjecting them to examination, similar to physicists who make experiments and then make observations on them.

James K. Galbraith, an another recognized expert in the economic inequality and coordinator of the University Texas Inequality Project (UTIP), believes that Piketty's theory consisting in capitalism's general tendency to generate increased inequality based on income from financial assets (this income's interest rate) r is not very clear[9], for two reasons.The first is that the taxation of the interest income reduces the difference between r and g, while the consumption of interest income can reduce the degree of accumulation of long-term imbalances. The second is that inequality $r > g$ is not true for the most part of the 20th century, at least between 1914 and 1980, with income tax being introduced on a large scale during this period, while interest rates have entered under the jurisdiction of national banks, being influenced by them. Thus, not only the aforementioned relationship is not verified during this period, but it has not even increased the level of inequality in the countries that form the main subject of study, on the contrary. The hypothesis that there is a long-term trend requires faith in the return of the conditions of the nineteenth century and the 21st century. Secondly, Piketty's second fundamental law of capitalism, according to which a higher rate of savings by the rich people is an advantage over others, increasing their income at a higher rate, suffers from the same drawback: taxes and inflation can lower the value of the accumulated wealth compared to new earnings, history often demonstrating this.

Similarly, Acemoglu and Robinson in their article *The Rise and Fall of General Laws of Capitalism*[10] first argue that there is no inexorable law of capitalism, with the exception of accounting identities. Then, based on data gathered from two countries, Sweden and South Africa, they believe that although inequality is too weak to convince someone who is not already convinced of its long-term truthfulness, the book may be a starting point for other researches, due to its valuable results.

Another criticism of Mr. Piketty's book is raised by French economists Bonet, Bono, Chapelle and Wasmer in the article *Does housing capital contribute to inequality? A comment on Thomas Piketty's Capital in the 21st Century*[11] and refers to the inappropriate use of house prices as a quantification of wealth, suggesting instead the use of rent prices that would lead to a lower capital / income ratio in the period following the Second World

[8] https://www.deirdremccloskey.org/docs/pdf/PikettyReviewEssay.pdf
[9] https://archive.intereconomics.eu/downloads/getfile.php?id=977
[10] https://economics.mit.edu/files/11348
[11] http://spire.sciencespo.fr/hdl:/2441/30nstiku669glbr66l6n7mc2oq/resources/2014-07.pdf

War, but keeping the trend. This would contradict Piketty's idea that patrimonial inequality would be self-reliant.

The economist Gregory Mankiw, professor at Harvard University, using the neoclassical model of economic growth, demonstrates in his article *Yes, r > g. So What?*[12] that the force of fundamental divergence enunciated in the book does not necessarily lead to the increase of inequality, even if the expression is true. In addition, even if inequality decreases by applying a global (or European) capital tax, it will also reduce economic growth.

In their article *Capital Taxation in the Twenty-First Century*[13], Auerbach and Hasset professors recalculate the value of *r*, introducing the risk premiums built-in in asset prices, which would reduce it even below the growth rate of the economy. Regarding the introduction of capital tax, the two authors argue that in the literature there is almost a consensus on the higher efficiency of taxation of capital consumption to reduce inequality.

These criticisms have not remained without echoes for Mr. Piketty, which, in the article entitled *About Capital in the Twenty-First Century*[14], attaches greater importance to the effects of institutional change and political shocks on the level of inequality than the effects of the $r > g$ inequality. He also continues to claim the applying of a progressive tax on capital at the expense of a consumption tax because, in its view, the former is more easily defined, measured and tracked.

3. Conclusions

The paper analyzed in this article represents a mandatory object in the arsenal of an economist who wants to understand the world in which we live, the contributions of the book studied to the history of the formation and distribution of income and capital being remarkable, representing a pioneering in the field. Moreover, the book is the result of more than 10 years of work made by dozens of researchers who have built substantial databases on the structure of individual and national wealth, national income, as well as the evolution of income and wealth distribution in over 20 countries and over two hundred years.

The first three parts of the paper introduce, with few exceptions, fundamental notions and phenomena for the study, serious and politically independent, of the evolution of the inequality’s level over time, which can be taken over by any other interested researcher, especially since the results of all researches the group led by Mr. Piketty are available online for anyone who desires.

In the fourth part, the author uses these data to justify the introduction of certain measures to reduce the inequalities deemed necessary by him. This approach seems to me subjective and partisan, and I will try to explain why.

First, the need for state intervention to mitigate inequalities is justified, we believe, by the fear of the outbreak of revolutions, the author making analogy with Marx's era in which capitalists accumulated very high fortunes, and the standard of living of workers remained below the level of subsistence. The approach of some bad times (strictly from this point of view) is unlikely for at least two reasons: the overall economic situation of all citizens from the developed countries has improved considerably (their living standards

[12] https://scholar.harvard.edu/files/mankiw/files/yes_r_g_so_what.pdf
[13] https://www.aeaweb.org/conference/2015/retrieve.php?pdfid=421
[14] http://piketty.pse.ens.fr/files/PikettyAER2015.pdf

being much higher than that of the rich persons in Jane Austen’s or Honoré de Balzac’s novels), and the rich are no longer a subject of the hatred of underprivileged classes, although envy has not disappeared and will not disappear from the arsenal of human feelings, but rather become a model to follow. In other words, they no longer have to be stripped of wealth, but just imitated. We think that the dangers that can lead to the dissolution of the world, otherwise imperfect, in which we live, are different, besides wasting natural and human resources and environmental destruction, nationalism and populism being more present and more acute in our lives.

Secondly, as the author himself notes, "the dynamics of wealth distribution engage strong mechanisms that alternately push towards convergence and divergence." In addition, the unpredictability of historical events that may have unsuspected effects on the level of inequality (see great world wars that destroyed wealth in a non-discriminatory way and economic crises that have led to the invention of inequality-reducing methods) make us reserved when we have to predict a trajectory of income and wealth inequality.

Another example of historical unpredictability is "creative destruction" in business, where some sectors (financial, ICT) are experiencing an unprecedented development, while others are moving towards a visible eyesight bankruptcy (traditional production industries). We believe that the general rise of inequality was also generated by the fact that a handful of new capitalists are the winners of this process, while a larger group (as well as their employees) has been eliminated, not to mention that the former represent the new components of the higher income centiles, replacing the latter.

Ultimately, two things are very important: the moral side of the building process of the individual and common good in the long run, and the degree of adherence of most citizens to this theoretical construct. This happens because, as we have seen in this book, what is today considered a desideratum of society, may become a hindrance for tomorrow's golden dream of mankind, whatever it is, and vice versa.