COPENHAGEN BUSINESS SCHOOL
HANDELSHØJSKOLEN

MASTER THESIS (CIBSO1027E), Kontraktnr: 16270

Cand.Merc. International Business

Date of submission: 15th May 2020

WHAT HAVE BEEN THE MAIN DRIVERS OF GROWTH IN POLAND AND HUNGARY SINCE AROUND 2010?

DOMINIKA BASAK (124111), DORA PAPP (125185)
SUPERVISOR: NIELS MYGIND
No of characters: 2275; No of pages: 120

Abstract

The thesis examines the factors that contributed to the recent high economic growth of Poland and Hungary. Around 30 years after the transition into the market economy and 15 after the EU accession, the countries have shown extraordinary performance relatively to stagnating Western Europe. Yet, the controversial political development and institutional change of the countries have created uncertainty that can jeopardize the countries' international competitiveness and their future in the EU.

Due to the complexity of the study area of the paper – business environment of two case-study countries – a *system view* as a methodological approach is used that allows for reproducing a part of reality in a simplified form. In line with the view, the PIE model selected as an analytical framework treats the business environment as a system divided between political, institutional and economic subsystems, consisting of different components and relationships **within** them, and **between** them and the surrounding world, not treating the domestic economy in isolation but rather dynamically and with an international perspective. The holistic view adopted enables to draw conclusions in regard to factors that contributed to the relatively immense economic performance of countries.

The factors that stand behind the economic growth in Poland and Hungary are established divided between the short-run and long-run ones. In terms of the former, the fluctuations in demand are explained that have been shaping the recent economic performance of countries. In terms of the latter, the potential of the direct economic factors is established in connection to the political and institutional landscape. Hence, the dynamics unfolded in the analysis of two countries enables to highlight the power of political development and institutional change that is exerted on the economic and business activity of countries as well as on their international relations and competitive image.

It is concluded that both Poland and Hungary follow the pattern of solid short-run economic performance with Poland's economy marching steadily, and Hungary with some deviances recognized in macro stability. When it comes to long-term growth, both countries still have potential of exploiting further their production inputs. Nonetheless the recent upheaval in politics may set obstructs on the future prosperity through the connectedness of the elements of politics, institutions, economics and the surrounding world.

Table of Contents

1 Introduction 4

1.1 Motivation and purpose 4

1.2 Problem statement 4

1.3 Delimitation & assumptions 5

1.4 Structure of the paper 5

2 Methodology 7

2.1 Arbnor and Bjerke's foundation 8

2.2 Methodological approach – the system view 9

2.3 Operative paradigm 9

2.3.1 Methodical procedure 10

2.3.2 Methodics 11

3 Analytical framework with theoretical explanations 11

3.1 The PIE model 12

3.1.1 Choice of growth determinants 13

3.1.2 Dynamics of PIE 14

3.1.3 Politics 16

3.1.4 Institutions 17

3.1.5 Economy 22

3.1.6 Surrounding world 31

4 Historical context – transformation to market economy 32

4.1 Collapse of communism 33

4.2 Transition period 34

4.2.1 Politics 34

4.2.2 Institutions 35

4.2.3 Economy 42

5 Analysis 44

5.1 Politics 45

5.1.1 Poland 45

5.1.2 Hungary 50
5.2 Institutions 55
5.2.1 Poland 55
5.2.2 Hungary 65
5.3 Economy 75
5.3.1 Poland 75
5.3.2 Hungary 86
5.3.3 Graphs for Poland and Hunagry 97
5.4 Surrounding world 102
5.4.1 Poland 104
5.4.2 Hungary 107
6 Conclusion 110
6.1 Poland 111
6.1.1 Short-run growth 111
6.1.2 Long-run growth 111
6.2 Hungary 112
6.2.1 Short-run growth 113
6.2.2 Long-run growth 113
6.3 Overall conclusion 116
6.4 Perspective 117
6.5 Future research 118
6.6 Limitations 118
7 Bibliography 120
8 Acronyms & abbreviations 136
9 Appendices 138

1 Introduction

1.1 Motivation and purpose

The remarkable transformation process has been observed among the societies of former socialist countries for the last 30 years. Following the 2004 enlargement of the EU and entering the Single Market, *Eastern Bloc* countries have undergone intensive development processes of their institutional framework, liberalised their markets and encouraged entrepreneurship.

Especially, the recent rapid and extraordinary economic growth of Poland and Hungary together with their peculiar political development evokes interest when compared to stagnating Europe. In 2018, Hungary and Poland were equally placed just after Ireland and Latvia, with the GDP growth annual rates per capita of 5.3% and 5.1% respectively, in comparison to 2.0% of the whole EU (Appendix 01). However, the excessively strong power of ruling parties in relation to political institutions has contributed to strained relations with the EU and created uncertainty regarding the countries' future in the Union.

Establishing the conditions behind the recent impressive economic growth of Poland and Hungary would, firstly, allow adding to the stock of knowledge concerning the relationship between the economic growth and political development. In order to strengthen such findings of the relationship, two countries of a similar history, current political environment and economic progress are selected. Secondly, the study draws an empirical two-way link between domestic economic growth and relationship with the surrounding world – both business and political one, thereby underlining the inseparability of economy and politics and the international environment. Thirdly, analysis of the economic growth's background is, in essence, a holistic analysis of different constituents of economic opportunities for international businesses. Thus, this paper provides valuable knowledge concerning the countries' economic juncture – their current standing and future potential, that would allow market agents to make more-informed decisions.

1.2 Problem statement

Allured by the Poland and Hungary's remarkable economic performance within the EU, the thesis targets to reveal the underlying determinants of the recent growth. Being separated by the Iron Curtain, the countries have been lagging behind its western counterparts, however, since especially

1989, but also 2004, there have been opportunities to be exploited and notable improvements to be undertaken. Hence, by delving deeper into the Polish and Hungarian political, institutional and economic systems, the thesis aims to detect how it has been handled, elucidate the countries' competitive attributes and thus answer the following research question, dedicated to drive the analysis of Poland and Hungary's outstanding economic growth:

What have been the main drivers of growth in Poland and Hungary since around 2010?

1.3 Delimitation & assumptions

The content of the thesis is based on the analysis of the recent period **after** the transition process, the accession to the EU in 2004 and the Great Recession dating back to 2008, that nevertheless form antecedent steps for the analysis of Poland and Hungary.

Primarily, the transition period of the two shortlisted countries is presented where root causes are explicated to evaluate the initial stance. In the main section of the thesis, the period examined dates back the years after the crisis until up to the juncture in January 2020. The reasoning behind the chosen period is that elucidation of longer periods, together with the economic crisis, would significantly exceed the limit of pages or deteriorate the quality of the analysis. Moreover, going further into 2020 would entail a lot of everyday changes as there is a global issue of the coronavirus COVID-19 pandemic that significantly affect the current political, institutional and economic affairs of the countries. Hence, the thesis abstains from including its impact when depicting Poland's and Hungary's juncture.

As the thesis' instrumental point is to unfold a country's complexity, the systems view, and the PIE model are chosen to serve as a methodological approach and a tool, respectively. Besides the scrutiny in respect of political, institutional, and economic elements, the countries' assessment through various indicators and reports implies the assumption, as even though endeavor is maximized, the complex nature of an economy cannot be grasped in its entirety. For this reason, after the analysis, the identified limitations are enumerated.

1.4 Structure of the paper

Firstly, the methodological approach taken is presented – the systems view – that would allow to grasp the complexity of the study area of the paper – society and business environment of two countries.

Secondly, the analytical framework section provides details about the model applied in the study – the PIE model, that is compliant with the thesis complexity of analysing Poland and Hungary as a whole. As it is unfolded in the methodological approach section, the system approach of the study takes two different forms depending on whether it aims to explain or understand the reality. The former case is chosen, which means that the PIE model is used for presenting reality and its fact-filled aspects. The country's business environment is a system that is then divided into political, economic and institutional subsystems composed of components and relationships between them that are of a teleological nature, in accordance with the system view. The subsystems are open in a way that the components are interacting with each other and they cannot be studied in isolation but must be placed in a context – the surrounding world, further described in the analytical framework. Because of the complexity of the systems – Poland and Hungary, the study would take a high magnifying level, containing few details – components – of the entire system. When it comes to the components' position and the systems relations, both structural and processual perspective is taken which means that both characteristics of components and relations are given as well as their flow and relations over time. Moreover, in order to justify the choice of growth determinants and establish the structure of both the framework and the analysis, the concepts and theoretical explanations follow the considerations of every subsystem.

Secondly, as an introduction to the analysis of Poland and Hungary, the two countries are placed into historical context. In the system approach, the systems are regarded as living wholes, which existed even before any study on the issue was undertaken. That is why, in order to explain the present state of the system or even forecast its future, it is imperative to explain its past. That is why before the main analysis part, the transition period from centrally planned to market economy is depicted for both countries where in some cases identification of similarities or emphasis on the country's peculiarities dominate.

Thirdly, the analytical part of the thesis of Poland and Hungary is presented. The PIE model is used to examine the countries through several elements composed into the subsystems and their connectedness. The focus of the analysis is put on the relationship of elements with economic growth, further described in the analytical framework.

Fourthly, after having performed the analysis, the thesis draws overall conclusion about Poland's and Hungary's growth determinants and thus answers the research question. Moreover, further suggestions are outlined for improvements in future researches and their applicability.

2 Methodology

The objective of this section is to depict how methods are selected for this study and how an operative paradigm is developed.

2.1 Arbnor and Bjerke's foundation

In order to guarantee high quality of knowledge creation of the paper, the approach to methodology is strongly influence by Arbnor and Bjerke's foundation of methodology which focuses on researcher's awareness and self-reflection in the process of business knowledge creation (Arbnor & Bjerke, 2009). On its basis, before deciding on and referring to the operative paradigm itself, other related components should be first scrutinized in relation to each other (Fig. 1).

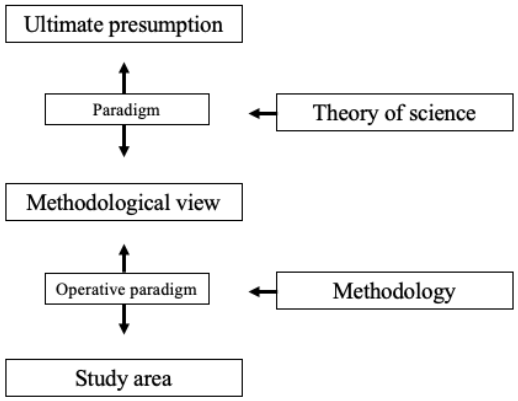


Figure 1 Methodological process based on the original drawing (Arbnor & Bjerke, 2009)

First of all, Arbnor and Bjerke's recognize that ultimate presumptions guide the whole analysis process. They can be regarded as views of the researchers, their assumptions concerning the environment that influence observations and understanding. Therefore, the ultimate presumptions can stand in the way of successful interpretation and thus affect the research results. Which means that the researchers must select methods in accordance with their own belief concerning life. This choice is incorporated in a methodological view – a researcher's opinion on the *meaning of methods*. The bridge between ultimate presumptions and methodological view, however, is presented by a concept called a paradigm, a model that depicts simple philosophical assumptions influencing research. The relation between ultimate presumptions and methodological view is studied by the theorist of science and embraced by conceptual language.

According to Arbnor and Bjerke, ultimate presumptions and, what follows, methodological view selected must be in harmony with the specific study area, and it can be constructed so by the use of an operative paradigm, which encompasses methodical procedures and methodics. In a research, methodical procedure can be seen as an adaptation of a technique to a selected methodological view, and methodics concern applying this adapted technique. Arbnor and Bjerke highlight that the use of theories, data and techniques must be in accordance with methodical procedure and methodics in

order to yield successful interpretation. The final methodology, however, is of assistance to an operative paradigm and explains the development of methods, which are guiding rules for the knowledge creation. The choice of methods is done taking into consideration the subject matter, the researchers' ultimate presumptions and the available to the researcher techniques. Thus in short – methodology's aim, and thus this sections', is to shed light on how the methodologies, methods, research question and research structure constitute an integrated whole (Arbnor & Bjerke, 2009).

2.2 Methodological approach – the system view

The study area of this paper – society and business environment of two countries – requires an approach that would be capable of grasping its complexity. That is why a system view is taken which aim is to explain or understand a reality that is composed of both subjective and objective facts. It entails providing a model, a reproduction of part of the fact-filled reality that is simplified and allows for underlining reproduced significant finality (teleological) relations of its components, which means that components can be explained as functions of their purposes – just like the components of the PIE model, further explained in the analytical framework section (Arbnor & Bjerke, 2009).

This methodological view regards reality as being systemic, which means that its components has to be seen as systems – relative wholes. The reality in the system view does not equal to what is calculated as a sum of its components, yet it entails also the relationship between the components which are dependent upon themselves, and thus it is arranged as a synergy. The synergistic effects mean that not only components give information but also the fashion in which they are assembled do so (Arbnor & Bjerke, 2009). Based on this holistic and structural approach, the system view is in line with both the ultimate presumptions of the researchers and the study area.

2.3 Operative paradigm

As stated before, the bridge between a methodological view and a study area is called an operative paradigm and it consists of methodical procedures and methodics. The use of theories, data and techniques must be in accordance with all of them in order to guarantee high quality of knowledge creation (Arbnor & Bjerke, 2009). Firstly, the process of adopting a technique in relation to the study area for the analysis is described in the methodical procedure. Secondly, how the methods are approached and the fashion in which the paper relates to them are described in the methodics.

2.3.1 Methodical procedure

2.3.1.1 Poland and Hungary – two case studies

The techniques become methods for knowledge creation when they fit the methodological view. There exist two types of techniques for a system view – historical and case studies (Arbnor & Bjerke, 2009). Thus, in line with this approach and the character of the study area, the case study method is used where systems are both dependent upon their relations and present unique cases. Thus, the paper is an empirical study of two units – Poland and Hungary as two case studies. The research is based upon case studies because of the complexity of growth factors, which analysis require substantial effort. The connectedness of these two countries can be traced back to the state foundation era. Since then, the two countries, yet with considerable differences, were showing similar development path. The selection of case studies is done following principles of being versatile and interesting – elucidating a phenomena and guiding research process.

2.3.1.2 Data collection

The investigation with the aim to identify the key drivers of growth for Poland and Hungary is based on secondary data extracted from multiple sources. Dataset used throughout the thesis is of secondary nature including both qualitative and quantitative sources. When secondary data is presented the need for its critical evaluation is an inevitable step and the utilization of further data observed from different perspectives follows. By sticking to the pragmatic attitude that characterises objectivity and ensuring the confidence of data, selected sources are presented and compared, in line with triangulation, and critically interpreted for further usage (Bryman, 2012).

2.3.1.3 Data quality - reliability, validity, objectivity

In accordance with the system approach, elements of data quality such as reliability, validity and objectivity need to be examined broadly (Arbnor & Bjerke, 2009). As the thesis is based upon systems, there is a lax requirement towards **reliability,** as a technique for controlling data quality, since the purpose of knowledge creator is rather to use the source's findings than to examine its methodological approach. However, **validity** is needed to be examined carefully to ensure the depicted system is scrutinized from every regard possible. Subsequently, it requires to take into account and analyse numerous materials already pre-assessed. Applied through the thesis, validity check consequently results in investigating several viewpoints that either points to disharmonious findings or profoundly verifies syllogisms. Furthermore, determining and following **objectivity** via using secondary materials is unquestionably the most demanding progress. Despite of striving for maximized objectivity, even the stated research question or the methodological way can undermine

objective behaviour. Nevertheless, given the system view, pragmatic attitude surmises a more moderated process by concentrating on the outcomes of interpreted materials.

2.3.2 Methodics

2.3.2.1 Research design

With detailed and intensive depiction of countries, the paper attempts to yield explanative knowledge concerning the determinants of the economies' development, as it is the characteristic of a system analysis to have both a descriptive and explanatory or an understanding purpose.

The particular nature and complexity of the societies of the selected countries are examined, which constitute settings for countries' economic performance. It is done so in order to produce theoretical explanations for the subject matter. Through an idiographic approach, the research aims to elucidate the potential unique competitive features of both Poland and Hungary that contribute to securing the economic growth.

On one hand, the research takes a deductive approach in the sense that the key areas – the concepts of growth – guide and affect the process of data collection and analysis. The already existing knowledge and theoretical considerations of this domain drive the research process. On the other hand, the research aims for knowledge to emerge out of the study – findings concerning the countries' growth, and thus, takes also an inductive approach. The concepts are revised at the end of the study and inferences drawn out are to enrich the stock of theory regarding the economic growth of the objects of interests (Poland and Hungary). Because of the complexity and scale of the matter studied, the findings, however, cannot ensure the legitimacy of the conclusion but they rather lead to the best possible explanation, social scientific account. It might indicate a more abductive nature of the research reasoning (Bryman, 2012).

3 Analytical framework with theoretical explanations

This section aims at presenting the framework used – the PIE model – to analyse drivers of the recent growth that has taken place in Poland and Hungary and countries' competitive features. The model is first introduced and all its elements – politics, institutions, economics and the surrounding world – are then discussed separately together with subsections of their connected growth determinants and measures used to analyse them.

3.1 The PIE model

In order to analyse the recent growth that has taken place in Poland and Hungary and discover what has driven the relatively high economic performance, the PIE model, created to analyse the business environment, is used (Mygind, 2007). It is characterised by dynamic approach and dictate that the analysis of all dimensions – political (P), institutional (I) and economic (E) – must be done together and in relation to each other rather than separately, as they constantly influence each other. The PIE model also takes into account the surrounding world that exerts great influence on the three P-I-E dimensions (Fig. 2).

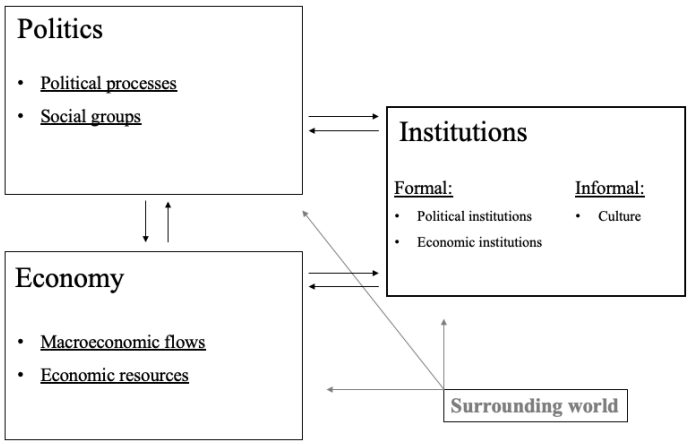


Figure 2The PIE model, source: author, based on the original drawing (Mygind, 2007)

Because not only the economy but its institutional background, its relations to politics and to the surrounding world play a significant role in growth dynamics, a simple and static analysis of a country would yield incomplete results. Thus, a method for the analysis is required that takes into consideration all interconnected factors and mutual influence of all the elements. The PIE model, with its dynamic stand, looks deep for links between politics and economic growth and focus on the role of institutions, which are said to define the rules of the game within the society and that their quality can explain the economic development of countries (Mygind, 2007).

In accordance with the system approach, the PIE framework serves as a model to reproduce a part of country's economies' reality in a simplified format through different components – measures – in order to be able to conduct the analysis of growth drivers. Moreover, the dynamics of the PIE model

that highlights the finality relations and their synergies allow for identifying relationships between countries' (/systems') elements (/subsystems) and growth. Hence, the PIE model is used to have an overview of the systems and interactions between them and thus analyse the countries' societies holistically. In consequence, in the following subsections, first the justification of the overall choice of growth determinants and then the dynamics of the system are presented.

3.1.1 Choice of growth determinants

The PIE model is characterised by flexibility and has to be adjusted to the needs of an analysis. What is more, the different elements taken into account should be weighted in order to represent their importance in the analysis. Hence, the elements of the PIE model for the study are thoroughly selected, with importance attributed mainly to the Economy subsection, in order to answer the stated research question in the most correct manner. Undoubtedly, no model can accurately analyse such a complex matter as the business environment and some simplifications have to be done about what elements belong to which category. Nevertheless, all the elements are interconnected and dynamic and thus there can be room for overlapping.

What precisely drives the economic growth and what jeopardises it – has been a question generating a lot of debate and confusion in economic and political circles. Typically, the economic growth of countries is measured with their aggregate output – gross domestic product (GDP). It can be viewed from different sides – production or income. In terms of the former, it can be defined as the value of final goods and services that were produced or the sum of value added in a given country in a given period. In terms of the latter, GDP can be regarded as the sum of incomes in a given country in a given period (Blanchard et al., 2017). Nevertheless, the economic growth cannot only be seen in relation to a country's production or income value as is in the case of GDP. Simon Kuznets, well-known economist and a Nobel prize laureate, maintained that the simple economic theory of growth is not sufficient to explain countries' economic performance. He coined the concept known as the modern economic growth that entailed: a structural transformation – a shift from agricultural focus, increased scale of production and changed consumption and organization of labour; growth of population and productivity; and technological and scientific advancement. However, last but not least, Kuznets emphasized changes in politics and transformation of institutional environment as growth factors (Kuznets, 1955). Similarly to Kuznets, Plosser also pointed to the influence of politics

on economic growth and indicated political stability, such as rule of law, among his other growth factors – trade, investments and also human capital (Plosser, 1992).

By taking into consideration all of the above-mentioned factors and applying a holistic view on the growth – it becomes undeniable that a variety of factors need to be contemplated while determining what actually has been driving the recent growth in Poland and Hungary. That is why, not only the direct economic antecedents of growth are taken into consideration – such as natural resources or qualified labour (further described in the Economy subsection), but also aspects that constitute the foundation for the business environment and work towards accelerating (or hindering) development from behind the scenes – such as the political landscape. The particular measurements are presented and justified under subsections of every P-I-E elements. The most recent information and numbers for all the aspects are mainly taken into account, however, in some cases it is necessary to look for developments throughout the years since 2010 and spot trends.

3.1.2 Dynamics of PIE

According to the system view, in order to achieve the synergy effect, the parts of the system – here the P-I-E subsystems together with the surrounding world – should support each other and not act in opposition to each other (Arbnor & Bjerke, 2009). That is why, this support relationship should be scrutinized. Thus, the dynamic approach to society of the PIE model allows to do that and establishes how all elements influence and affect each other in a two-way fashion (Mygind, 2007).

3.1.2.1 Dynamics within subsystems

The dynamics in the model may be observed both within the three subsystems – P, I and E, but also between them and the surrounding world. Moreover, the dynamics occur even within sole components such as economic institutions, where one change in a subcomponent leads to a change in another subcomponent. These dynamics, their flows' importance and direction is dependent upon distinct circumstances in the society under investigation (Mygind, 2007).

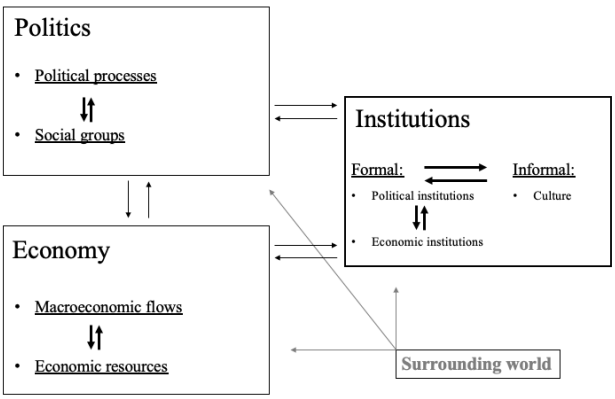


Figure 3 The dynamics within and between subsystems, based on the original drawing (Mygind, 2007)

The dynamics **within** the PIE subsystems can be illustrated as it is in (Fig. 3). In the Politics subsystem the dynamics can be observed mainly between political processes and social groups components; in the institutional subsystem between political and economic institutions components and between the formal and informal institutions components; in the economic subsystem between macroeconomic flows and economic resources (Mygind, 2007).

3.1.2.2 Dynamics between subsystems

The dynamics **between** P-I-E subsystems are both illustrated in Fig 3 and Fig 3.

Starting from institutions, political institutions set the rules of the game for politics (P) and design the political system through the constitution, and economic institutions define the rules of the game for the economy (E). Both political and economic institutions, however, are influenced by political processes (P), such as conflicts and alliances. The informal institutions, however, are rooted in the country's culture and influence politics (P) and economy (E) through its unwritten rules derived from norms, values and beliefs (Mygind, 2007).

Proceeding to politics (P), this dimension is rooted on the distribution of resources, wealth and, most importantly, power among country's citizens, who can then be classified into distinctive social groups. On one hand, some of them are connected to informal institutions (I) through cultural or religious roots, on the other, are determined by the economic development of a country (E) that set the importance of certain industries. The factors behind this distribution are also the formal institutions (I) that regulate the education, labour marker, wage and taxation. Moreover, the power of labour and its unions in turn influence decisions of institutions (I) concerning, inter alia, the mentioned wage regulation and taxation. Furthermore, the distribution is also affected by the ownership structures, corporate governance and other regulations – which are set by economic institutions (I) (Mygind, 2007).

Similar to politics (P), economy (E) is also influenced by institutions (I), here mainly economic ones, but also political process (P) set out the tone for the economy through regulating economic policy. Another link with politics (P) is observed through the distribution of resources between social groups that is, as mentioned, indeed based upon the economy. Moreover, the quality and enforcement of

institutions (I) is also affected by the economy (E), mainly economic growth, economic resources accumulation and quality of technology that is used when exploiting these resources (Mygind, 2007).

Furthermore, the surrounding world also influence the course of politics, institutions and economy – P is affected by other countries and alliances, I by international institutions, and E by international trade and FDI (Mygind, 2007).

3.1.3 Politics

Politics can be divided into social groups and political processes, and through this division, politics effect on growth is elaborated.

3.1.3.1 Social groups

Social groups are mainly classified according to the distribution of economic resources, contribution in the production process based on ownership state (Mygind, 2007). Sustainability of growth can be more ensured if economic growth is distributed fairly across societies, there is a lack of social conflicts, and all benefit from growing income opportunities, and hence, the distribution of resources is examined (Mygind, 2016).

3.1.3.1.1 Distribution of resources – wealth and income distribution

Based on resources ownership advantages, social groups set the tone for the dynamics of the system through their economic power game of exerting influence on politics, and thus affecting not only political but economic institutions' decision concerning the path of the economy taken. Yet, social groups can affect politics also by establishing unions in relation to employment – as it was the case with the Solidarity in Poland, a trade union in the 80s, further described in the historical background section (Balcerowicz, 1994). Thus, the dynamics of power should be tracked in order to spot changes that could influence the path of the economic development.

3.1.3.2 Political processes

The political processes take into account the relationships with social groups such as conflicts and alliances and their organizational strength progress (Mygind, 2007).

3.1.3.2.1 Political power structure

Changes in the power structure lead to future change in formal institutions and thus policies that shape the path of economy. The power structure and influence of main political parties directly frame the political system. As mentioned, political institutions through established constitution, organize the basic, usually stable framework for politics. However, extensive, consolidated power of some

political parties and figures may endanger this framework and jeopardize the country's democracy, which legitimizes scrutinizing the power dynamics within political structures. Moreover, political competition is of great importance for representing needs of different social groups and its lack brings favourable conditions for abrupt changes that can jeopardy the country's stability in the long run and indicate high political risk, discouraging potential foreign investors. Competition can bring constructive criticism to inefficiencies of the political system, propose changes that would improve it. It can also take part in fighting corruption and abuse of power (Mygind, 2007, 2011).

3.1.3.2.2 Power of media

The media serve as a communication channel between political elites and public opinion. Media serve as a tool of providing information to society that affect its awareness and shapes its views. Thus, they can become an instrument used by politicians to manipulate voters through attaching importance and meaning to selected events, while depreciating others.

3.1.4 Institutions

Institutions are classified into formal and informal. Among the former, political and economic institutions are determined, and the latter are based around culture. Moreover, quality of formal institutions can be defined through enforcement – rule of law (Mygind, 2007).

3.1.4.1 Political institutions

Political institutions (I) set the rules of the game for politics (P) and design the political system through the constitution. It determines the division of power between different political institutions and defines the magnitude of their power. This element of the model scrutinizes the election rules and its organization, degree of centralization of power and decisions, whether human rights are ensured such as freedom of speech. Political institutions' decisions can influence the political power dynamics and therefore this close relationship between political institutions and politics requires to analyse these two elements in connection with each other (Mygind, 2007). As stated in the chapter concerning the transition process, political processes in the form of Mikhail Gorbachev coming to power and devoting to societal reforms lead to changes in political institutions and series of revolutionary movements altering the political power structure and finally resulting in the collapse of the Soviet Union (Marples, 2004).

3.1.4.1.1 Quality of political institutions

Quality of intuitions is one of the most crucial determinants of economic growth. The functioning of formal institutions, both political and economic, and thus their quality is determined by efficient enforcement. In terms of political institutions efficient enforcement is ensured in the constitution through administration with high capacity and qualified and independent from government judicial system (Mygind, 2007). Judiciary plays a vital securing role though safeguarding personal safety and protecting property thus its independence is required for personal liberty and economic security and development.

3.1.4.2 Economic institutions

As stated, the economic institutions define the rules of the game for the economy (E) – both for the economic flows and economic resources (Mygind, 2007). The economic policy is divided on the basis of property rights, degree of state liberalization, and economic intermediation – financial markets.

3.1.4.2.1 Quality of political institutions

In terms of economic institutions, secured rule of law and protected property rights together with fair rules of doing business, enforceable contracts promoting business, well-regulated competition and efficient resources allocation create favourable opportunities for investments, also in technology, which in turn drive growth (Mygind, 2016).

Property rights and ownership structure

Economic institutions' characteristics are dependent upon the property rights – state and centralized or private and decentralized, and thus upon the type of economy – command or market. Property rights constitute a foundation for the ownership structure of business and therefore for its corporate governance. Economic policy thus lays down the rules for economic resources by determining whom can reap the profits from production surplus (Mygind, 2007).

Established private property rights ensure efficiency of production and enable trade. Efficient protection such as solid bankruptcy law reduces risks for creditors and ameliorates the state of financial system. Other rules such as laid down in company law or corporate governance law also facilitate conducting business and affect its efficiency which is positively correlated to business prosperity (Mygind, 2007).

Corruption

Enforcement can be regarded also in terms of corruption levels and whether the state is dominated by private interests that distort the rule of law. Distorted rule of law results in more power given to informal institutions instead. The unwritten rules that guard informal institutions are less transparent and, together with favouritism, constitute great obstacles for foreign investors and other business partners through high uncertainty and increased transaction costs (Mygind, 2007). Moreover, with high corruption, resources are misallocated, and high savings are not possible, slowing down investments (Mygind, 2016).

3.1.4.2.2 State regulations

The type and degree of state regulation also plays a vital role in creating economic growth through prices, taxes, exchange rates and labour market regulation, together with the level of ease of doing business.

State regulations encompass setting prices by government in order to, inter alia, ensure affordability of some products for citizens or to fight inflation. Such controls of maintaining low prices may result in shortages due to increased demand and lagging supply, which can have further effects on the economy such as development of black market. Price controls when removed, may result in a shock of the economic system and drastic welfare losses due to drastic increase of prices, as it was the case after the fall of the command system.

Taxation system

Moreover, fiscal policy covers a broad spectrum of elements such as taxation and public expenses. The taxation system can, inter alia, have a direct effect on the labour market as it can create or hinder incentives to work through changes in the income tax. What is more, lower tax on returns for companies allows and encourages savings and investments, not to mention special R&D tax breaks, which may positively affect the economy through spill over effects. Through taxes, governments also influence in which direction investments proceed, and thus which sectors are to develop. However, incentives through tax reduction can also increase public budget standing due to less revenue collected by the government. When it comes to public expenses, they can be both beneficial by for instance, increasing the quality of economic resources, but also increased public spending can hinder private investments and, thus growth, due to the crowding effect (Mygind, 2016).

Labour market regulation

The economic policy also entails labour market regulation that aims at protecting employees and improving the labour market through increasing its efficiency and labour productivity. However, some regulations such as minimum wage can generate a heated debate as it can contribute to employment and welfare losses.

What is more, economic institutions are in charge of incentivising entrepreneurship. Barriers of establishing private firms and doing business due to excessive bureaucracy can significantly hinder the start-up initiative. As stated in the quality of institutions subsection, business initiatives are strongly related to incentives laid down in economic policy and established competitive environment (Mygind, 2007). The easier it is to conduct business activities and the more competition is developed the more efficiency and productivity are driven. Through liberalization of economic activity, such as reducing entry barriers, encouraging domestic and foreign competition, and lessening taxation, economic institutions create a competitive environment that leads to improved efficiency, product quality and, what follows, improving the global competitive position. Domestic competition is the most significant boost of competitive advantage, important for intensive growth, as local rivals pressure each other to cut costs, work on quality, increase efficiency and deliver new products and innovation (Mygind, 2016). As Porter suggested in his model of competitive advantage, innovation undertakings are sensitive to competitive environment and the more progressive and innovation-favouring the home environment is, the more national industries succeed (Porter, 1990).

Regulation of foreign trade and FDI

Foreign relations and foreign economic policy may play a significant role in unleashing the economic potential through liberalization of foreign trade, FDI and other capital flows. Trade policy and level of protectionism – measures such as tariffs and non-tariffs barriers aimed at protecting domestic sectors or providing government revenue hinders national competitiveness in the sector (Peng & Meyer, 2019). As the theory of strategic trade states, political institutions have a value-adding power and government interventions in certain, strategically important, industries can increase the chance of their international success (P. R. Krugman, 1986). However, institutional changes that promote FDI, if successful, can result in higher inflow of FDI, accelerate the privatization process, as it was the case in Hungary after 1989, further described in the historical context section, and have positive spillover effects, that are further described under the macroeconomic flows in the Economy subsection.

3.1.4.2.3 Economic intermediation

Financial markets

Financial sector, together with central bank, are regulated through monetary policy that deals with money supply and interest rates. The tools that central bank uses – interest rates, bank reserve limits and governmental bonds are used in order to determine the lending process of commercial banks that in turn regulates the money supply on the market. Increasing liquidity of money on the market may accelerate the economic growth through stimulating investments, while reducing it may contribute to halting inflation.

Regulations of financial sector, the cost of transferring deposits into investment's loan and, in general functioning of the capital market are important determinants of economic potential as also the efficient financial system is necessary for a well-functioning of other markets. The main objective of the financial market is the distribution of total production and income among agents – relocating funds between entities having surplus money to entities lacking funds. Thus, because of this close relationship between the structure of savings and the financial sector, its state should be scrutinized (Mygind, 2007).

3.1.4.3 Informal institutions

The informal institutions constitute the unwritten rules of the game that are based in culture and transferred within culture through socialization. Different levels could be distinguished starting from beliefs and religion, which are deeply rooted and rather unchanging, to norms and habits that can change relatively fast (Mygind, 2007). For instance, even though during the communist times in Poland, the ruling party was devoted on maintaining communist values, it succeeded only on the surface, and after the fall of the Iron Curtain, old values such as personal freedom survived the repression and beliefs such as Catholicism were quickly reborn (Mygind, 2011).

Economic institutions are responsible for policy incentives for business activity. However, their decisions are also affected by culture – informal institutions – and what is preferred in the society. Cultures can promote initiative and risk, which means that savings and investments also rely upon informal institutions' characteristics. The level of social thrust also influences the way in which business activity is handled, affects transaction costs and may constitute barriers for cross cultural transactions (Mygind, 2007).

3.1.5 Economy

Not only the regulations, incentives and restrictions of the market-oriented institutions (I) but also the economy itself play a great role in accelerating or hindering growth (Mygind, 2016). The economic system can be divided between the economic flows and economic resources. The former encompasses the flow of income and production and thus allows to track the economic development. The latter entails the stock of accumulated resources – elements contributing to the economic growth (Mygind, 2007).

The stock of resources is not only given by nature but also accumulated from investment flows, thus both the macroeconomic flows and economic resources constitute the economic system (Mygind, 2007). First, due to the orientation of the paper among the long run growth determinants, the economic resources are presented, and then economic flows are depicted, which, however, point to the short-term growth.

3.1.5.1 Economic resources

Factors of an economic growth for the analysis related to economic resources are inspired by elements of an overview model developed by Niels Mygind in 2016 (Mygind, 2016). Even though the model does not aim to be mathematical or empirical, it allows to structure the analysis of the subsystem in question. The model is composed of seven components of the production function, which can be divided based on their *quantitative* or *qualitative* nature. Among the former, there are labour (L), capital (K) and resources (R). Moreover, pollution (P) – a non-sustainable use of resources – should also be included and deducted from resources (R). Among the latter, quality of labour (Q), quality of capital in the form of technology (T) and the efficiency of the use of inputs (TFP – total factor productivity) can be specified (Mygind, 2016). It is imperative to note, that the model used distinguishes between Q, T and TFP, yet in many empirical models and estimations Q and T are put into one box with TFP. For instance, the Solow-Swan model developed by a Nobel Prize winning economist, called a neoclassical growth theory, recognized three determinants of economic growth. In its production function two elements are given, same as in the model used in the paper – capital (K), workforce size (L). However, technology, treated as increases in productivity, is given externally to the model. It states that technological advancement provokes productivity increase without changing the capital or labour input – pointing to both Q, T and TFP of Mygind's model (Solow, 1956).

Nevertheless, more focus should be put on the qualitative side of economic resources as it plays a more important role in sustaining the economic potential. Focusing on resources quality, through investing in training of workforce and in fixed capital of firms and infrastructure, increases the prospects of future economic development (Mygind, 2007). This view is legitimized by Romer, that considers knowledge as an input to production with increasing marginal productivity and states that its accumulation by profit-maximizing agents drives the long-run growth (Romer, 1986). However, simple investing in resources is not sufficient, yet also high quality of institutions needs to be ensured to be able to efficiently allocate these investments thereby reaping benefits from these resources (Mygind, 2007).

3.1.5.1.1 Supply and demand-based growth models

Functioning of the economy relies on a balance between what is demanded and what is produced. In the short run, demand factors lead the growth. In the long run, however, supply factors play the vital role. In accordance with classical economic theory, typically growth models, such as the one presented, are oriented around the potential of the economy, its supply side, thus are considered to be long run models (Mygind, 2016). Keynesian approach, however, points to the demand for goods and services that power the economic activity (Blanchard et al., 2017).

The model presented assumes that demand is high enough to cover the supply (production = demand) and thus that the economy works at its full capacity, utilising its resources, increasing the demand and transforming savings into investments (savings = investments) (Blanchard et al., 2017). The supply excess, an output gap, would negatively affect demand. When the demand is too low and thus the expected return is not satisfactory, the full production capacity is not exploited. In line with the accelerator effect, low use of capacity results in reduced income and failing GDP, which means also less favourable conditions for savings and thus drastic fall of investments (also in innovation) as it becomes futile to increase the amount of fixed capital. Lower revenue together with high public expenditures worsen the state of public finances, decline the rate of public investment and result in higher interest rates affecting private investors. Thus, the capital and labour can stay inactive for a very long time, which legitimize taking into account also the demand side and not just focusing on the *long run* (Mygind, 2016).

However, in order to analyse the growth holistically, and because of presented negative consequences of supply excess, also the demand side is taken into account. The demand determinants, nevertheless, are difficult to be enumerated. They encompass, inter alia, consumer confidence, the fiscal and monetary policy and the state of the financial system (Blanchard et al., 2017; Peng & Meyer, 2019). They are all covered by different P-I-E elements and the dynamics between them, thereby reducing the need of analysing the demand side yet again separately.

3.1.5.1.2 Labour (L)

The population can be regarded as consumer base and determines the demand and thus the size of a market and its growth potential. On one hand, it attracts market seeking investors to serve the country by locally supplying goods or services, rather than devoting to export. Human capital can also be regarded as the workforce, the number of people who are able to work. Thus, on the other hand, abundance of inexpensive and highly motivated unskilled (and semiskilled) workforce attracts efficiency seeking investors, as they aim to decrease the total costs (Dunning & Lundan, 2008; Peng & Meyer, 2019).

The growth potential of labour is easier to establish in the short run as in the long run it is affected by the level of income reflected in life expectancy and birth rate (Mygind, 2007). Typically, people between 15 and 64 year are considered the potential workforce. The part of the potential workforce that is currently employed or in search of a job is measured by participation rate, which varies around the world due to cultural differences – such as women participation in the labour market, or income levels. Thus, the quantity of active labour force can be deducted (Mygind, 2007).

However, with the ageing population this input element stagnates. The dependency rate measures the pressure on the workforce as it is a ratio of people outside the working age group and those in the labour force. The ratio increases with aging population; however, it should be adjusted for increasing standard of living and life expectancy that prolong the working age potential. From the classical point of view, a country could either invest in programs promoting large families or promote immigration to increase its labour force, thus these initiatives, if any, shall be tracked. Moreover, what can indemnify this input element, it is the quality of labour – Q, which can be ameliorated and increase labour productivity (output per labour units Y/L) with investing in the human capital by offering training and education. As stated in the Solow-Swan, output per worker increase can also come from

increases in capital per worker (K/L) and improvement in the state of technology (Blanchard et al., 2017).

3.1.5.1.3 Quality of labour (Q)

However, the growth potential is not only established through the quantity but also quality of the labour force, which can be based upon its education. Schult, an Amercian Nobel winning economist, proposed a human capital theory that investing in people in the form of, for instance, education and training, accelerates the economy and creates higher returns (Schult, 1961). High quality organisational skills and management expertise attract investors that look for specialized labour and network of suppliers. Innovation clusters and competences of the focal industry – thus Q and T – are alluring for capability seeking investors (Dunning & Lundan, 2008; Peng & Meyer, 2019).

The participation rate in primary, secondary and tertiary education thus plays a role, however, the quality of education should also be examined, as it varies between countries (Mygind, 2007).

Labour productivity

The value that labour creates per unit of output is referred to as the labour productivity (Y/L) and in simplification means how efficient is the workforce. Adam Smith and David Ricardo in their absolute advantage theory and comparative advantage theory respectively were referring to labour productivity (Smith, 1776; Ricardo, 1817). The former one referred to producing more goods in quantity than another country with the same or less amount of resources. The latter referred to a comparative advantage in producing a good if its production's opportunity cost is lower than in the other country. The labour productivity is dependent, inter alia, upon the quality of labour force encompassed in Q, from specialization benefits following economies of scale, and, according to Solow, from increased capital intensity. High labour productivity constitutes favourable conditions for labour-intense industries and encourages efficiency-seeking investors.

3.1.5.1.4 Capital (K)

The volume and the distribution of the fixed capital constitute another growth element as it determines the growth potential resulting from savings and investment rates. Capital can be regarded in terms of its fixed amount such as machines and infrastructure (Mygind, 2007). To estimate the capital's economic potential, market measures can be used. Typically, the production flow is regarded to best depict it (Mygind, 2007).

Infrastructure

In some industries, highly developed infrastructure is of great cost significance for transport and information. The flow of workforce, products, services and information is highly dependent upon transport and communication structures not only from the costs point of view, but also the competition. Infrastructure, however, is connected to geography, as natural geographic conditions affect the level of development of infrastructure. For instance, road transportation can be hindered due to mountains and foreign cargo trade facilitated thanks to access to the sea (Mygind, 2007). This element of fixed capital is also important for investors that look for favourable geography & logistics infrastructure (Dunning & Lundan, 2008; Peng & Meyer, 2019).

3.1.5.1.5 Technology (T)

Capital can be also regarded in terms of its quality – T, being the knowledge incorporated in K. Because of decreasing returns to capital, the accumulation of K cannot alone sustain the growth. Supporting constant increases in labour productivity demands more and more input of capital per worker. At some point, it becomes impossible to save and invest to support further increase of capital, resulting in levelling off of labour productivity. Yet, the sustained technological progress can sustain the growth (Blanchard et al., 2017). Thus, importance should be attached to innovation and R&D undertakings as they are better growth drivers. The quality of capital is alluring to investors that look for knowledge pertaining to value-added activities such as technological capabilities, but also for efficiency-seeking ones that seek relative costs and productivity differences between countries. Capability seeking investors are also attracted by technology and high-tech clusters (Dunning & Lundan, 2008; Peng & Meyer, 2019).

However, the quality of capital is not only shown in its high technological level but also whether it is in accordance to the actual market demand. Investing in technology typically increases both the quantity and the quality of capital, and the output per worker, moving the production function up (Mygind, 2016). The technology is closely connected to exploiting value from natural resources and geographic opportunities. ICT development ameliorates the business starting point for distant and isolated areas (Mygind, 2007).

To measure the quality of production proportion of high value-added and technology-intense production could be used as indicators. Moreover, R&D activities measured as a proportion of production or new patents given can be taken into account (Mygind, 2007).

3.1.5.1.6 Natural resources (R)

Natural resources – R, also contribute to the growth especially for countries that are characterised by their abundance. The economic resources' composition influences in which direction the economy will lead. Some countries can benefit from easy growth opportunities coming from natural resources exploitation rather than from human resources' one (Mygind, 2016). Natural resources, such as mineral fuels and agricultural products, also attract natural resource seeking investors (Dunning & Lundan, 2008). Exploiting finite resources, though, can be regarded both as value-extraction and assets-subtraction and these opportunities coming from natural resources, however, can be constrained by regulations concerning environmental protection or running out of resources' supply (Mygind, 2016).

To measure the natural resources potential, the stock of raw materials and its extractability can be taken into account but also the climate and land conditions favouring different industries such as agriculture and forestry and wind, water and sun energy production (Mygind, 2007).

Depletion of natural resources (P)

In the traditional measures of production, only natural resources are taken into account, and pollution (P), regarded as a non-sustainable use of resources is often not deducted (Mygind, 2016). The exploitation of natural resources may, however, lead to its depletion and in the long run prevent a country from generating value from them. What is more, the side products such as pollution and other destructive environmental effects resulted from production and consumption of resources decrease the value of nature and its economic potential in the long run (Mygind, 2007).

3.1.5.1.7 Total Factor Productivity (TFP)

Even without the increase (K, L, R) or progress of inputs (Q, T), it may be that the production is increasing because of greater efficiency of the use of all these inputs. It can be regarded as Total Factor Productivity (TFP) that results from using and allocating inputs in such a way to yield the highest productivity. However, investments in Q and T can also accelerate the TFP effect and increase the efficiency of using not only labour and capital but also other inputs, turning its usage into being more sustainable (Mygind, 2016). The more efficient allocation of all of the inputs is dependent upon the market agents that are directly and indirectly controlled by country's politics – institutions, especially economic ones (Mygind, 2016). That is why imperative to scrutinize is also the relationship between the economic constituents of growth and the political determinants, as Plosser suggested (Plosser, 1992).

3.1.5.2 Macroeconomic flows

The economic growth of countries is determined by many components and their interactions, as it was already mentioned until this point, yet the actual flow of income and production, such as measured by GDP, can also be another indicator of consumers' and other market agents' expectations – the demand side of the growth, and thus these expectations are analysed in the macroeconomic flows section within the economic system.

In the PIE model and in this paper, the economic policy is assigned to the Institutions subsystem (economic institutions to be precise), such as the fiscal and monetary policy, however, the economic policy concerning macroeconomic stabilization may be also regarded as part of the economic system (Mygind, 2007).

3.1.5.2.1 Principle macroeconomic variables

The most important for savings is the general standing of the economy and the predicted future growth, measured using several macroeconomic factors. Saving rate, defined as a proportion of income that is saved, is significant for economic growth as a higher saving rate increases the output per person. In the long run, high saving rate is needed for investments (Blanchard et al., 2017). Private investments, also foreign ones, are drove not only by access to capital, but by perspectives of high returns. Thus, the economy can be regarded as a self-enforcing circle, that high growth prospects bring high savings and investments (Mygind, 2016).

3.1.5.2.2 Macroeconomic stability

Low quality institutions contribute to uncertainty and high transaction costs and unwillingness for establishing new businesses and putting and effort and improving the quality of existing ones. Economic policy indirectly stimulates business activity through ensuring macroeconomic stability. Thus, stable economic environment such as low inflation, stable currency and sustainable public debt is favourable when it comes to economic growth (Mygind, 2016).

High and uncontrolled inflation creates uncertainty and depreciate the currency thereby reducing the level of investments and innovation. Stability of exchange rates, on one hand, is of great importance to inflation rates, trade and investments which, on the other hand, influence economic growth. For instance, weak domestic currency encourages exports and hinders imports, and strong domestic currency accelerates imports and hinders exports (P. Krugman et al., 2018). However, even though market seeking foreign investors would be discouraged as the depreciation would mean loses,

efficiency seeking investors could find an opportunity in it and produce for export. High unemployment indicates low efficiency of using resources, overcapacity of L and ruining the Q results in feeble demand that has a negative effect on investments. High current account deficits, which means that the value of imports exceeds the value of exports, are unsustainable in the long run, require toughening of fiscal and monetary policies that decrease demand and investments (Mygind, 2007, 2016).

3.1.5.2.3 Foreign trade

Plosser, among its four factors of growth also highlighted the trade impact (Plosser, 1992). However, the economic gains of trade were established starting from classical trade theories of absolute advantage and comparative advantage developed by Adam Smith and David Ricardo respectively and assume gains from specialization resulting in increasing total world production, consumption and therefore total income (Smith, 1776; Ricardo, 1817). Neo-classical trade theory, the Heckscher-Ohlin model, also point to specialization and its net effect of increased economic efficiency (Heckscher et al., 1991). New trade theory, however, underlines gains from economies of scale – greater efficiency of using inputs. That is why, the foreign trade of Poland and Hungary is taken into account, especially its growth in relation to countries' GDP.

3.1.5.2.4 FDI

In general, there exists a positive relationship between the growth of world GDP and flows of FDI (Dunning & Lundan, 2008). FDI impacts different dimensions of a host country's growth – economic (micro and macroeconomic), political and societal (Blonigen, 2019). Firstly, it affects macroeconomic variables such as output, market structure and balance of payment. Secondly, power of MNEs derived from substantial investments may affect national sovereignty and lower country's independence. Thirdly, it can contribute to the creation of foreign elites and enclaves and affect the fashion of local production. Because of the complexity and magnitude of economic gains of foreign investments, a separate subsection is developed below.

To estimate the future inflows and trade patterns of a country, investors' expectations concerning the economic potential and institutional quality is examined by tracking down the development of FDI and portfolio investment (Mygind, 2007). However, some FDI inflows are not accompanied by productivity gains, as they do not bring any capital (K) into a country, and they are deducted from the FDI portrayal in this paper.

Effects of FDI on country's economic performance

In order for the FDI effect on output to take place, capital stock (K) must be injected into the host country resulting from the investment, or in the case of a take-over, resources must start to be more efficiently used. Inward FDI, especially in the form of a greenfield investment, increases the quantity of capital (K) and creates job opportunities (L). Acquisitions contribute less to the growth, as they mainly refer to the change of ownership, yet they are often accompanied by other investments in fixed capital – increasing K (Blonigen, 2019; Mygind, 2016).

The economic consequences of FDI largely depend on the motivation behind undertaking it. By extending taxonomy used by J. Behrman in 1972, Dunning identified four general types of foreign production's rationale: natural resource, market, efficiency and strategic asset seeking (Dunning & Lundan, 2008). The elements of the growth that MNEs employ in its foreign activates (L, K, R), are affected in turn, together with TFP.

The efficiency seeking investors by engaging local human capital (L) that would otherwise be resting, create new jobs of often higher labour standard, either directly – by employing locally – or indirectly by, for instance, sourcing locally and generating opportunities for local firms. This employment is also followed by training and further knowledge transfer (increasing Q). The simple employment of capital (K) may also result in technological progress (T). The host economy benefits from adoption and implementation of new technology, knowledge and skills and their *spillovers* further increasing the quality of capital and labour – T and Q. By bringing management skills and technological capabilities FDI can also enhance the efficiency of the use of inputs and contribute to rise of TFP, further increasing the growth. Moreover, FDI can further enhance production efficiency, by shifting resources usage from less to more productive sectors of the economy and thus increase the output (Blonigen, 2019). What is more, the market seeking investors increase the variety of goods and services – bring new ones, often better and cheaper, yet contribute to decreasing sales and disappearance of local products and, what follows, producers. However, openness to international competition and access to international networks intensify productivity of industries and deepens innovation through specialization (increasing T). It can also have negative consequences, such as overly cross-countries' dependence and using foreign networks instead of domestic ones. Natural

resource seeking investors, however, by exploiting the resources in a country may contribute to their depletion (P) and negatively affect the natural environment (Peng & Meyer, 2019).

3.1.5.2.5 Labour market

Nature of the labour market dictates the participation rate, labour's demand and supply as well as composition and mobility of the workforce.

Important to track is the unemployment rate as it indirectly influence the economic growth through well-being of individuals and demand that is driven by them, but also through budget deficits resulting from lower governmental revenue and higher expenditures. Moreover, it is indeed that countries with its labour reserve employed totally would not be attractive to labour-seeking FDI, also because, most likely, they would be characterised by increasing wages (Mygind, 2016). Thus, changes in wages are also important to be tracked, as its growth suggests failing competitiveness in terms of labour-intense industries. Low, competitive wage levels equal for some higher profits and can result in more investments in the future.

3.1.6 Surrounding world

The surrounding world's impact, even though given externally to other subsystems of the model, can be seen and analysed together within the P-I-E elements. However, some interactions of these elements are worth mentioning separately (Mygind, 2007).

3.1.6.1 International political relations and institutions

Country's relations with other countries, security issues, conflicts but also membership in international organizations and alliances influence country's political agenda. Country's institutions are prone to change either directly, coming from international alliances and agreements (e.g. WTO, EU) or indirectly, by observing other countries. Moreover, in need of funds, countries often succumb to IMF or World Bank pressure to develop or alter its institutions and policies (Mygind, 2007).

What has been significant for both Poland's and Hungary's economic development after the transformation from plan- to market-oriented economy was the accession to the EU. That is, above all, its international relations within EU is scrutinized.

3.1.6.2 Competitiveness

A country's image as an internationally competitive country plays a vital role in, inter alia, attracting capital and skilled workforce through investments. To determine whether Poland and Hungary have shown characteristics of internationally competitive economies, the competitiveness concept is used. The term, however, has been struggling to gain its own definition and to have its driving factors singled out mainly because of measurement issues (Dunn, 1994). The notion embraces various factors that influence country's economic wellbeing that are often linked and connected and thus separating a single economic factor to determine competitiveness would yield incorrect results (Dunn, 1994).

4 Historical context – transformation to market economy

The consequences of the economic transition are visible in the politics, institutions, and economics state of the countries today and thus in order to explain the economic positions in which Poland and Hungary are now, the essence of the transition period ought to be presented. Firstly, the historical background is presented briefly in order to grasp the context behind the collapse of the command system. Secondly, in line with the framework guiding the thesis, the transition is presented divided into politics, institutional and economic dimensions.

4.1 Collapse of communism

After the Second World War, Poland and Hungary found themselves under the Soviet occupation with established soviet-like communist governments and, what follows, centrally planned economies. With no market signals and rigid institutional system, the countries were experiencing mis-development. The extensive growth reached its limits in the 1960s, growth rate was decreasing in the 1970s and stagnated in the 1980s. The inefficiencies of the command system of the Eastern Block were blatant when standards of living were compared with the capitalist West. Further productivity improvements could only be possible with the intensive growth, which, however, required a solid institutional framework, based on decentralization and characterised by willingness to change, that would direct resources into a more efficient use – the market mechanism. The possibility of the transformation had been hindered by monopolistic power of communist and the control of the Soviet Union (Mygind, 2011). Yet the need for economic change was growing and thus the reformative period in USSR started in March 1985, when Mikhail Gorbachev came to power as a general secretary of Central Committee of the Communist Party of the Soviet Union (CC CPSU) and appeared to be devoted to reforming the Soviet society (Marples, 2004). The restructuring programme was referred to as “Perestroika” and encompassed both economic, political and societal changes. Due to increased Moscow’s tolerance and lack of fear concerning a Soviet intervention, Eastern Europe started breathing easy. It was apparent that the Brezhnev Doctrine was not to be followed which meant that hardly an intervention was to be undertaken if one of the Soviet CEE countries were to secede. The series of revolutionary movements started in 1989 and resulted in partially free election in Poland, fall of the Berlin Wall, collapse of regime in Bulgaria and Romania and formation of new governments in Hungary and Czechoslovakia (Marples, 2004).

4.2 Transition period

In 1989 several differences could be observed between communist countries of the region, including Poland and Hungary. On one hand, in terms of macroeconomic conditions, the first semi-free elections in 1989 in Poland were accompanied by hyperinflation, deep macroeconomic crisis and immense shortages and external debt (Balcerowicz, 1994). Hungary, on the other hand, had already adopted reforms since the 1960s that enabled an eased start of the transition period. Albeit, neither Hungary was an exception when deep structural changes were required to be applied and creation of new institutions was a pivotal point to develop in the long run. Nevertheless, the most demanding part was to overcome the practices inherited from the communist era.

4.2.1 Politics

The first semi-free elections in Poland were held in the 1989 as only one-third of the seats in Sejm, lower house of the Parliament, were selected democratically. Due to extremely weak support for the communist party and no Moscow's reaction, the elections resulted in a first genuine government in the Eastern Block with Tadeusz Mazowiecki as a non-communist Prime Minister (Mygind, 1994). However, the political environment for conducting the economic reform was unstable with many changes in the government personnel between 1989 and 1993 allowing for populist promises and undertakings that significantly affected the transformation (Balcerowicz, 1994). Moreover, what was extraordinary for the entire Eastern Block, the labour movement and state firms' workers had an astonishingly important position in the socio-political field in Poland. Solidarity, a trade union created in the beginning of 80s that throughout the decade had attained 10 million members, was a first union in the COMECON that was state-recognised (Mygind, 1994). It became a legalised opposition to the non-democratic communist rule in Poland, and after the 1989 legislative elections it had is representatives in the Parliament. Even though its movement helped in ending communism, its strong position in 1989 was regarded as unfavourable for the economic transition by Balcerowicz because of pressure on wage increases and reduction of central power in leading change processes such as privatization (Balcerowicz, 1994). However, the period of extraordinary politics, as referred to by Balcerowicz, a window of opportunity, allowed for the economic transformation in Poland to be conducted radically and rapidly (Balcerowicz, 2017). Such a breakthrough as a fall of communism resulted in the readiness of the society to embrace a radical change, which they treated as a price to be paid for regaining independence (Balcerowicz, 1994).

In Hungary, there was an attempt to overcome the totalitarian system already in 1956, when the revolution war entailed a bloody counterinsurgency and caused the loss of thousands with masses emigrated to western countries. However, after the revolution a slight change towards 'soft' dictatorship was adopted by a new leader, Kadar, that had opened the progress for informal groups with divisions of interest (Mygind, 1994). Furthermore, it raised people's critical attitudes and triggered the path to contribute to the disintegration of the single political party thus creating multi-party system. After several rounds of negotiations by the round table the new constitution had passed in 1989 and paved the road to the free elections in 1990 (Bozóki, 1994). Although successful steps towards democratic regime seemed to be take place, the next elections turned back to the post-communist party as the spirit of communism did not disappear right away the regime change (Lomax, 1994).

Due to the mentioned political conditions – the power of trade union and constant changes in government – Poland had a more challenging start to implement the reforms than Hungary did (Balcerowicz, 1994). However, the special form of transition in Hungary which juxtaposed the required measurements toward the market economy with the communist heritage also created a peculiar characteristic to the Hungarian transition.

4.2.2 Institutions

The change in the political landscape after 1989 has entailed the reorganization of the whole economy with the need to restructure supporting functions of economic processes. In the case of Hungary, there were antecedent steps of slight reforms taken towards achieving market economy's conditions and the gradual liberalization path was taken as the reforming rounds started already in the 1960s. Despite of such measurements taken, stabilization policies were significant to handle both monetary and fiscal readjustments (Kornai, 2001). In Poland, the liberalization process was started later, although already by the last pre-transition government. In 1982-1983 restrictions concerning opening and developing new private firms were lifted and enterprises autonomy was increased (*Transition Report 1994*, 1994). However, the mentioned hyperinflation, crisis and immense shortages required rapid stabilization, and in order to do so, the liberalization process had to go hand in hand (Balcerowicz, 1994). Thus, the stabilization and liberalization programs were set in motion at the beginning of January 1990, and privatization law and other institutional restructuring (such as insurance, bankruptcy and anti-monopoly law) initiatives were done so in the following months (Balcerowicz, 1994).

4.2.2.1 Macroeconomic stabilization

In order to fight the immense inflation of 245% in 1989 in Poland, the macro-economic stabilization was required that would focus on, inter alia, ameliorating the budget state, managing money supply and switching the interest rates sign from negative to positive. Moreover, from the institutional point of view, the wage determination process required an enforcement of control in order to halt the price increases and hence inflation. One of the tactics to fight the inflation through the wage control, was the "Popiwek" tax launched at the beginning of the transition and was applied on the excess of an average wage. Such oversights were introduced on the 1st of January 1990 and wage control procedure was altered in 1991 which further received criticism and indignation from trade unions (Balcerowicz, 1994). After the introduction of the reform, the country's economy was performing relatively better than other post-socialist economies and it managed its hyperinflation (Fig. 4) without a considerable negative effect on its cumulative GDP (Balcerowicz, 1994).

Before 1989 Hungary was in much better position than Poland when it comes to inflation, and the regime change did not shock enormously Hungary's inflation (Fig. 4), even though the prices of gasoline and other energy sources elevated remarkably (Boote & Somogyi, 1991). It was mainly due to reforms that started already in 1960s when more lax authoritarian regime (usually called "Goulash communism") came into force under the lead of János Kádár (Kiss & Szapáry, 2000).

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Poland	244.6	567.9	76.8	46.1	37.0	33.0	28.0	19.8	14.9	11.6	7.2
Hungary	17.1	28.4	34.8	23.7	22.5	18.9	28.3	23.5	18.3	14.2	10.0

Figure 4 Inflation in Poland 1989-1999 measured by the consumer price index, based on data from World Bank

4.2.2.1.1 Liberalization

One of the key steps done by Poland and Hungary was a comprehensive set of reforms aiming to strengthen legal framework for corporate governance and property rights. The emerge of decentralization entailed also measurements to be taken toward liberalization of both price and trade.

Handling the inflation on the macro level was nevertheless not enough to fight the mentioned shortages in Poland. The liberalization policy of removing restrictions to economic freedom had to follow to allow for elasticity of supply and prices (Balcerowicz, 1994). The distortion of prices, both in Poland and Hungary, was due to the immense controls and subsidies designed to satisfy the economy with domestic production without foreign imports. There was no competition on the market – either internal or external one. Hence, the policy encompassed the total reduction of remaining

restrictive institutions on private business activity, abolition of centrally planned process of input allocation, radical liberalization of prices and withdrawing quantitative trade restrictions (Balcerowicz, 1994).

By 1992 in Poland already all prices were determined by market except for those centrally planned such as electricity, water and gas, which goal was to outpace inflation (*Transition Report 1994*, 1994). In Hungary, by January 1991, 90% of good were free from control except those public utilities and needs such as local transport tariff or textbooks. Moreover, also price control over domestic and identical import goods vanished (Boote & Somogyi, 1991).

In Poland the majority of quantitative trade restrictions and subsidies were abolished by 1990. Halting state subsidies to low prosperity state enterprises was essential, as it is described in the Economy section.

The progress of reforms can be tracked through EBRD's transition indicators covering market-enabling areas, where 1 indicates no change, 4 points to the great advances in transition regarding the aspect in question, while 4+ (formerly 4*) indicates a fully transformed to market (*Transition Report 2010*, 2010). In Poland, by 1999, significant progress was already observed within price liberalization (3+), yet 10 years later Poland already showed characteristics of an advanced industrial economy in that field (4+). Even though the institutional restructuring stressed anti-monopoly measures, in terms of competition policy, 10 years and 20 into the transition showed little progress. Only some actions were undertaken to encourage competitive environment and reduce entry barriers yet not significantly (3 and 3+ respectively) (Fig. 5). (*Transition Report 1994*, 1994; *Transition Report 1999*, 1999; *Transition Report 2009*, 2009).

	Poland		**Hungary**	
	Price liberalization	**Competition policy**	**Price liberalization**	**Competition policy**
1994	3	n.d.	3	n.d.
1999	3+	3	3+	3
2009	4+	3+	4+	3+

Figure 5 Markets and trade indicators in Poland and Hungary for 1994, 1999, 2009, based on data from Transition Reports, EBRD 1994, 1999 and 2009

In Hungary, in the spirit of liberalization and fostering enterprises competitiveness, the new corporate association law was put into effect which opened the way of establishing different kinds of company

formats and ability of creating joint ventures even with foreign investors (Boote & Somogyi, 1991). In order to stimulate competition, and handle sluggish foreign trade, the new corporate association law made entitled both resident and non-resident individuals and entities to establish or acquire shares in companies. Also amongst several measurements of opening towards new enterprises anti-trust policy was introduced and monitored by the Cartel Office (Boote & Somogyi, 1991). EBRD also collected and graded how Hungary performed during transition period, that clearly marks the progress (Fig. 5).

4.2.2.1.2 Privatization

Privatization of enterprises was necessary for decentralized control and there was a great need for new enterprises to restore and even more desirably exceed the production before transition besides the reciprocity between the impact of restructuring that enables the appearance of new companies. Moreover, efficiency incentives needed to be ensured such as ownership rights to finances and efficient corporate governance.

Poland chose to execute privatization in a more modest way, with its key strategic sectors, than Hungary did and implemented the privatization process much later, which resulted in worsening the financial position of many enterprises and loss of potential benefits. The debate about how to conduct the privatization programme was ongoing due to the mentioned unstable political landscape (Hashi, 2000; Svejnar, 2002). In 1993 in Poland, still 50% of GDP was accounted to the state sector, however, privatization did not forward evenly. Privatisation of small state enterprises was going relatively quickly, in contrast to big state enterprises that experienced some political difficulties. The majority of privatization transactions of small enterprises was largely completed by 1992 (*Transition Report 1997*, 1997). The privatization method choice plays a vital role in affecting the functioning of state-owned enterprises, and in terms of small enterprises it was done through transferring of property from state firms to local authorities, which then sold it to insiders, such as managers and main employees that were given a head start to buy it (Mygind, 2011; *Transition Report 1997*, 1997). Large-scale enterprises privatization was more demanding. The tracks to private ownership included direct sale to a new firm, and commercialization (*Transition Report 1997*, 1997). The latter entailed that the bulk of shares of companies to be privatized was not distributed among citizens but among 15, state-selected, investments funds. Then, citizens had to become owners of these funds through a voucher method allowing one citizen to possess one share in each of the investment funds. However, due to the changes in government, only in December 1994 such investments funds were established together

with appointed supervisory boards. Finally, after immense negotiations and debates in the political field, all firms' shares were transferred from the Treasury to the investment's funds by early 1996 (Hashi, 2000). Therefore, at the end of 1996, almost 45% of medium and large enterprises commenced the privatization process (*Transition Report 1997*, 1997). Moreover, the privatization process was hindered due to trade unions' activity, yet in 1997 the need for employee consent was eliminated which facilitated the privatization process.

In 2009, 20 years through the transition, more than 25% large enterprises were privately owned or in the privatization process (3+) (Fig. 6). Nevertheless, the growth of private enterprises was slowed heavily because of the lack of solid institutional framework – reliable banking system and financial sector (Balcerowicz, 1994).

	Poland			**Hungary**		
	Large-scale privatisation	**Small-scale privatisation**	**Governance and enterprise restructuring**	**Large-scale privatisation**	**Small-scale privatisation**	**Governance and enterprise restructuring**
1994	3	4	3	3	4	3
1999	3+	4+	3	4	4+	3+
2009	3+	4+	4-	4	4+	4-

Figure 6 Enterprises indicators for Poland and Hungary for 1994, 1999, 2009, based on data from Transition Reports, EBRD 1994, 1999 and 2009.

Capital flows into Poland and Hungary were of great importance for the privatization process and realizing the countries' growth potential. Because of the scarcity of domestic financial resources, limited savings and underdeveloped financial system in the countries, conditions for potential domestic investors were unfavourable. However, between 1990 and 1993 Poland received 7%, 839 million USD, of all foreign direct investment flows into eastern Europe and the former Soviet Union, unlike Hungary which covered 44% of the total FDI (5 441 USD), mainly accrued by the effect of forceful privatization process (*Transition Report 1994*, 1994). Hungary was regarded as more socially and macroeconomically stable and thus perceived to be less risky. The privatization process in Hungary was ameliorated due to the legal framework for newly registered companies already adopted before the regime change in 1989. In the early years of transition, privatization was intense mainly for small and medium enterprises (*Transition Report 1994*, 1994). By the enactment of the Privatization Law in 1995, Hungary opened its key market sectors to foreign investors that promoted takeover of such companies as fuel oil, pharmaceutical or commercial banks (*Transition Report 1997*, 1997). The simplified procedure alleviated privatization process through direct sale characterized by

evaluating bids that had been taken on companies and enabled by the State Privatization and Asset Management Company rather than offers to employees characterized mostly other countries in transition, as mentioned also Poland (*Transition Report 1996*, 1996). FDI into Hungary had immense economic consequences starting from the recovery of export market with a generation of 70% of the export market driven in late 1990s (Kiss & Szapáry, 2000). Its positive spillover effect also effectuated in efficiency improvement and rising tendency of manufacturing sector output. Due to lack of expertise and technology, insider privatized domestic companies lagged behind even with an increasing demand and reliance on supply originated from multinational enterprises (*Transition Report 1999*, 1999).

Additionally, besides the new enterprises financed through external privatization, the appearance of small and medium companies after the regime change (thanks to their legal recognition and dissolution of usually too large firms) also contributed to quality improvement. By these and spinning of the state-owned enterprises, numerous new firms started to produce in a more effective way and meet new customer demands, in which Poland showed an outstanding progress (Svejnar, 2002). Overall, privatization done by both domestic and foreign investors lead to an upward trend in production, that in 2000 resulted in 70% of Poland's and 80% of Hungary's GDP (EBRD, 2000).

4.2.2.1.3 Financial system

In Poland, because of the total destruction of capitalism, no institutions required for the market economy were present. There was a lack of a central bank, not to mention commercial banks or a stock exchange and the budget deficit was impossible to finance without government bonds. Thus, in terms of the reform of financial institutions, Poland had a long way to go (Balcerowicz, 1994). Starting from establishing first commercial banks in 1989, to amending the banking law in order to establish legal framework for banking operations and reinforce central bank's independence, Poland began to recapitalize state-owned bank and issuing state bonds worth 1.5 % of GDP. By 1994 all banks were responsible for setting their own rates for deposits and lending, that were in the majority of cases positive in real terms. In 1991 securities and foreign investment law joined together with a foundation of a stock exchange (*Transition Report 1994*, 1994). 20 years through the transition, banking reforms did not reach full convergence of laws and regulation and struggling tendency was observed. Securities laws, however, were showing steady progress (Fig. 7).

	Poland	**Hungary**

	Banking reform and interest rate liberalisation	Securities markets and non-bank financial institutions	Banking reform and interest rate liberalization	Securities markets and non-bank financial institutions
1994	4	3	4	3
1999	3+	3+	4	3+
2009	4-	4-	4	4

Figure 7 Financial institutions indicators for Poland and Hungary for 1994, 1999, 2009, based on data from Transition Reports, EBRD 1994, 1999, 2009

In Hungary, in order to encourage and stimulate the appearance of new companies, banking reform in 1987, resulted in the separation of banks in function. The banking sector became divided into the central bank, the former single National Bank, and other commercial banks (Bauer, 1990). The earlier banking reform resulted in the stability of the banking system later on, as it is shown in (Fig. 7). After the establishment of the two-tier banking system, the government expanded the ability to supervise the compliance of the bankruptcy law and discourage lending money into non-profitable companies thus encouraging having a constant reassessment of the viability of enterprises (Boote & Somogyi, 1991). The banking reform also entrusted banks by setting their own loan rates and by 1990 foreign exchange related trade operations started as well. By the opening of first brokerage house and enterprises offering shares, the Securities Market Law was adopted with the aim to regulate issuance of securities and set traders' obligations which further paved the way for the establishment of Budapest Stock Exchange in 1990. Also state-owned insurance companies ceased to exist and overtook by two major institutions in 1986, where the required legal framework (Insurance Act) only became adopted later in 1991 (Boote & Somogyi, 1991).

4.2.3 Economy

The regime change shocked the economy of both Poland and Hungary with a sudden sharp drop in production output that led to years struggling to restructure the whole economy. The countries' shared characteristics, from root causes of breakdown until the upheaval from communist era, thus are depicted cumulatively and follows the patterns of J-curve (Fig. 8).

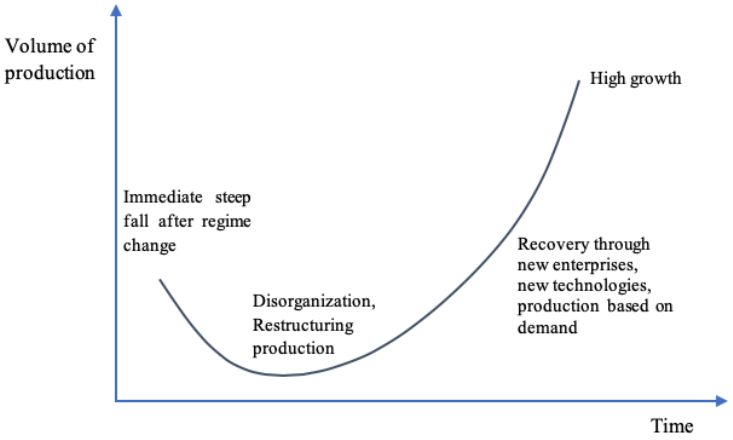


Figure 8 J-curve, stages of production in transition period, based on (Blanchard, 1997)

The conditions of pre-transition period left its heredity for post-communist economies, where countries needed primarily to tackle its consequences. The turnaround shed light on the failures of command economy, that had ceased long time ago to exploit the extensive growth opportunities of depending heavily on manufacturing sector, rather than switching in time to the intensive growth model and seek efficiency in production. Due to import substitution attempts of many years, the production was focused on overgrown heavy industry with poorly developed services sector (Balcerowicz, 1994). In the command economy, no incentives were given to enterprises to work on its capital and labour productivities. The managers of state firms got used to the subsidies offsetting their production costs and in order to maximize their potential profits and outshine planned figures beforehand executed production with weaker, thus cheaper inputs or pretended innovation through elevated pricetags. As the centrally planned economy did lack of the corrective mechanism, there was no such verification nor from the market, nor central planning had the rationale to ascertain the manipulation behind (Winiecki, 2002).

Because of the abolition of the central planning system, state firms started to suffer from disorganization (Blanchard, 1997). Governments in both Poland and Hungary cut their mentioned subsidies, and even with the progressing price liberalization reform, a lot of inefficient companies went into bankruptcy resulting in the mentioned drop in production. The banking sector was also struggling with disorganisation and was underdeveloped to handle juncture and capably lend money for restructuring. Even though banking reforms took place already in 1987 in Hungary and 1989 in Poland, early trials of financing did not perform well (Gray & Holle, 1996; Kiss & Szapáry, 2000).

The newly founded commercial banks usually did not have the appropriate experience in money lending, and the state firms that did receive money for restructuring, were incapable to efficiently use it and the capital injections was turning out to be money in the drain.

The disintegration of COMECON had also contributed to the fall of output. In 1989, 44% of all Poland's exports and 45% of Hungary's exports were to the COMECON region. For instance, Poland exported goods from sectors such as machinery, electronics and pharmaceuticals and textiles to the Soviet Union (Balcerowicz, 1994). In the absence of this demand between partnering countries, further production was futile which resulted in exacerbating the plight (Winiecki, 2002).

However, there was a dire need for new capital that could accelerate the restructuring process, which gaining, nevertheless, was hindered due to several aspects (Kornai, 1994). On one hand, newly established commercial banks, as mentioned, were inefficient when it comes to financing. On the other, the privatization practices that were in favour of the employees were not characterised by sufficient capital injections that would significantly ameliorate the organisation of production (Blanchard, 1997). Thus, seemingly appropriate solution was to attract external financing options to overcome of the usage of obsolete machinery and production structure.

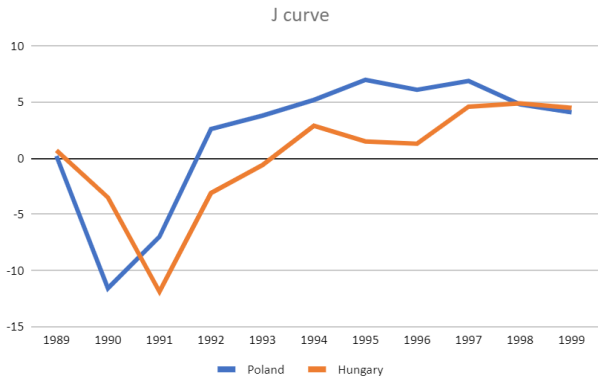
Subsequently, the inefficient use of human capital resulted in blasting of unemployment both in Poland and Hungary. The appearance of new private companies was unable to quickly ameliorate the situation and simultaneously replace the production of state firms and hire the unemployed. Even though in the pre-transition era unemployment as such was not a case, restructuring of enterprises and installing new technologies lead to soaring unemployment with a notably low exit rate to employment (when unemployed people get employed) due to lack of skills and qualification (Blanchard, 1997).

Both Blanchard and Winiecki agree the drop in the outcome was an inevitable consequence of the system change, no matter how governments tried to hasten the recovery process. The way of correcting communist system specific distortions differentiated in case of Poland and Hungary. Poland rather followed a radical solution and applied the so-called shock therapy in measurements toward trade and price liberalization, while Hungary preferred the gradualist therapy through slight reforms that already took place in the Kádár era and continued at round table negotiations after the regime change. However, in terms of privatization process, Poland was more gradual than Hungary, as already depicted in the Institution section.

Figure 9 GDP % change in real terms, adjusted for price change 1989=100, based on data from Transition Report 2000, EBRD

Nevertheless, these attitudes towards state liberalization converged to the same direction with several similarities after 1992 (Winiecki, 2002).

In spite of the initial discrepancies, thanks to the stimulating nature of foreign capital and privatization that was elaborated in the analytical framework, transition economies turned around and even succeed in exceeding their pre-transition production level.



Undeniably, the J-curve pattern can be easily found identical through the stages that formed the way of production in both Poland Hungary (Fig. 9).

5 Analysis

5.1 Politics

5.1.1 Poland

5.1.1.1 Social groups

5.1.1.1.1 Distribution of income between sectors

The steady progress of equality has been observed in Poland between 2007 and 2017. Yet, OECD and the World Bank both point to years 2013-2017 as the most significant drop in inequality, measured by the GINI index, from the point of 0.299 in 2013 to 0.275 in 2017 (OECD, 2020f; The World Bank, 2020). The level was similar to the most equal country among OECD ones – Slovenia with is score 0.243 in 2017. Nevertheless, it is worth delving into which sectors are characterised by the highest income levels and recorded profits to spot the possible connections to political processes and institutions.

When it comes to income distribution, the highest level of income throughout the years 2011-2018 had been going to people employed in sectors "Information and Communication" (176% of an average gross salary in Poland in 2018) and "Mining and quarrying" (169%), in which relatively not a lot of people were employed (2.4% and 0.87% of all employed people in 2018 respectively) (Appendix P1 and P2). These sectors are rather contrasting in a way that the former one is rather knowledge-intense and requires specialist knowledge and the latter labour-intense. It could mean, that mainly the high-quality human capital (Q), and miners, can benefit from relatively high-income opportunities. It is indeed that companies within "Mining and quarrying" (just after Electricity sector) and "Information and Communication" were characterised by accumulating the highest share of profits constituting 275.2%, 85.1% respectively of the average gross profit of a non-financial enterprise in 2019 (Appendix P3).

5.1.1.1.2 Distribution of income between regions

When it comes to an average salary divided between regions in Poland, the regional inequality is observed when looked at Mazowieckie region (in which the Capital is situated), where the average monthly income has been much higher than in the rest of the country (Appendix P4). In 2018, people employed in Mazowieckie earned almost 1.5 times more than in Warmińsko-Mazurskie, region

characterised by the lowest average salary. This regional distribution is connected to political preferences and thus reflected in the last elections' results further described in the subsequent section.

5.1.1.1.3 Unions

There can be a connection observed between economies' sectors accumulating the highest shares of income and profits and the existence of unions related to this employment. As mentioned in the Historical Context, Poland has a tradition of powerful trade union functioning, as it was the case with Solidarity in the 80s. In the modern days, the trade union activity is still visible, and its lobbying power can be seen on political processes.

In 2018 in Poland there were 12 500 of functioning trade unions, in total employing 1.5 million people, which constituted around 9.4% of all persons performing work generating earnings (Statistics Poland, 2019b) (Appendix P6). The most significant one to look at is the "Mining and quarrying" sector which is the most organized occupational group that united almost 91% of all employed people in the sector in 2018. A particular connection can be deducted that the most organized occupational group is also characterized by the highest salaries (excluding "Information and Communication") and its enterprises by the highest profits (excluding "Electricity, gas, steam and air conditioning supply"). As further unfolded in the economic resources section, Poland is coal-abundant and the electricity production from coal in Poland in 2015 constituted almost 81% (Appendix P7). Even though there is a declining tendency, the share is extraordinary as, to compare, in the whole EU it constituted only 25.3% (*Electricity Production from Coal Sources (% of Total) - European Union*, 2015). What is more, miners do not only have enough power to immensely drive their wages up but also to influence the future policies concerning energy production, as the ruling party has been planning to establish even more coal mines (Zurawski, 2019). The situation generates a great environmental debate as this form of energy production produces immense carbon emissions, further deteriorating the relationship with the EU, as unfolded in the Surrounding World section.

The second most organized occupational group was "Education" with 29.3% of its workforce engaged in trade unions in 2018. Even though it is the 4th biggest group in terms of the number of employed persons and the one contributing immensely to economic development through ameliorating the quality of labour force, it has had the lowest average growth rate of salaries between 2011-2018 (Appendix P5). The group has organized in 2019 a strike lasting three weeks, with 600 thousand teachers and 15 thousand schools involved. However, hostile negotiations with the

government failed and the strike was suspended (Słowik, 2020). Hence, it can be deduced that the group holds no significant power to influence political institutions with the current political processes' climate, due to (as it is described in the subsequent section) not constituting the ruling party's electorate.

5.1.1.1.4 Findings

Both Poland's GINI values of 2017 indicate that the country represents a relatively equal society in terms of the distribution of income and together with the falling tendency of the indicator's value constitutes a good equality outlook. However, it is therefore imperative to notice also, that the highest average income is held by social groups characterized by relatively small quantity and that the majority of economic power is concentrated in one region. Moreover, the two significant occupational groups "Education" and "Mining and quarrying" are particularly interesting in terms of their relationship with political processes, institutions and economy. In terms of the former, even though the occupation requires expert knowledge and pedagogical skills and directly contributes to the economic growth through improving the quality of human capital, it is characterised by a lower than average salary and the lowest average growth of the salary. Nevertheless, as said in the subsequent section, this group is of little importance for the ruling party. Mining, however, is labour-intensive and, environmentally unprofitable which is unfavourable for the relationship with the EU. Nonetheless, the sector is characterised by a relatively immensely high income, profit and forecasts indicating that this social group can exercise great power on the country's institutions through its voting impact on political processes.

5.1.1.2 Political processes

5.1.1.2.1 Political competition

Parliamentary elections

The last parliamentary elections held in October 2019 in Poland brought changes to the composition of Poland's parliament. Between 2015 and 2019 the right-wing Law and Justice Party (PiS) had held the majority of seats in both the Sejm, the lower house of the bicameral parliament, and the Senate, the upper house ("Country Report Poland," 2020). In 2019, 43.6% of the votes to the Sejm were given to PiS, which again gave them the majority of seats, and thus almost opposition-less ruling (Appendix P9). However, the Senate was not secured by the party, with *only* 48.0% of seats coming from 44.6% of votes, and the centre Civic Coalition occupied 43.0%, thanks to received 35.7% of votes.

The PiS relative *defeat*, together with the growing support of other parties – such as centre-left Democratic Left Alliance and centre Polish People Party, that received 12.6% and 8.6% votes to the Sejm respectively, has ended the political unanimity in the parliament (Appendix P9).

Presidential elections

The last presidential elections were held in 2015 when two rounds were undertaken due to the unaccomplished yet mandatory absolute majority (National Electoral Commission, 2015a; The Constitution of the Republic of Poland of 2nd April, 1997, 1997). In the first one, Andrzej Duda, supported by above-mentioned PiS, received 34.8% of the votes, while Bronisław Komorowski, who was then the incumbent President and was supported by the centre Civic Platform (which in 2019 later formed the Civic Coalition), received 33.8% of the votes (Appendix P10). The second round resulted in the close call victory of Andrzej Duda with 51.5% of votes, that showed, even then, that Poland's voters are considerably divided in half.

Political competition

Even though the parliament is characterized by a multiparty system (five parties present in the Sejm after 2019 parliamentary elections), the interests of all social groups can often be not evenly represented, as passing legislation in Poland requires first approval of Sejm – held by PiS, and then of the Senate. Due to majority in both of the houses before 2019, PiS was able to pass any bill without the opposition. Now, the majority of PiS only in the Sejm ensures that – first, any bill proposed by the party is forwarded to the Senate, and, – second, any other legislation proposed by other parties representing different social groups does not leave the house. When the legislation is forwarded to the Senate, it now may or may **not** be approved. If it is **not**, then the law proposal is considered invalid. However, if it is approved, then final say belongs to the President, who can veto the bill (The Constitution of the Republic of Poland of 2nd April, 1997, 1997). The current situation of having the Sejm but not the Senate in the hands of one party enables the interests of more social groups to be represented by institutions. However, with 48% of PiS mandates in the Senate, it is often a close call, and bills, in some cases controversial, are passed. Moreover, having the President who is *unofficially* dependent upon the ruling party, reduces the chances of veto. Thus, the current political composition still constitutes a threat to democracy.

Political support

The connection between different social groups and parties can be observed by looking at polls that scrutinize the educational, employment and regional background of voters.

In terms of the educational background in 2019 parliamentary elections, PiS had the immense support of people with primary (63.3%) and secondary (64.0%) education, while people with higher education voted diversely – mainly for Civic Coalition (36.6%), PiS (30.1%) and The Left (15.9%) (Pawłowska & Dudzik, 2019). Thus, the highly-educated group does not constitute the PiS electorate, which justifies the Education's trade union's lack of political power (as described in the Social Groups section) with the current government.

In terms of employment background, PiS had its support mainly in farmers (67.7% of all farmers voted for PiS), pensioners (56.9%), unemployed (56.1%) and people working in administration (38.8%). The majority of entrepreneurs (38.8%), managers (39.6%) and students (25.1%) voted, however, for Civic Coalition (Pawłowska & Dudzik, 2019). Thus, as stated in the previous paragraph, PiS has its support among unskilled or semiskilled population characterised by lower income. It can be therefore also deduced, that decisions concerning political institutions are dictated by these groups' – farmers, pensioners, unemployed – interests. And indeed, as unfolded in the in terms of pensioners, it is visible in the policies concerning retirement age, that was decreased in 2017 and since then has equalled 60 for women and 65 for men (*Emerytura w Wieku Powszechnym*, 2020).

Differences between the countryside and big cities were also observed – in the former, majority of people, around 56.4%, voted for PiS, while in cities of over 200 000 people, the majority voted for Civic Coalition (*Wieś Głosuje Już Tradycyjnie. I Nie Na PSL. A Duże Miasta?*, 2019). Moreover, in the local government elections, the wealthiest region in Poland, as stated above, Mazowieckie Voivodeship, elected for a President of the Capital of Poland a Civil Coalition representative – Rafał Trzaskowski, who utterly won with the Law and Justice candidate Patryk Jaki – 56.67% to 28.53% (Appendix P11).

Findings

The composition of the Parliament with the majority of Sejm mandates in the hands of PiS, together with the incumbent President lead to two significant conclusions. Firstly, their consolidated power constitutes a threat to democracy through the abuse of power due to possible coalitions formation in the Senate resulting in all bills passed and underrepresentation of different views and interests. Moreover, the lack of real competition in the Sejm does not allow for constructive criticism coming from the opposition that could result in improvement of the functioning of the political system. It can further lead to abrupt changes that could amplify the country's uncertainty and constitute a political

risk, discouraging potential investors. Secondly, PiS less educated electorate from the countryside, which interests are taken care of by the institutions (in contrast to highly educated populations' interests), can influence the upcoming presidential results of May 2020. If the presidency is given to the opposition, the presidential actual non-conflicting right to veto could be reinforced together with the legitimacy of Constitutional Tribunal that reviews whether the bills are compliant with the constitution. If the incumbent President is reelected in 2020, Poland has yet to look for another parliamentary election in 2023 that could reestablish its full democracy. Furthermore, the blatant conclusion is, that the Institutions are orchestrated by the populist political game of the ruling party who receives its political support by attempting to please selected social groups, rather than by genuine concern of the country's overall long-term development.

5.1.2 Hungary

5.1.2.1 Social groups

5.1.2.1.1 Distribution of income between the sectors

To unfold the society's equal distribution of household income, the Gini coefficient presents an erratic pattern; at the beginning of our analysis, - in 2010, when parliamentary elections were held, the index portrayed Hungary as one of the best performing in the EU (0.266, where "0" signs equality, 1 total inequality) (OECD, 2020g). Generally, Hungary is still perceived as having an equal distribution in the society (0.289), albeit a more precise investigation is revealed further.

Concerning the overall income level, Hungary has shown amelioration in the average net earnings in the past 10 years (Hungarian Central Statistical Office, 2020l). There is a steady increasing tendency from the stance in 2010, pointing to the fact that since then net earnings have almost doubled (2019's net average earning is 184.5% of the 2010's) (Hungarian Central Statistical Office, 2020l). Looking into the wealthiest social groups, however, those are employed in the sectors of "*Financial and insurance activities"* (180.9% of the average net earning in 2019), "*Information and communication"* (169.5%) and "*Electricity, gas, steam, and air conditioning supply"* (163.9%) to be considered as the most remunerated (Appendix P12). Also, due to the sector specification, to get employed and acknowledged in either the financial, information and communication technology, or electrical sphere, proper educational qualifications are requested. Thus, in this vein, one can suggest that by achieving a higher status in the quality of human capital (Q), it reflects a remarkably higher financial rewarding as well. Nonetheless, these skills demanding sectors contribution to the national economy, - excluding financial enterprises, as there is no data published for that branch -, performed soundly for the "*Information and communication*" sector by over 7% based on the period of 2010-2017 and showing a decreasing tendency for the "*Electricity, gas, steam, and air conditioning supply"* economic branch (Appendix P13). Nonetheless, on the field of R&D (in the statistics perceived as the sector of *Professional, Scientific and technical activities*) employed remittance perceived to be better than average (138.0%), however, their value-added share from the economy is increasing firmly over the years, most accurately it was 7.46% in 2017. Whereas, in economic branches where employment identified to be outstanding, also backed by their noticeable share of the national economy (for "*Manufacturing*" 37.9% and for " *Wholesale and retail trade*" this figure is 16.7% in 2017), even though their remittance level slightly exceeds the average or even gains below.

5.1.2.1.2 Regional distribution

Within Hungary, the dissimilarities between the regions are discernible. Elaborating on the regional distribution of employment and the corresponding earnings level, the Budapest area ostensibly depicts better conditions compared to the other regions (Appendix P14, P15) (Hungarian Central Statistical Office, 2020j). Elucidating the recent figures available from 2017, while most of the northern and southern parts' net earnings are around 80% of the average earning, the Central – and Western Transdanubian region close to the average (Hungarian Central Statistical Office, 2020j). On the contrary, in Budapest, this amount is almost 30% higher, thus generating a noticeable divergence on the distribution of wealth and yet in the political landscape, that function is to be unfolded in political processes. It is also worth to mention, the level of educational attainment by region, as it sheds light on political strategies. By taking into consideration the population's educational background, the proportion of those, finished at least the secondary level, is the highest in Central Hungary (22.8% of the total population over 7 years) where Budapest encompasses 14.2% (Appendix P17). Whereas in the rest of Hungary, this ratio is around 7%. Thereby it can be concluded, as there is a remarkable difference between Budapest and the countryside manifested in not just earnings level, but in employment and educational background as well.

5.1.2.1.3 Unions

The importance of trade unions and popularity in Hungary amongst employees declining throughout the years. The apace decline is traced back to the change from the command to the market economy, when the hastened privatization, ownership changes brought forth a notable decrease in the number of members. As of the recent figure available, trade union members compose around 10% of the labour force, - 4-500 thousand employees -, where the public sector found to have the most prominent representativeness (25%) compared to the private sector's (5%) feeble proportion (ETUI, 2019). Activity-wise, trade unions in the mining, energy, education, transport, and health-care sectors are counting for the highest participation rate. Despite their existence, in the lack of accustomed practices of these unions, on a sectoral level, their collective power is diminished, meaning that their will is not reflected when articulating a legislation. Neither they have the abundant power to patronize any political parties, only at a company level where the bargaining power is represented (ETUI, 2019).

Findings

It is imperative to say that prosperous salaries are concentrated and available for jobs require special educational and vocational qualifications. As of the sectors' value-added of the national economy is

considered, besides the skill demanding sectors (like information technology and scientific, research-oriented), a great extent is covered by the manufacturing and trading economic branches. Nevertheless, the preponderance of Budapest is conspicuous over the countryside, which makes the country uneven. This divergence is traced back to the distinct level in earnings, the concentration of employment, and the notable distribution of the educational attainment. When it comes to the unions, their political influence is imperceptible, having a representative role than exercising coercive power, thus leaving the employment and sector-related decision making unilateral.

5.1.2.2 Political processes

As of the Hungarian presidential role is considered, the president is elected by the Parliament for a 5-year mandate, thus the selected person is greatly dependent on the representativeness and power of the National Assembly's political parties (Hungarian Government, 2020d). Notwithstanding, the role rather implies formal procedures, than undertaking and proposes notable measurements; after a law passed by the parliament the ratification and conformity with the constitution are exercised by the president. However, it is worth to mention, that the prevailing president from 2012, was a member of Fidesz, the current government.

Parliamentary elections

Recent parliamentary elections - in 2014 and 2018 -, concluded with the landslide victory of Fidesz and its junior partner KDNP. Thus, the current political landscape is determined with a dominated presence of the prevailing government, the Fidesz – Christian Democratic People's Party occupying 133 seats out of the 199 in the National Assembly (see Appendix P18, P19). Representatives of the extreme right-wing party, Jobbik, is through the hold of 26 seats, while the past's prominent socialist party, the Hungarian Socialist Party, is only amounting for 20 seats. The rest of the seats, more precisely 20, are divided between smaller scope parties. However, it is worth to mention, that election law adopted in 2011, - right after the prevailing ruling government victory -, was changed notably to favour the government's interest and strengthen their chances in the long term (Hungarian Government, 2020b).

Municipal elections

As of the 2019 municipal elections are considered though, the opposition left-wing parties jointly achieved major gains; counting for the capital, where the opposition party's candidate won by 50.9%

over the Fidesz-KDNP candidate (44.1%), and the majority of Budapest's districts (14 out of 23 districts) (Appendix P20) (National Election Office of Hungary, 2020). Out from the 23 towns with county rights, in only 12 where Fidesz-KDNP could succeed, nonetheless, its victory in the countryside remained sound. Similarly to the parliamentary elections, amendments have been effectuated in the political institutions so it would stabilize the ruling party's position (Hungarian Government, 2020a).

5.1.2.2.1 Political competition

Based on the current parliament composition, eight parties are represented (National Election Office of Hungary, 2018). However, having the two-thirds majority, the prevailing government can easily take through bills that would favour their interest, thus despite rival parties existence, their will and thus their patronizing social groups' interest will be vaguely presented in legislation. Furthermore, despite Fidesz and its alliance are got enfeebled on the municipal elections, their strategy seemingly successfully achieved. As by letting opposition parties' popular representatives taking their 5-year mandate as mayors, they have bolstered the way for the 2022 elections (EIU, 2020a). Moreover, by targeting the countryside, - the strategy they pursued for the 2019 municipal elections -, encompass a broad community, that can not be ignored. It can be deduced, based on social groups, that notable distinction between Budapest and the rest of the country requires a distinct strategy for political parties to gain the electors' sympathy.

5.1.2.2.2 Political support

As referred through the scrutiny of social groups, the dispersion of political viewpoints can be identified. Comparing the parliamentary elections held in 2014 to 2018, Fidesz, except the territory of Budapest, could fortify its dominance in county-towns, but most prominently in villages (by 5.1% points) (Kolozsi & Szémann, 2018). Moreover, by delving deeper into the development level where votes are originated from, there is a tendency as the less developed a municipality is, the more they sympathizing with the prevailing government. Also, this further underlined by the recent local government elections, where Budapest favoured the opposition, while the countryside supported the ruling party. The phenomenon can be traced back to different perceptions; on one hand, in the countryside, the rural development programs, thus the progress to cease polarization of the country make the local community engaged in the government's current measurements. On the other hand, as explicated through voters' favoritism in the countryside, the prevailing government concentrates on those regions, where higher educational attainment is less common (Appendix P17).

Findings

As of the political processes considered, for the time being, Hungary is portrayed by the predominance of pro-governmental forces, through deliberately exercising ascendancy over the political procedures and stymieing the rise of any rival parties. Nevertheless, as elucidated through the laws of elections, notable amendments are undertaken, that deepens the government's embeddedness in the system. Furthermore, by stabilizing their power, the entailed changes in the political institutions have started with the election system's entrenchment and the majority's overwhelming decision-making.

Moreover, the strategy built for election campaigns profoundly considers the conditions of social groups. Based on the incorporation of statistics and recognized strategy of the prevailing government, the Fidesz-KDNP fraction's target is the countryside, more accurately those clusters where income level perceived to be lower and the proportion of people with higher educational attainment is uncommon.

5.2 Institutions

5.2.1 Poland

5.2.1.1 Political Institutions

According to the Constitution, the Republic of Poland is a democratic state ruled by law that follows the principles of social justice. Public power is decentralized by the territorial system and divided between legislative, judicial and executive branches. Firstly, legislative power is exercised by the Sejm and Senate (460 deputies in the Sejm and 100 senators in the Senate), that are elected for a four-year term in elections where voters elect people who then choose representatives, such as a Prime Minister. Secondly, judicial power is exercised by the Supreme Court, common courts, administrative courts and military courts. Constitutional tribunal and State Tribunal work in parallel to the courts, having different competences. The Supreme Court supervises the activities of the courts, Constitutional Tribunal supervises whether legislative and executive undertakings are compliant with the Constitution, and the State Tribunal is responsible for ruling on constitutional liability of the highest offices of the country. Thirdly, executive power is exercised by the Council of Ministers together with the President, who is elected for a five-year term, directly by voters, and may be re-elected only once (The Constitution of the Republic of Poland of 2nd April, 1997, 1997).

5.2.1.1.1 Democracy

It is imperative to investigate whether the theory is applied in practice and whether Poland's political institutions have indeed shown high democratic characteristics.

Poland has **not** been categorized as a full democracy by the EIU Democracy Index, however, it was relatively close with its score in 2014 (Appendix I1). Since then, the overall democracy score has fallen – equalling 6.7 out of 10 in 2019, indicating that Poland has been a flawed democracy with a worrying tendency of becoming an *illiberal democracy* (The Economist Intelligence Unit, 2019). Sustainable Governance Indicator also indicates that Poland has been falling behind when it comes to the quality of its democracy, with the score of 5.1 in 2019 vs 8.4 in 2014 (on a scale from 0 to 10, 10 being the highest score, Appendix I2). The index, when divided between rule of law, access to information, civil rights and electoral processes, reports scores 3.8, 4.7, 5.3 and 6.6 respectively. Due to their worryingly low levels, especially of rule of law and access to information, the categories are examined closer below.

Rule of law

The country's political institutions' quality when it comes to rule of law has been especially low in terms of the category called the appointment of justices – 2.0, in which Poland received a score 2 out of 10 (*Quality of Democracy*, 2019). It is mainly justified by the major political issue with Constitutional Tribunal in 2015, where governmental control was installed over the body. Even though the judicial review index (also very low – 4.0) claims that the courts are independent, in some cases they fail to be legally compliant (*Quality of Democracy*, 2019). Moreover, the Freedom House reduced in 2017 the score of the category rule of law's judiciary independence from 3 to 2, and in 2018 to 1 (scale from 0 being the worst, to 4 – the best), further legitimizing the concerns (Appendix I5). Interesting to observe is also the deteriorating score of legal certainty provided by SGI (4.0 out of 10) that refers to governmental actions' compliance with legal provisions, which, as said above, mainly result from questionable changes within the judicial system (Appendix I2).

Access to information

The access to information received a score of 4.7 by SGI (out of 10) mainly due to the record low score of freedom of media – 3.0 (Appendix I2). According to also the World Bank and Reporters without Borders, the situation drastically deteriorated in 2015 to represent a satisfactory situation, yet at the edge of being a problematic one (Appendix I12). Since 2017, however, Poland's media's situation has been deteriorating with the index score approaching the difficult situation. As mentioned

before, 2015 was the year when PiS achieved majorities in both houses of the parliament and started to exercise a great influence on the society through the state-owned media, broadcaster TVP, that serves as a propaganda channel that disregards opposition's actions and praises PiS (Reporters Without Borders, n.d.). According to the Freedom of Expression and Belief score, however, there is no concern regarding expressing personal views concerning the politics (score 4 out of 4), nevertheless, as media, the academic freedom and education system have been exposed to political indoctrination since 2017, when the score changed from 4 to 3 (out of 4) (Appendix I4).

Electoral Processes

Thirdly, even though the government has increased its influence on the electoral process since 2014 the SGI's category scored relatively higher than others in 2019 – 6.6 (out of 10) (Appendix I2). Freedom House, however, has deteriorated the score of Electoral Processes of Poland in 2019 from 4 (out of 4) to 3, pointing to declining fairness of electoral framework and related laws (Appendix I4). However, cases of discrimination, especially against minority groups are observed which lead to a decline of an SGI score of Civil Rights and Political Liberties – 5.3 (out of 10) (Appendix I2). What is more, Freedom House has reduced the Functioning of Government scores of openness and transparency of the government in 2017 from 3 to 2 (out of 4), as well as the indicator of determining policies of the government, indicating the scrutiny limitations introduced on legislation, from 4 to 3 (out of 4) in 2018 (Appendix I4). However, throughout 2013-2020, the Freedom House has been assigning Poland the highest possible score of political pluralism and participation freedom – 16 out of 16, indicating that all segments of the society have ceaselessly equal political rights and opportunities (Appendix I4). Nevertheless, in practice, the actual political opportunities for PiS candidates may be more favourable due to, as mentioned, the power held by PiS over the public television and the Church, further described under Informal Institutions.

Civil Rights and Political Liberties

SGI's index tracking civil rights and political liberties has been falling since 2014 (Appendix I2). In terms of the latter, legislation, for instance, concerning public events was passed that favour state-organised and church-organised public events and disallows counterdemonstrations in the same place (*Civil Rights and Political Liberties*, n.d.). In terms of the former, anti-choice movements have become more widespread in politics, that aim at further restricting (already the most restricted) abortion law in Europe (*Polish Abortion Law Protesters March against Proposed Restrictions*, 2016). Such governmental undertakings directly favour the Church initiatives and implement, in law, its ideological vision. It can be thus deduced that the political institutions are directed by the teaching of

the Catholic Church and that there exists a strong relationship between the ruling party and the Church.

Findings

In terms of Poland in the last couple of years, there has been a significant relationship observed between political processes and the functioning of political institutions. No indicator has increased since 2014 when in 2015 PiS had its majority in both Sejm and Senate and its person in the Presidential Palace. Yet all of the indicators have been rather deteriorating, achieving the lowest possible levels in 2019, indicating an inferior state of governmental quality. The worst juncture has been observed when it comes to the judicial system, which independence has been questioned since 2016. What is more, the freedom of media has been limited and used as a channel for voters' manipulation and consumers decisions shaping regarding consumption and investments. Moreover, the dynamic and unstable situation concerning the rule of law creates further uncertainty, creating altogether a pessimistic image of Poland's political institutions.

5.2.1.2 Economic institutions

5.2.1.2.1 Quality of economic institutions

Firstly, the regulatory quality indicator provided by WGI gives an insight on governmental ability to formulate and further implement legislation that supports the development of the private sector. Until 2014 the estimate had been steadily growing, however, in the period between 2014 and 2018 a fall and thus worsening regulatory conditions were observed (Appendix I11). Secondly, the SGI economic policy performance measure (7.0 out of 10) indicates, in contrast, a steady economic climate provided by the economic policy in force that promotes the competitiveness of Poland's capabilities and as a business location. Nevertheless, the score has dropped by 1 since 2014 (when it was 8.0 out of 10) (Appendix I3).

Shifting from the regulatory quality to the level of society's confidence when it comes to law – rule of law, especially contract enforcement and property rights, WGI, on one hand, showed a similar tendency of the rule of law indicator as to the one of regulatory quality – until 2014 it showed a steady increase and since then it showed a drop, to reflect a relatively low level in terms of a percentile ranking – 66.83 in 2018 (Appendix I11). WEF, on the other hand, in its Enabling Environment Pillar measures the protection of property rights, intellectual property rights (from 1 to 7) and quality of land administration (from 0 to 30). Scores for both property and intellectual property rights were higher in 2019 than they were in 2018 and equalled 4.1 (from 1 to 7), providing an optimistic outlook

(Appendix I15). World Bank's Ease of Doing Business Enforcing contracts category, that refers to needed time and costs of resolving business disputes, showed relatively low yet stable scores – 64.4 in 2019 (Appendix I13).

When it comes to corporate governance, according to EBRD, in 2014, the process of Governance and Enterprise Restructuring has not yet been completed, yet that significant progress of corporate governance was observed with a score of 4- in 2014, close to the maximum 4+ (Appendix I6). Ease of Doing Business indicator showed, however, relatively low scores when it comes to protecting minority investors throughout 2014-2018 and their rights in transactions and corporate governance (scores around 60, out of 100). In 2019 a progress was observed and 2019 showed a score of 66.0 (Appendix I13). Moreover, according to Corporate Governance indicators provided by WEF, Poland's main weakness in the field is financial auditing and accounting standards, which equalled in 2019 4.7 (out of 7). Conflict of interest regulations indicator showed a score of 6 (out of 10), while shareholder governance – 6.3 (out of 10), which means that some instances of directors' misuse of company's assets for their gain are observed and that there are limited rights and role of shareholders in decision-making process of companies, relatively low governance safeguards and narrow transparency about ownership stakes (Appendix I15).

According to the Freedom House, however, Poland has scored 4 out of 4 since 2013 in the question concerning the ability of an individual to exercise their property rights and setting up businesses without excessive interference (Appendix I5). However, starting a business indicator, that measures the effort, time and cost of establishing a company yields also a relatively good score – 82.9 in 2019 (out of 100), yet decreasing since 2015 – 85.94. The most troublesome appears to be registering property that treats property transferring and land administration quality – 63.9 in 2019, much lower than in preceding years (Appendix I13). WEF's results confirm that with its quality of land administration score – 19 (out of 30) in 2019, lower than in 2018 (Appendix I15).

When it comes to the public sector corruption, on a scale of 0 (highly corrupt) to 100 (very clean), the Corruption Perception Index has been going up and down yet oscillating around 60 between 2012 and 2018. In 2019, however, the score equalled 58, the worse since 2012 (Appendix I14). The perception of whether the public officials exercise their power for private gains as well as whether the state is dominated by private interests is covered also by a WGI indicator of Control of Corruption.

Since 2010 the index has been rather growing (the higher index, the less corruption observed), indicating that corruption has been becoming more under control, yet only until 2016, as the percentile ranking has been falling ever since, equalling 74.52 in 2018, which makes the situation nearly alarming (Appendix I11).

Findings

In general, the quality of legislation and economic environment in terms of promoting private sector development and competitiveness have been rather favourable, yet, the status of protective measures of proprietors, especially minority investors, in Poland appears unsatisfactory and even though some changes in scores are observed, they are rather insignificant. Exercising these property rights, however, can be concluded to be rather untroubled, yet some concerns arise when it comes to: equality of opportunities resulting from economic exploitation; lack of ownership transparency and misuse of corporate assets for private gains. It could be connected to levels of corruption and power usage for private gains. Even though different sources show different tendencies, the level of corruption in Poland remains worrisome.

5.2.1.2.2 State regulation

According to EBRD, in terms of price liberalization, Poland completed its price liberalisation process in 2003 (except for housing, transport, natural monopolies) achieving the score of 4+, typical for advanced industrial economies (Appendix I6) (*Transition Report 2003*, 2003). When it comes to privatization, since 1996, there has been none small enterprise state ownerships, as mentioned in the Historical Context, nevertheless, in 2014 the **large**-scale privatization was not yet completed (4-) (Appendix I6). Concerning the economic exploitation, whether everyone has the same opportunity and freedom, Freedom House rated Poland with a score 3 out of 4 (Appendix I5) and noticed that in an attempt of nationalizing the private sector, the current administration has been buying out foreign owners and fill managerial positions with its trusted people – expanding the ruling party's power over businesses, thereby showing a reversible tendency to when it comes to privatization process of large enterprises (*Freedom in the World 2020: Poland*, 2020). As PiS calls it – "repolonisation" mainly concerns foreign-owned banks and newspapers (media) and officially is done in line with party's ideology of "economic patriotism" and thus pleases the nationalistic crowd ("Poland's Government Wants to Take Control of Banking," 2018). Nevertheless, it may serve another political agenda to increase state control over strategic tools, such as economic (banks) and social (media) ones.

Taxation system

SGI rated the tax policy in Poland as 6.0 (out of 10), indicating that to a large extent the policy achieves its objectives, yet the levels of corporate income tax (19%) and red tape are still higher than in the rest of CEE (*Economic Policies: Taxes*, 2019) (Appendix I3). Indeed, according to the Statistics Poland, the tax revenue from corporate income tax has been increasing with an average rate of 7.31% since 2010 (Appendix I17). In terms of the complexity of the tax system (time needed to prepare and pay the taxes), Poland is ranked in the bottom group, scoring 2.7 out of 10 (Appendix I3). Ease of Doing Business report, under paying taxes category, showed also a falling performance of Poland since 2016 with a score of 76.4 (out of 100) in 2019, which means growing complexity and payments for a firm (Appendix I13). The complexity of the tax system results, inter alia, from constant changes and exceptions introduced. In terms of the levels of taxation, the ruling party reduced the tax burden on firms in their first year of existence from 19 to 15% and for small companies from 15 to 9%, thus promoting entrepreneurship (*Economic Policies: Taxes*, 2019). However, the *PiS government* moved up the free-tax allowance when it comes to personal income tax to relieve the poorest part of the society from the tax burden, but instead, introduced the solidarity tax and exit tax on people and companies with high-income, yet again favouring its poor electorate.

The connection between the taxes and competitive environment is reported by the WEF, which surveys conclude with a score of 3.6 (1 – worst, 7 – best) that in Poland fiscal measures do indeed distort competition (Appendix I15). However, in 2014, Poland scored 4-, close to the maximum 4+ according to EBRD reports, when it comes to competition policy, indicating that significant improvements have been done to decrease the market power abuse and support competitive landscape since 1989 (Appendix I6). Nevertheless, according to the score of market dominance, the public opinion regarded the corporate activity in Poland suggest that it is not being fairly spread among many firms – 4.7 out of 7 in 2019 (Appendix I15).

Labour market regulation

The labour market policy scored 6.4 out of 10 according to SGI, indicating that it was more or less successful in its assumptions (Appendix I3). However, one of the identified problems in terms of the labour market policy is the temporary employment contracts that are barely taxed and provide no job security (*Labor Market Policy*, 2019). Not only do they constitute a threat of exploitation of the workforce, but also, they do not contribute to governmental revenue. Moreover, the current government has been devoted to increasing the minimum wage levels (which added on to the problem

of temporary contracts), which was done both in 2018 and in 2019 – a rise of 7% in 2019 resulting in the value of 14.70 PLN per hour and 2 250 PLN per month. As stated in the analytical framework, the minimum wage is unfavourable for the economy and indeed in terms of Poland, it developed the shadow economy and negatively affected the employment situation (*Labor Market Policy*, 2019). However, such undertaking was motivated by the political agenda to please the poorest part of the society, which as mentioned in the Social Groups section, constitute part of the PiS electorate.

Trading

As mentioned in the Historical Context, according to Transition Reports of EBRD, Poland has achieved a score of 4+ in terms of trade and foreign exchange system already in 1997, indicating an almost complete abolishment of tariff barriers, and in 2000 already introduced the floating exchange (*Transition Report 1997*, 1997; *Transition Report 2000*, 2000) (Appendix I6).

Since the tariff rates are the same for the EU, non-tariff barriers should be looked at as well as border clearance efficiency. On a scale from 0 to 100, Poland in 2019 scored 59.5, while the best performing EU country – Finland – scored 68.5 (Appendix I15) (WEF, 2020).

The Doing Business score concerning trading across borders that scrutinizes the complexity of the overall process of exporting and importing, is of the highest possible score of 100, since 2015 (Appendix I13).

FDI

According to OECD's FDI Regulatory Restrictiveness Index, since 2010 Poland has had a steady performance of 0.072 score, above the OECD average, pointing to the more closed economy (0-open; 1-closed) (Appendix I16) (*FDI Regulatory Restrictiveness Index*, n.d.) When the score is divided between four different categories, in 2018 Poland scored best in terms of screening & approval, had some restrictions on key foreign personnel and on foreign equity – 0.056. In terms of industries, Real Estate Investments (0.9), Radio&TV broadcasting (0.575) and Media (0.298) were the most restricted sectors for FDI. Nevertheless, these scores are not high, meaning that Poland cannot be considered as a closed economy in terms of FDI (Appendix I16). However, in the last 10 years, some restricting legislation were introduced especially concerning investments in strategic sectors for the country – such as power generation, gas storage (*Investment Policy Measures*, n.d.). In 2016 a law was imposed that limits the ownership possibilities of agricultural land (*Freedom in the World 2020: Poland*,

2020). It was done so to please the farmers, one of the biggest groups of PiS supporters, as unfolded in the Politics section.

Even though unpopular in Europe, 21 Special Economic Zones (SEZs) were located in Poland in 2019. Established before the EU accession, publicly-owned, SEZs are characterised by special regulatory regimes of no custom collection and special incentives offer (UNCTAD, 2019). The existence of SEZs is set to be until 2026, however, in 2018 the "Poland Investment Zone" law established that foreign investors can receive preferential conditions all over the country if some criteria are met. These criteria were changed to being more favourable to investors and do not take into account only quantitative measures as they did before – such as capital expenditures and jobs created, but also sustainability and R&D aspects of undertakings (UNCTAD, 2019).

5.2.1.2.3 Economic intermediation

Financial markets

In 2010, the banking reform and interest liberalization transition process was at a stage of significant improvement towards BIS standards when it comes to banking regulations and laws – favourable bank competition landscape was established together with effective supervision (Appendix I7).

According to WEF'S Depth score that takes into account the domestic credit to the private sector (53.5% of GDP), SMEs financing (3.9 out of 7), venture capital availability (2.9 out of 7), market capitalization (32.2% of GDP) and insurance premium (2.6% of GDP), Poland performed relatively low in 2018 with a score of 43.2 out of 100 (Appendix I15). The percentage of domestic credit to the private sector, according to World Bank data, has increased since 2008 by 5.4 percentage points to equal 52.7% in 2018, nevertheless, in comparison to the highest share in EU – Denmark with 161.8% of GDP, the performance appears week (Appendix I8) (*Domestic Credit to Private Sector (% of GDP)*, n.d.).

However, in terms of the stability of the financial sector that takes into account inter alia, the soundness of the banks, non-performing loans and credit gap, Poland scored much higher – 91.2 out of 100 in 2018 (Appendix I15). Indeed, confirmed by the World Bank, since 2012 Poland's share of non-performing loans to total gross loans has dropped and equalled 3.9% in 2018 (Appendix I9). According to the *Doing Business* report, the process of getting credit in Poland has been relatively

transparent and safe throughout 2013-2019 (75.0 out of 100) and resolving insolvency has improved since 2014 and equalled 76.5 out of 100 in 2019 (Appendix I13).

Moreover, when it comes to securities markets and non-bank financial institutions, in 2010 Poland was already approaching the IOSCO standards, having operative regulation and considerable market capitalisation and liquidity (Appendix I7).

Findings

Even though the quality of economic institutions has not yet been alarming, the precise regulations concerning privatization, taxation and the labour market can constitute indicators of its deteriorating state due to introduced alterations to serve interests of the ruling party. Moreover, in terms of the economic institutions' impact on the development of the tax system and the increasing minimum wage can have a discouraging power on business activity and harm employment juncture. The trading activity in Poland, however, is unburdened by its policy and stabilized with its exchange rate, however, the efficiency of border clearance process is still relatively low. What is more, Poland has furthered its favourable opportunities to foreign investors, encouraging not only job creation but also innovation undertakings. When it comes to private sector financing, the performance is still relatively low, yet the situation has been ameliorating, indicating a positive outlook. Nevertheless, Poland has shown strong stability characteristics of its financial sector.

5.2.1.3 Informal institutions

5.2.1.3.1 Religious distribution

According to the last available data given by Statistics Poland in 2011, 88.9% of the population declared belonging to a religion and as much as 87.7% of the Polish population were Catholics (Appendix I18). As stated in the analytical framework, during the communist times in Poland, the ruling party was devoted on maintaining communist values, but after the fall of the Iron Curtain, the Catholicism was quickly reborn, indicating its deep roots in the Polish society. The Catholic Church is thus an established institution that has a great effect on both values professed by society, constitute the unwritten rules of the game, and society's views concerning policy. The connection between the formal and informal institutions is apparent when the relationship between the ruling party and the Catholic church is observed more closely (as mentioned under political institutions, the influence of Church in politics is visible in legislation) leading to the conclusion that the separation of church and state in Poland is only *on paper*. The institution of Church is also a considerable tool in the hands of PiS as the immense number of Catholics – another significant social group – can be exploited in the

political game. According to the results of the Centre for Public Opinion Research, almost two-fifths of all respondents (38%) believe that the Catholic Church in Poland was supporting some political parties before the last elections. 95% of these respondents indicated PiS as the one supported by the Church. Not only does the Church supports a party on its own, but it also undertakes electoral agitation in churches as almost one-fourth of all respondents (24%) declare that they have heard from someone in the family, friends or neighbours about such cases (Centre for Public Opinion Research, 2019). Moreover, before the elections in 2019, banners of PiS could be found on the church fences, not to mention that the campaign was also run in parish halls by representatives of the party (Karwowska et al., 2019).

Findings

The Catholic Church in Poland can be regarded as both influencing political institutions' decisions but also as a significant tool in the political game. It can be carefully deduced that the Catholics are regarded as a significant voting group that can be influenced to constitute PiS' electorate through providing legislation in line with Church's value (as the anti-abortion law) but also through direct electoral agitation during masses or other church-organised events. Hence, even though the Constitution claims the separation of Church and State, throughout the PiS rule the reality has shown otherwise.

5.2.2 Hungary

5.2.2.1 Political institutions

Hungary is an independent, democratic republic, with a unicameral parliament (Országgyűlés) compiled of 199 members, elected for a four-year mandate. The head of the state is the president, elected by the parliament for a five-year term, covering duties such as ratification of submitted legislation and enforcement of the constitution. However, the role in practice strongly dependent on the recent political processes. Democratic principles are exercised, first of all, legislative power is exercised by the National Assembly. Nonetheless, as explicated in the politics section, the prevailing government's representation (66.8%) in the National Assembly can easily entail to exercise and effectuate their power through wording and passing laws for their interest. Secondly, the Constitutional Court supervises and judges the conformity of accepted laws and judicial decisions with the constitution. Whilst the executive power is exercised by the government, allowing them to pass decrees, - if there is legislation entitling them -, and create administration bodies (The Constitution of Hungary of 25th April 2011, 2011).

5.2.2.1.1 Democracy

Based on the EIU's Democracy Index Hungary perceived as a *flawed democracy* examined from 2012 to 2019 (EIU, 2020b). The country's performance slightly declined in the aspects of the electoral process, political culture, and the behavior of civil liberties for the examined period of (Appendix I1) (EIU, 2020b). On the contrary, in the past two years, from the political participation angle, the indicator seemingly improved, but one needs to be aware that this progress can originate from the appearance of phantom parties (Appendix P19). In the 2018's elections, presumably as a strategy of the ruling government, these numerous parties eroded the real opposition parties' expansion (Freedom House, 2020). The worsening course of the quality of democracy further underlined for the period 2014 – 2019, by the manifestation in the electoral procedure (from 5.0 to 3.4 out of score 10), pointing to discrepancies and constraints introduced for the registration of political parties and lack of financial recourse provided for the rivals (Appendix I2) (Bertelsmann Stiftung, 2019b).

Rule of law

As of the judiciary system considered, albeit there cannot be deterioration recognized in the scores from 2013 (2 out of 4), its independence remained low until today (2 out of 4) (Appendix I4). The low level originates from the fact that the prevailing government elaborated on the new constitution in its first term in 2012, which besides targeting renewal of the constitution from the communist era, also pertained to a crucial intervention in the distribution of power through the privilege to expand

and appoint its pro-governmental candidates, thus subverting the independence of the Constitutional Court (EIU, 2020a). Moreover, in 2018, a draft bill was articulated that would have introduced a new administrative court system serving the interest of the Ministry of Justice through its appointing entitlement (Freedom House, 2020). As the purpose attracted the ire of the European Parliament and ignited several debates, the bill was withdrawn in the end. Also, the Judicial Review supporting this conclusion as it appraised the Hungarian judicial system extremely weak (4 out of 10), emphasizing the government overriding strategy and actions taken to compel the Constitutional Court (Kúria) and the National Office of Judiciary to make judgments suited to their interests (Appendix I2) (Bertelsmann Stiftung, 2019b).

Access to information

Nonetheless, the perception of democracy is further exacerbated by the media's stance in Hungary. Allegedly, 90% of it, for the time being, is seized and controlled by either state-owned companies or government-allies, evaluating thus *Media Freedom* by merely 2 points out of the maximum 10 (Appendix I2) (Bertelsmann Stiftung, 2019b). In this vein, the role of the media, which should have a critical tone has been transformed into one of the government's tools to serve their interest and manipulate citizens. As of the freedom the press is considered, from 2013, Hungary is depicted as there is a slightly deteriorating tendency (Appendix I12) (Reporters Without Borders, 2020b). Hampering effects are manifested through the eventuality for the independent journalists to raise and publish their standpoints. Neither the online publication strategies are efficient as government favouring content dominates the digitally public sources and applies self-censorship in order not to lose government advertisements (Freedom House, 2019). One of the most remarkable termination was of Népszabadság, the online and offline news portal which, - due to its critical judgment of the government activities -, was compelled to cease and took over by a close-to-government oligarch. Moreover, further exacerbates the plight, that the government can decide on the personnel of the media's regulatory body (Media Council) and of the National Media and Infocommunications Authority, which roles pertain to a 9-years mandate (Reporters Without Borders, 2020a) (Freedom House, 2019).

Electoral Processes

The amendments taken in the election rules reflected by the *Political Pluralism and Participation* index, which overall depicts a deteriorating tendency from 2013 to 2020 (from 15 to 11 points out of 16) (Appendix I4). When it comes to the National Assembly, its composition is derived from the

parliamentary elections for which a new election law is adopted in 2011. It changed the election to only one-round and shifted the electoral system from proportionate to majority, meaning that those got the most mandates uprightly wins, independent on the participation rate (Hungarian Government, 2020b). The delegates for the National Assembly's 199 seats are divided into 106 seats that are selected by the voters directly (as individual constituencies), while 93 seats are selected through a nation-wide list, where voters only chose their preferred party. Moreover, the amended election law does not apply any participation threshold for the election's validity, neither for parliamentary nor for the municipal elections (Hungarian Government, 2020a). When the political parties' formation and the registration procedure is concerned, the administrative procedure perceived as smooth. Albeit, getting financial support is hampered by the government, to prevent any opposition parties to gain popularity. Besides the hindering legislation, the media is utilized to a great extent, usually around elections, when defamatory cases getting frequent and even exaggerated by tools of the media (Freedom House, 2020). When it comes to the government; neither the *Functioning of the Government* index show improvement from 2013 to 2020 (Appendix I4). Rather slight deterioration can be observed (from 9 to 7 out of 12) when the legislative and measurements against political corruption is concerned. It justifies the fact, that the National Assembly's entitled decisive role perceived as a semblance, where the power is concentrated into the prevailing government's hands and even defying with democratic principles for the sake of retaining supremacy.

Civil Rights and Political Liberties

Concerning the *Freedom of Expression and Belief*, the portrayal of the country is declining from 2013 until today (from 15 to 10 points out of 16) (Appendix I5). Even though the Fundamental Law of Hungary ensures the freedom of expression, turmoils recently generated from exaggerated, but indeed critical manifestations and pointing to dubious transactions by journalists led to criminal proceedings (Freedom House, 2020). Findings of the *SGI Civil Rights and Political Liberties* further underlines the country's weak performance with an evaluation of 3.7 out of 10 (Appendix I2). Besides the above mentioned, the government strongly insists on the traditional family model and rejects alternatives. Aggressive measures have been taken against the LGBTQI community even through the constitution that defines the marriage only between a man and woman, and not allowing homosexual couples to adopt children (Dunai, 2020).

Findings

As explicated above, almost each of the indices analyzed points to a deteriorating tendency, with amendments signifying long-term commitments by the government to preserve their power.

Primarily, concerning Hungary's political perception, the country is depicted as jeopardizing the democratic principles, that neither assist in its relationship with EU institutions nor discerned as it would serve the country's growth potentials. Furthermore, based on the elements connectedness in the PIE model, this notable change in the politics, which entailed alterations in the political institutions, can hurt the overall economy by pushing the country into a vicious cycle. Moreover, the amended election rules are to a great extent favour the ruling party's success, through its majority representativeness in the parliament. Thereby it constraints the opposition to gain a representative role in the legislation procedure and preserve the government's unilateral measures. Yet, even the media, as an instrumental tool, is administrated in favour of the government, by exercising its influential power through the exaggeration and misinterpretation of information.

5.2.2.2 Economic institutions

5.2.2.2.1 Quality of economic institutions

Government Effectiveness index depicts Hungary as its effectiveness has slightly worsened since 2010, referring to the credibility in the policy formulation free from political potency has fallen (Appendix I11). Moreover, the government measures modified the *Regulatory quality* resulting in a drastic drop from 2010 to 2018 (from 81.3 to 73.1). Concerning the economic policies' effectiveness and their long-term consideration, Hungary scores relatively low (4 out of 10) due to the ostensibly scarce innovative solutions and the ambiguous allocation of the EU funds to government-allies (Appendix I2) (Bertelsmann Stiftung, 2019a). The plight is further exacerbated by the fact, that a process of acquiring and overtaking foreign-owned and medium-sized Hungarian companies, -dominantly in the key strategic sectors -, by pro-governmental oligarchs is on the rise. Thus it leads to the recognition, how politics, through economic institutions can exercise their power and results in changes in economic indicators.

Besides the interpretation of economic policies and their growth-stimulating perspectives, investigation of the adopted laws and the enforceability elucidated through the *Rule of Law* indicator. It portrays discrepancies in the system from 2012 until 2016, that can be derived from the ratification of a new constitution in 2012 and the upheavals originated from the judiciary system's restructure (Appendix I11). As of property rights measured, the WEF depicts it as middling (*Property rights* 4.0 out of 7), similarly as the *Intellectual property protection* (Appendix I15) (WEF, 2019a). Moreover, delving deeper into business operations, the perceived enforcement capability of contracts depicted only a modest decline (from 73.4 to 71.0) over the period of 2014-2019 (Appendix I13) (World Bank, 2020b). As can be seen, the different studies executed in the theme of enforcing contracts and

providing protective measures point to the legislation mediocre nature, showing even a descending tendency that can harm the economic environment.

As of the corporate governance and rights of shareholders are considered, pointing to the principal-agent issue, the *Corporate governance* indicator appraised the Hungarian stance as of having a mediocre characteristic (55.7 out of 100), mainly explicated by the existence of conflicts of interest that unfolds the regulation as lacking transparency (Appendix I15). Moreover, the *Conflict of interest regulation* points to relatively weak performance (4 out of 10), further underlining the dissension between the principal and the agent's interest. Although, in the case of the *Strength of financial accounting and auditing standards* Hungary stayed at its level throughout the years, but showing no amelioration. However, slight improvement can be experienced when minority investors' protection is concerned; from 2014 to 2019 the perception and transparency of agents and actions taken has improved, but still a long way to reach notable effects (Appendix I13).

Turning to the business environment, even though, there are no such barriers set, examining the indicator from 2013 to 2019, in the past years it is detected to be lower (*Personal Autonomy and Individual Rights*: 3 out of 4), that can be traced back to the proliferation of government-allies acquiring companies, thus shrinking the opportunities of outsiders (Appendix I5). On the contrary, the process of *Starting business* did not change noticeably, keeping the policy's complexity, required administration, and capital requirements relatively smooth (88.2 percentile rank) (Appendix I13). Furthermore, from the aspect of *Registering property*, Hungary even achieved amelioration, underscored also by the WEF's *Quality of land administration* emphasizing an acceptable level in transparent information flow and solutions of land ownership disputes (Appendix I13, I15.

On the contrary, the perceived existence and role of corruption in the public as well as in the private sector is burgeoning. The CPI elaborating on the public sector's bribery shifted Hungary from its mediocre position identified in 2012 into a rather corrupt position by 2019 trough a steady annual deterioration (Appendix I14) (Transparency International, 2020). The WGI verifies the conclusion elucidating the exercise of political power for private gains and interest, materialized in the indicator's solid fall from 2010 onwards (from 68.6 to 59.6 percentile rank) (Appendix I11).

Findings

Concerning the economic institutions' overall nature, evaluations of the different fields within economic policies slightly deteriorating. Despite some of them improved, such as property rights and the registration procedure, the regulatory quality still pointing to weaknesses, which presumably originates from the impact of politics. Although a more lamentable fact is, that for approximately ten

years, almost none of the institutional aspects could achieve and undertake improvements, that could stimulate the country's current and long-term growth potentials. Furthermore, the proliferation of corruption in both the public and private sectors entails troublesome prospects; it does not just undermine the regulations set by the economic institutions but the vanishing reliance in institutions and enforcement of rights may further hinder market mechanism and entrepreneurship.

5.2.2.2.2 State regulation

Based on the EBRD's transition report, price liberalization in Hungary reached the proper level (4), but in the cases kept it privilege to regulate and keep prices limited (Appendix I6) (EBRD, 1996). As mentioned in the historical context, the progress of privatization in Hungary, entailed a long, complex procedure creating the proper conditions of institutions. As EBRD transition reports, small-scale privatization reached the level comparable to advanced economies already by 1997, whereas the voluminous privatization, even as it was hastened and undertaken by radical speed through the transition process did not achieve the advanced state measured in 2014 (Appendix I6) (EBRD, 1997). It can be traced back to the existence of state-owned firms mainly in the utilities, energy, and public transportation sector. Moreover, as explicated in the economic policies' quality, and also as Freedom House measures *economic exploitation*, there is a progress by pro-governmental oligarchs overtaking and broadening their portfolios, supported by the government's nationalistic politics (3 out of 4) (Appendix I5).

Taxation system

From the taxation system perspective, the tax administration and complexity to meet with the requirements can be burdensome, nevertheless, the tax liability of corporations play an important role in planning and operational level. By delving deeper into the procedure, *Paying taxes* is depicted as it has been improved discernibly (from 73.27 to 80.6) (Appendix I13) (World Bank, 2020b). Major contributors to the amelioration perceived through the number of *Payments*, the *Total tax and contribution rate*, which is even less than in the OECD high-income members (37.9 and 39.9% of profit) (World Bank Group, 2020b). Recently Hungary undertook radical steps restructuring the corporate income tax level; from 2017 it is reduced from 19% to 9% (KPMG, 2020). Nevertheless, it is worth noting, that even by imposing low tax rates, growth can be spurred, but as WEF pointing to the fact, government subsidies provided to pre-selected enterprises may cause a distortion of the market mechanism, in which case Hungary scored relatively in the middle, with 3.1 out of 7 (Appendix I15). The fact further underscored by the EBRD's *Competition policy* pointing to

Hungary's lagging in this field (Appendix I6). Moreover, the manifestation of a proper *market dominance* seems to be sluggish around 3 points (Appendix I15).

Labour market regulation

Delving deeper into the way defined growth elements are regulated, the labour market conditions are appraised to be overall on a moderate level, 5.6 out of 10 (Appendix I3). Even though most of the composing elements, such as *Youth Unemployment* and *Long-term Unemployment* Hungary shows proper measurements, explained by aggressive reduction in the number of unemployed through communal work of low-skilled workers, the *Labor Market Policy* ostensibly lagging compared to an EU average (4.0 and 6.6 respectively out of 10). The reason behind lies primarily in the scarcity and migration of high-skilled workers moving abroad. Concerning the regulation in remuneration, two approaches formulate the minimum level of wage; the *Minimum wage* that is required to be paid to each fully employed, while the *Guaranteed wage minimum* is be applied when the employee is at least having secondary education and working full time. The observation showed in this the latter case an annual 10% increase from 2014, but still, this minimum is under the recent average income (Appendix I21) (NAV, 2020c).

Trading

From the angle of trading, as unfolded through the historical context, since 1997 Hungary is appraised to have similar characteristics of *Trade and foreign exchange system* to advanced economies, by facing gradually out particular quotas and tariffs on product groups, supported by the initiative of EU access that further entailed the tariffs and trade restrictions to be ceased (Appendix I6) (EBRD, 1998). Concerning trade openness, by joining the EU, the country had to be compliant and apply the EU-wide trade tariffs. Nonetheless, the trade administrative procedure can be distinctly measured, for which Doing Business indicator, the *Trading across borders* asserts Hungary as it provides conditions to the greatest level (Appendix I13). However, when the *Trade openness* is considered, Hungary is evaluated to maintain rather a good level, which is composed of non-trade barriers and clearance efficiency at the border, besides the pre-defined EU-wide trade tariffs (Appendix I15) (WEF, 2019a).

FDI

As of the foreign direct investments are concerned, the OECD's *FDI Regulatory Restrictiveness Index* is taken into account; since 2010, the index depicts the restraints applied in Hungary on foreign investment is low, 0.029 out of 1.0, comparably even lower than that of the OECD average (0.065) (Appendix I16) (OECD, 2020h). The constraints mostly appear in the dimension of foreign equity restrictions (0.027). Furthermore, by delving deeper into the affected sectors, these restrictions

applied strictly in the real estate investments (0.45 out of 1), and moderately on the maritime, air, and transport sectors (0.275, 0.225, and 0.167 respectively). Although for the agriculture sector there were no restrictions reported, Hungary since its EU accession, - and even the new constitution from 2012 -, bans farmland to be acquired by foreigners (UNCTAD, 2012). Furthermore, a farmland privatization program was launched in 2015 to privatize state-owned lands, which is offered to Hungarian citizens who meet the government's special requirements. Even, if all the requirements are met, the acquired farmland cannot be resold for 20 years (UNCTAD, 2012). Moreover, as related state regulation and economic policies section, the recent tendency in the key strategic sectors is the acquisition process of pivotal companies by pro-government oligarchs, further underlined by the policy in 2018 to revise activities of utilities, financial, communication sectors for the reason of national security (UNCTAD, 2018).

5.2.2.2.3 Economic intermediation

Financial markets

Efficacy of the financial market to a great extent ascertains the activities executed by the private sector. As of the EBRD report unfold, the *Banking reform and interest rate liberalization*, altogether with the *Securities and non-bank financial institutions* achieved a developed a level by 2005 (Appendix I7) (EBRD, 2007). After the crisis, by 2015, foreign-currency-denominated mortgages were converted into Hungarian forint on a defined exchange rate, thus stabilization was on rise with initiatives to revitalize the economic performance of the country (EBRD, 2016). Despite measurements taken, the financial sector is yet lacking investor base to the corporate bond market, moreover, the state still plays a pivotal and shadowy role that needs clarification in the long run (EBRD, 2020). The *Stability* of the financial sector pointing to its slight amelioration from 2012, with overall its performance stated to be proper (91.3 out of 100) (Appendix I15). Moreover, as of the efficient lending of money concerned, there has been also a better allocation of money calculating the bank non-performing loans compared to total gross loans of 2.47%, yet there is space to improve to the category's best-performing country, Estonia with a 0,45% of its loan identified as non-performing (World Bank, 2020a).

However, as of the financing options assortment considered, Hungary is evaluated relatively low (37.6 out of 100) (Appendix I15) (WEF, 2019a). From the angle of doing business though, the indices of *Getting credit* and *Resolving insolvency* is portrayed to remain sound over the years from 2014 (75 out of 100) and even could improve respectively (from 49.78 to 55.0) thus providing the ground for economic stimulus and bailout options for enterprises (Appendix I13).

Findings

Economic institutions rather show a buoyant picture, than political ones, with some discrepancies identified in the system. The overall economic policy assortment ostensibly having slight discrepancies due to the recognized impact of political institutions as the acquisition process of key strategic sectors managed by government-allies has embarked and the administrations' efficacy suffers from the exercised political ascendancy. When it comes to the regulatory framework by the state on business procedures, there are evidently stimulative measurements entered into force, thus keeping solid or even ameliorating perception in the field of labour market, FDI, or even in the field of the tax system which has experienced noticeable alleviation regarding tax burden. Nevertheless, the sound financial system maintenance is to a great extent required and the indicators pointed still some aspects that need to be ameliorated.

5.2.2.3 Informal institutions

5.2.2.3.1 Religious distribution

Based on the recent census undertaken in 2011, followers of the Catholic tenets constitute a great part of the population (Appendix I19). Amongst the followed 22 religious beliefs in Hungary, the population's 39,0% disclosed their Catholic belief. However, it is worth noting, that 18,2% of the population is allegedly not a follower of any tenets, moreover, the religious belief of 27,2% of the population is still unfolded. Thereby, concerning the country's distribution of religiousness, as one can suggest the Catholic Church plays a pivotal role in a sizeable part of the population in Hungary. Recognizing its importance, the role of the KDNP was justified with its alliance that entered into force in 2006 (KDNP, 2006). Since then, the political fraction has a solid, unbreakable popularity, which entails close cooperation between the Church and the government's operations. One of these close cooperations is manifested in the rejection of the LGBTQI community, which is contrasted by the traditional family model and facing more and more restrictive legislations recently (Dunai, 2020).

Findings

The pivotal role of the religion is reflected in the political landscape most dominantly by the prevailing fraction of Fidesz and KDNP. This group is greatly targeted by political campaigns highlighting religious values as it can be seen from its campaigns.

5.3 Economy

5.3.1 Poland

5.3.1.1 Economic resources

5.3.1.1.1 Labour

Human capital – demographic characteristics

In 2018, the number of people living in Poland equalled over 38.41 million people, indicating a relatively big market size and immense demand potential of the big consumer base (Appendix E27). Nevertheless, since 2012 population has been slightly falling (see Graph section). A regressive pyramid of the population of Poland for 2018 with its narrow bottom indicates an aging society, with an increasing life expectancy at birth – 75.5 in 2008 vs 77.8 in 2018 (see Graph section) (Appendix E28) (*Struktura Ludności Według Wieku Od 1970 R.*, 2019).

Labour force

The country in terms of quantity of working age population, that equalled 23 269 725 in 2018, may be considered workforce-abundant (*Data by Domains*, 2020a). Nevertheless, based on Statistics Poland data, the labour force participation equalled in 2018 70.8%, similar level was confirmed by the OECD data – 70.1%, meaning that almost 30% of the working age population does not constitute the labour force and thus the workforce is not exploited at its full capacity. On one hand, since 2010 the participation rate has been steadily increasing, indicating a positive outlook, but on the other there has existed an around 8% gap of male vs female participation, with 74.5% male and 66.6% female labour force participation in 2018 (Appendix E29, E31). The former has shown a steady increasing tendency since 2010, yet the latter one showed a slight decrease from a rate of 65,9% in 2015 to 65,8% in 2016, which could have been an effect of the introduced social benefit for families, a PiS electoral promise primarily aimed at increasing the population, in reality pleasing the poorest part of the society, that came into force in April 2016 (*Rodzina 500 Plus*, n.d.). Moreover, the retirement age in Poland was decreased in 2017, as mentioned in the Political Institutions section, which further contributed to the nonetheless increasing dependency ratio (Appendix E30) (see Graph section).

5.3.1.1.2 Quality of labour

According to OECD, the share of people between 25 and 64 years old with tertiary education has been increasing steadily, equalling 30.9% in 2018, with the most popular diplomas being from Business (24.36%) and Engineering (15.82%) (Appendix E4, E5). When it comes to the quality of education, OECD's PISA recorded in 2018 high values for Poland in terms of both Reading,

Mathematics, Science (512, 516, 511). The country scored much higher than OECD average and not that far from the best performing country of EU – Estonia (Appendix E2).

By examining the World Bank's data, it can be stated that the share of governmental expenditures on education has been declining as a percentage share of GDP – in 2010 equalling 5.1%, while in 2016 – 4.6% (Appendix E6). This falling tendency together with a comparison to the best performing country in EU, Denmark, with 3 percentage points higher public spending as a percentage of GDP on education than Poland, constitutes a weak performance (World Bank, 2020c).

Nevertheless, even though Poland's human capital is relatively well-educated, at least on primary level, the skills of the current workforce has been measured by WEF as being as low as 48.5 (out of 100) in 2019 ranking the country on the 92nd place out of 141 countries. Yet, the indicator was much higher for skills of the future workforce (66.7) indicating a positive outlook (Appendix E1). For instance, having an increasing importance in productivity, the digital skills (internet user skills and advanced skills and development) among the Poland's workforce were relatively low in 2019 – 34.5, while the EU average equalled 45.4 (Appendix E7).

Labour productivity, however, according to OECD measure (GDP per hour worked), has been increasing between 2015 and 2018 (Appendix E3). In 2018, the Poland's labour productivity growth rate was higher by as much as 5.20 percentage points than the average rate of EU. The annual growth rate of number of hours worked per capita (labour utilisation) has been decreasing also significantly, and in 2018 a -0.71 decline was observed (Appendix E3). The measures can both point to higher usage of capital or higher share of high-productivity workers in employment. It can be also a result of increased quality of technology (T) or overall efficiency of using inputs (TFP).

Findings

The workforce quantity as an input and a growth element stagnates, due to the aging population with accelerating dependency ratio. However, the labour force participation has been steadily increasing, and there is a great potential of further engaging in labour more working-age society, especially women. Nevertheless, the institutional decisions concerning the reductions in retirement age regardless increasing life expectancy, together with social benefits that discourage the participation (especially female), constitute a worrying outlook. However, even though the population number is

backsliding and in the long run its potential as a growth contributor is deteriorating, it still constitutes a great consumer base and labour base in the short run and could have attracted both market and efficiency seeking investors.

When it comes to the quality of the workforce, even though the Polish system of education has had an extraordinary performance globally when it comes to quality of education offered, the labour force is still lacking high-tech and digital skills and thus it can be regarded as unattractive for investors looking for specialized labour and suppliers. However, tertiary education of the workforce is going up, and future workforce is estimated to possess internationally competitive skills. To support it, the expenditure on the education as a percentage of GDP should also go up, yet as stated in the politics part, education and highly educated groups are not of main concern for the ruling party. Nevertheless, the labour productivity amelioration points to nonetheless qualitative improvements of the workforce and contributed to the recent growth.

Regardless of growth-hindering demographic characteristics, further acceleration of the labour quality, together with engaging more working-age population, would, ceteris paribus, lead it even higher growth rates in the future. Hence, even though the efficiency opportunities may be slowly decreasing, the capability ones may be arising in the future.

5.3.1.1.3 Capital

When it comes to changes in quantitative side of the capital, it can be examined through land improvements, purchases of industry equipment and construction of building and transportation infrastructure. Gross fixed capital formation measure provided by the World Bank, that tracts these undertakings as a percentage of GDP, has shown that the fixed capital has been slightly decreasing in Poland since around 2008. While the gross fixed capital formation constituted 18.2% of GDP in 2018 in Poland, in Sweden it did almost 8 percentage point more (Appendix E8) (World Bank, 2020d). Nevertheless, fixed capital in terms of its value has been increasing in Poland and went up between 2008-2017 by 17.40% (Appendix E32).

Infrastructure

When it comes to quality of infrastructure, according to WEF, Poland scored relatively high in terms of utility infrastructure – 94.5 out of 100 in 2019 (Appendix E1). The transport infrastructure received a much lower score of 67.8, which, nonetheless, appeared to be relatively favourable as it gave Poland

the 25th rank. The tendency of infrastructure investment is, however, worrying as it has been decreasing since 2011 (Appendix E9).

Not only the digital skills of human quality are relatively low, but the ICT adoption according to WEF, such as mobile and internet subscriptions are quite low – 65.4 in 2019, which gave Poland a 51st rank out of 141 countries (Appendix E1). The Connectivity score given by DESI also indicates that Poland was lower than the EU average (43.5 vs. 51.2) in terms of the broadband infrastructure deployment and quality (DESI) (Appendix E7).

5.3.1.1.4 Technology - Quality of capital

The quality of capital can be measured in terms of the production proportion of high value-added and technology-intense sectors. In 2017, however, "Information and Communication" and "Professional, scientific and technical activities" constituted 9.7% of the gross value-added in 2017. The development over time of these sectors share in GDP for the available data between 2008-2017 is optimistic yet not as significant – as it 2008 it constituted 9.1% and in 2017 as mentioned 9.7% (Appendix E34).

Based on the available data for 2009-2016 provided by the World Bank, since 2009, there can be observed an increase of researchers and technicians employed in R&D, yet still Poland employed just a bit over half of what EU did on average in 2015 (Appendix E40). When compared to employed people in the "Information and Communication" and "Professional, scientific and technical activities" sectors, it could be indeed notice that employment in these sectors as a share of all employment has been increasing and in 2018 equalled 6.8% (Appendix P1). Moreover, the expenditure on R&D as a % of GDP has also been increasing since 2008 as its share doubled in 10 years to equal 1.2% of GDP in 2018 (Appendix E10). The WEF also tracks R&D as part of its innovation capability pillar and in 2019 gave Poland a low score of 32.2 (out of 100) in terms of R&D expenditures and 48.1 (out of 100) in terms of patent applications per million people (Appendix E1). The total number of patent family applications measured per million people has been increasing since 2017 and equalled 12.7 in 2019.

Findings

Even though in value fixed capital has been increasing, it was also lagging behind the economic growth as its share in GDP has been stagnating.

The good quality of transport, although stagnating, and worrying ICT infrastructure constitute a great obstacle for business activity as it hinders the flow of people, products and also services. It does not only contribute to high cost incurring but also to quantity and quality of competition in place. The unfavourable geography and logistics infrastructure could discourage potential investors that look for efficiency of business activity. Thus, the falling tendency of investing in infrastructure and maintenance spending does not constitute a positive outlook for the future.

There can be slight increases observed when it comes to investments in technology, and more labour force has been being employed in the high-tech sectors in the recent years, which can constitute a great economic driver in the future and attract capability seeking investors. The already visible labour productivity improvements could be not only and effect of increasing quality of labour, but also an effect of these investments in the quality of capital, as stated in the Solow-Swan model.

5.3.1.1.5 Natural resources

With territory over 322 719 km2, Poland ranks 6th in EU in terms area (Statistics Poland, 2019a). It shares borders with seven countries – Russia, Lithuania, Belarus, Ukraine, Slovakia, Czech Republic and Germany, and has access to and owning 8783 km2 of the Baltic sea. Elevations in the share of total area above between 100 and 200m equals 50.3%, and above 200m – 25.1%, with an average 173m elevation above the sea level and mountains as high as 1603 m above the sea level. The annual average temperature in Poland equalled 9.5 Celsius degrees and the climate can be regarded as temperate (Statistics Poland, 2019a). The relatively immense area of the country, with both uplands and lowlands and the seasonal climate give favourable conditions for industries such as Agriculture, Forestry and Fishing. Indeed, as mentioned in the Politics section, it is one of the most popular section in terms of employment, however not the most strategic one as it constituted 3.1% of the Poland's GDP in 2017 (Appendix E33).

Among major resources in Poland that are geologically documented and exploited are hard coal (22497 mln t), rock salt (15011 mln t), limestone and marls used for the cement and lime industry (6045 mln t), sand and gravel (5980 mln t) and crushed and block stones (5852 mln t) (Statistics Poland, 2019a). Total natural resources rents constituted only 0.96% of GDP in 2017 and since 2010 the share has been decreasing, indicating the declining important of natural resources in the economy (Appendix E14). Electricity production from oil, gas and coal sources (% of total) had been also

decreasing between 2005 and 2015, from 97.3% to 86.06%, yet still constituting a significant share, especially the electricity production from coal, as unfolded in the Politics section (Appendix E35).

P – depletion of natural resources

Natural resources depletion as a % of GNI between 2011 and 2017 had been declining and equalled 0.37 in 2017 (Appendix E14). However, worrisome is the level of CO2 emission in terms of metric tons per capita. In 2014 alone per person, 7.5 tons of CO2 emissions were produced, more than in all EU per capita (7.31t in 2014) (World Bank, 2015a).

According to Environmental Performance Index that measures countries' environmental health and ecosystem vitality, gave Poland and overall score of 64.1 (out of 100) and a rank of 50 out of 180 countries (Appendix E11). In terms of issues such as air and water quality and usage of heavy metals (environmental health), Poland performed much worse than in terms of biodiversity, forests and fisheries (ecosystem vitality).

Even though, the percentage of the population exposed to levels of atmospheric particulate matter of less than 2.5 micrometers that exceed WHO guidelines has been decreasing, its value in 2017 was nevertheless alarming – 99.97% of the population (Appendix E13).

Findings

Even though Poland is characterised by abundance of some natural resources, especially hard coal, their rent extraction is rather low, and their usage in terms of electricity is decreasing, however, still constituting an environmental problem. On one hand, the possibility of self-sufficiency in terms of electricity makes the country more independent and less vulnerable in terms of global price or availability distortions. On the other, energy consumption based on coal increases population and constitutes a political issue with the EU. Moreover, the abundance of resources and good climate and land conditions could attract investors, yet as mentioned in the Institutions section, the protection applied, especially when it comes to land ownership, may hinder these opportunities.

Presence of both lowlands and uplands may indeed hinder the level of development in infrastructure, with considerate capital needed to improve the communication especially in the mountain region. However, access to the sea may immensely facilitate international trade in cargo. Due to low ICT development, however, it may be that some regions are still barely connected, and their opportunities not yet exploited.

Even though natural resources depletion does not constitute a significant threat to the economic growth, environmental health does. The side products resulted from economic activates, such as the abovementioned CO2 emissions, not only constitute a threat to the health of human capital, but also decrease the value of nature and in turn hinder all the economic activity but especially these sectors that rely on it such as Agriculture, Forestry and Fishing.

5.3.1.1.6 Total Factor Productivity

As unfolded in the Historical Context section, the TFP was the main economic driver after 1989 that resulted in extraordinary growth rates in Poland just after 5 years of the transition. In the recent years, however, TFP was not as significant as a driver for Poland. Depicted as the annual growth rate, Total Factor Productivity provided by University of Groningen and University of California that measures the productivity combing capital (K) and labour (L) as inputs, taking into account technology (T) and quality of labour (Q), showed negative growth rate between 2012-2014, after a sharp decline in 2012 (Appendix E26). However, since 2015 the growth rate of TFP has started to accelerate, equalling 0.49% in 2015, 0.97% in 2016 and 2.91% in 2017, which resulted in significant growth rate (measured in GDP) as unfolded in the macroeconomic flows.

Since productivity increases in labour were observed between 2015 and 2018, as discussed in the quality of labour section, and in quantity of fixed capital as well as slightly in its quality, it can be carefully deducted that that capital intensity per labour increased, which resulted in the observed productivity increases and economic gains. What is more, the discussed great stability of the financial sector, as well as ameliorating process of getting credit, resolving insolvency and trading across borders, and the impressive macroeconomic stability, further discussed under macroeconomic flows, contribute to attracting investments and accumulating capital which in turn has resulted and might result in the future in better resource allocation and securing higher TFP.

5.3.1.2 Macroeconomic flows

5.3.1.2.1 Principle macroeconomic variables and stability

The last decade has been characterised by both ups and downs in terms of the GDP annual growth rate per capita yet it did not go lower than 1.5% in 2013. The growth of the economy in the last decade was recorded to be the highest in 2018 – 5.1% (Appendix E15). Undoubtedly, the high levels of growth in the last decade indicate high production and consumptions levels due to positive attitudes

and expectations of market agents, that reached its highest point in 2018. The relatively good economic standing of the country has influenced the savings levels as a percentage of GDP, that were increasing in the last decade and equalled 19.6% of country's GDP (Appendix E23). In comparison to EU, however, this is still lower by 3.7 percentage points. Moreover, there has existed a savings-investment gap – in 2008 equalling even 7 percentage points, indicating that country was investing more than it was saving, yet there has been a positive trend observed that the gap has been decreasing, being around one percentage point in 2018 (Appendix E23, E24). The state budget's deficit's changes confirm it with its decreasing value throughout the years, equalling in 2018 -13.7 billion PLN versus -44.6 billion in 2010 (Appendix E37). Net borrowing of the government as a percentage of GDP has also showed a decreasing tendency: -7.4% in 2010 versus -0.7% in 2019 (Appendix E37). Moreover, the current account, that measures the trade balance together with net income and transfers, was showing a deficit every year between 2010 and 2016, yet showed a surplus in both 2017 and 2019, in 2019 equalling even 2.8 million USD, indicating a positive saving perspective (Appendix E17).

When it comes to annual percentage price changes in the economy, the inflation target of the National Bank of Poland for the last 15 years has been 2.5% (*Polityka Pieniężna*, n.d.). Since 2010, Poland has observed increases and decreases in its inflation, yet not that far from its aim and after 2012 only beneath it (see Graph section). The low level of inflation is positive in terms of stable currency rate and its connection to attracting market seeking investors thereby increasing investments and innovation. Indeed, the exchange rate of PLN vs. EUR has been relatively stable since 2012, with no significant increases or decreases that would immensely destabilize trade and investment rates (see Graph section).

Moreover, the interest rates in Poland dropped in 2015 and since then has had the lowest possible levels (Appendix E36). The result of the decrease is visible in the inflation rate that slightly accelerated after 2016, approaching the central bank's aim.

In terms of value of the governmental debt there has been an increasing trend observed since 2010, with the level of consolidated gross debt equalling 1045.1 billion PLN in 2019 (Appendix E37). However, as a percentage of GDP it has not gone past 56%, and in 2019 actually equalled 46% of GDP, still far from the EU' limit aim of 60% (*History of the Stability and Growth Pact*, n.d.). Around half of the governmental consolidated gross debt between 2010 and 2019 was foreign, which can

constitute a slight threat with unstable exchange rates (Appendix E37). Nevertheless, as mentioned, the exchange rates have been so far balanced.

Findings

The positive economic climate since 2014 and the expansive monetary policy resulted in increasing private and public consumption and expenditures, that further accelerated the GDP resulting in extraordinary growth in 2018. The decreasing budget deficit, and the recently observed surplus of the current account may constitute a saving potential that in the future may translate into increased capital investments and, in the long run, constitute a major contributor to economic growth. However, the constant net borrowing of the government and expenditures higher than revenues throughout the years in Poland may hinder such a perspective. Moreover, the observed macroeconomic stability in terms of low inflation and low interest rates, together with stabilized and constantly weak domestic currency and balanced governmental debt create favourable conditions for savings with positive prospects for investments.

5.3.1.2.2 Foreign trade and FDI

Exports as well as imports as a share of GDP have been growing for the last 10 years and equalled 55.5% and 52.0% respectively in 2018, indicating a growing role of foreign trade in the economy (Appendix E61). The trade balance comprising net trade in both goods and services has been showing a surplus since 2012, which means a significant foreign demand for Poland's goods and services that may in turn increase the prices and strengthen the Polish currency. However, as depicted in the preceding section, both of them has been greatly stabilized and balanced.

Confirming the gravity theory of trade, after USSR, as mentioned in the historical context section, the major trade partner of Poland since 1990 has been Germany, to which in 2018 Poland exported 28.2% of its merchandise export and 24.6% of its services export, and imported 22.6% of its product imports and 22.2% of its services imports (Appendix E55) (Statistics Poland, 2019a). When it comes to sectoral distribution of trade in merchandise, machinery and transport equipment constituted the highest share of both exports and imports in Poland in 2018 (Appendix E38). Moreover, significant foreign transactions were observed in terms of manufactured goods and articles (see Graph section). Both of them point to Manufacturing being the most tradeable sector in Poland and constituting the highest value of transactions of products.

According to the National Bank of Poland, 22% of the 2018 capital inflow of 50.4 billion PLN constituted forms of equity participation and 75% came from profit reinvestments, thereby equalling to 48.9 billion PLN of total FDI inflow (Narodowy Bank Polski (National Bank of Poland), 2018). The data does not take into account Special Purpose Entities transactions, that have no influence on the country's economy.

According to OECD, the net inflows between 2014-2018 had positive values, with a slight fall in 2017, meaning that there were more inflows of foreign capital recorded than its withdrawal, which points to optimistic attitudes of investors (Appendix E18). The inflows were mainly going into Services (including Finance and insurance) and Manufacturing and indeed these are the sectors, according to OECD, with the highest stock accumulated in 2018 – 134.6 billion and 71.7 billion USD respectively (Appendix E20&E21). However, the stocks resulting from inflows between 2013 and 2018 without taking into account the preceding levels, suggest that the most popular sector in terms of inward FDI in manufacturing was manufacturing of motor vehicles, trailers, semi-trailers, other transport equipment and metal & machinery products. The second most popular economic branch pursued by FDI was actually "Wholesale and Retail Trade" (Appendix E57). Wages in both Manufacturing and Wholesale and Retail Trade sectors between 2013 and 2018, were below the Polish average (Appendix P2). In terms of Manufacturing, it makes the workers cost-competitive thereby encouraging foreign investments, especially efficiency seeking ones, to produce or assembly in Poland for export. In terms of Wholesale and Retail Trade sector, investors are attracted by the size of the Polish market and its growing demand. According to the National Bank of Poland, among the major investors in 2018 there were the Netherlands that invested around 17.5 billion PLN in Poland and Germany – 7.6 billion PLN (Appendix E58). In 2018, nevertheless, FDI inflow constituted 2.9% of the country's GDP, much less significant than export or import did (55.8% and 50.5% respectively) and there cannot be any clear increasing tendency observed as it was in terms of trade, the FDI inflows are rather steady, if not decreasing (Appendix E19). According to UNCTAD, in comparison to 2000, however, Poland in 2018 accumulated an FDI inward stock that was almost seven times higher and equalled 232 billion USD, which made up 2.29% of the entire EU stock (UNCTAD, 2019). Moreover, SEZs, discussed in the economic institutions, have shown to be an immense success in attracting foreign capital and creating job opportunities. Cumulatively, they succeeded in creating 448 thousands of jobs and accumulating 35 billion USD (UNCTAD, 2019).

The rest of the inflows into Poland in 2018 (2.9%) concerned debt financial instruments (Narodowy Bank Polski (National Bank of Poland), 2018). Around 1.4 billion PLN net flew into Poland in 2018, with the biggest investor (with 14 billion PLN invested) being the Netherlands. As established in the economic institutions, the financial sector in Poland has significantly advanced and thus these types of inflows ameliorate economies' sectors, help in better resources allocation and thus constitute a great efficiency enhancer thereby increasing the TFP.

While FDI inflows constituted on average 2.8% of GDP in Poland between 2008-2018, FDI outflows constituted barely 1.00% of the GDP (Appendix E19). The tendency of FDI outflows as a percentage of GDP is not increasing, meaning that Poland is not yet at the point to invest abroad but rather at the point of keeping the domestic currency week and attracting home the efficiency oriented FDI.

Findings

Trade's role in the Poland's economy has been growing, especially in terms of exports, due to significant and increasing foreign demand for Poland's goods and services that can be linked to economic policy of keeping the domestic currency weak. The main trade concern products which production requires unskilled and semiskilled workforce and the trade mainly happens within the EU. What is more, the inflow of capital is also directed into the Manufacturing sector, indicating the competitiveness of Poland in this sector and significant contribution of it to Poland's economy. There could be observed also a positive outlook for future investments due to observed positive attitude of investors with new equity participation and significant profit reinvestments. The stock of FDI has significantly increased over the years and in overall FDI has had positive economic consequences in terms of, inter alia, job creation. Nevertheless, the potential of FDI is not yet fully exploited, as FDI inflows contributed only in 2.9% to the economy in 2018. However, the introduced in 2018 favourable to FDI policy has an opportunity to change it.

5.3.1.2.3 Labour market

According to data provided by the World Bank, the unemployment rate in Poland has been decreasing sharply since 2013 and in 2018 reached the lowest level recorded after 1989 – 3.8%, pointing to increasing use of labour as a production input (Appendix E59). Together with the decreasing unemployment, the immense real wage growth could have been observed since 2013 indicating a decreasing international competitiveness of labour-intense sectors (Appendix E60).

Sectors with the highest percentage of employed persons in 2018 were “Manufacturing” (17.63%), “Agriculture, forestry and fishing” (14.94%) and “Wholesale and retail trade” (14.80%). These sectors represented almost half of all employed persons in 2018 (Appendix P1 from Politics). What is more, two of these sectors represent the most interesting ones also in terms of investments, suggesting their even more significant growth in the economy. In terms of “Agriculture, forestry and fishing”, as unfolded in the Economic Resources section, Poland’s geographic conditions provide favourable opportunities for exploiting natural resources and thus employment within this sector constitutes an immense part of the total employment. However, when it comes to sectoral distribution of employment after 1989, the labour market is undoubtedly shifting towards a more developed economy, with declining share of agricultural sector, increasing share of services sector and stagnating share of industry (see Graph section).

Findings

Record low unemployment and increasing real wages, together with low inflation and low interest rates have certainty contributed to the increasing living standards of the society and generated high demand on its part. Low unemployment also suggests less pressure on the government finances, which could be seen in the decreasing governmental borrowing as a share of country’s GDP. However, the low unemployment and increasing wages also have their drawbacks as they can discourage potential investors who seek cheap and abundant labour.

5.3.2 Hungary

5.3.2.1 Economic resources

5.3.2.1.1 Labour

Human capital – demographic characteristics

Based on the recent stance in 2019, the Hungarian population is approximately 9.8 million, comprising only 1.9% of the European Union's overall population (Eurostat, 2020c). From 2008 onwards, the population is declining, although from 2017 the birth and mortality rate ostensibly balancing out (see Graph section) (Appendix E41). This offsetting tendency can be traced back to a forceful initiative from the second half of 2015 when the government made the first steps towards family supportive measurements; manifested through financial aids and alleviations in credit solicitations determined by the number of children (Hungarian Government, 2016). However, the demographic pyramid of Hungary still depicts that the proportion of elders remarkably exceeds the youngster generation. The phenomenon further underlined by the fact that parallelly there is an increase in life expectancy (Appendix E28), thus creating challenges for the work-force regulation.

Labour force

Concerning the labour participation rate of the working-age population (15-64 years), in the past decade, the participation rate is increasing over the years, in 2019 reaching almost 73%, nonetheless, males' participation notably exceeds female participation rate (80.0% and 65.3 % respectively) (Appendix E43) (Hungarian Central Statistical Office, 2020a). Such a difference in the ratios can be derived from the distinct retirement age set for the genders; for men, it is set to be 64 years at least, for women, there is a special easement introduced, as after serving 40 years, it is feasible to apply for preferential pension (HR Portal, 2019). Even such measurements can not interfere with the worrisome trend of the increasing dependency ratio over the years (Appendix E42) (see Graph section). (World Bank, 2019a).

5.3.2.1.2 Quality of labour

When it comes to the qualitative characteristics of the labour-force, *Upper secondary* education level is stable comprising 60% of the people between 25-64 years-old, while there is a growing tendency in the ratio, who attained to *Tertiary* education level (recently 25.1%) (Appendix E4). Although, there is still space for improvement as compared to the OECD average of 36.9% (OECD, 2018a). More specifically, in tertiary education, the graduates are mostly distributed between the fields of *Business* (24.6%), *Education* (16.1%) and the *Engineering* (14.7%) (Appendix E5) (OECD, 2017).

Nonetheless, the WEF concluded the Hungarian current workforce's qualification mediocre by only scoring 43.5 out of 100. However, the score of future workforce foreshadows a better outlook with 69.2 points, which can be traced back to the findings that participation in tertiary educational level is growing (Appendix E1) (WEF, 2019a). Moreover, as of today, digital readiness is to a high degree impactful also for the way doing the job; the European Commission's study measured the population preparedness of being familiar with digital solutions (European Commission, 2019b). Albeit, Hungary is lagging from Finland as the best in the EU (42.1 and 77.5 out of 100), it shows an increasing tendency examined for the period 2017-2019 (Appendix E7).

Concerning the quality of the educational system, the findings of PISA survey concludes the Hungarian stance to be average good by examining pupils' capabilities in the field of *Reading*, *Mathematics* and *Science* (476,481 and 481), which is close to the OECD average but lags from the best performing Estonia (Appendix E2). Although the overall outcome does not seem to be worrisome, from 2000, the annual results show a hump-shaped trajectory pointing to the recent years' declining tendency (OECD, 2018b). Nonetheless, investment in the educational system showing erratic tendency, although from 2014 the government spending has increased again, it originate also from the new EU fund package targeting the amelioration of educational and vocational trainings (Appendix E6) (World Bank, 2020c).

Taking into consideration the growth of labour productivity, from 2016, Hungary shifts radically from the bottom to one of the best-performing countries in the EU by its recent 3.1% growth (measured in GDP per hour worked) (Appendix E3) (OECD, 2019b). Labour utilization growth, however, has diminished, pointing to a decreasing tendency in the growth in hours worked per capita, thus generally presumes amelioration either in the quality of capital or its increasing formation(OECD, 2019b)(OECD, 2019b)(OECD, 2019b).

Findings

When it comes to the quantity of labour-force, the declining and ageing population points to a worrisome future perspective. However, there is an initiative from the ruling government to support financially the citizen's in starting a family, yet it is early to draw long-term conclusions. Nonetheless, there is still some capacity left in the labour market to contribute to growth, based on the work-force participation rate.

Concerning the quality of labour, the country's educational system shows moderately good characteristics, pointing to the need for further improvement. By scrutinizing the expenditure level in education, the recent years showed increasing engagement. Even though the perception of the current workforce points to deficiencies, the outlook of the future labour foreshadows betterment also evinced by the growing ratio of people with tertiary education.

Furthermore, the ascending trend in labour productivity reveals the workforce increasing contribution to the economic growth, whilst the lessening hours worked per capita pertains to the more efficient capital usage and/or the increase in the employment of highly skilled labour.

5.3.2.1.3 Capital

The capital is investigated by World Bank's *Gross fixed capital formation* that consists of investments related to land, plant, machinery, or construction projects executed on a country level. By delving deeper into the capital formation as a proportion of the GDP; in 2018, Hungary investment counted for 25.17% of the GDP, only the Czech Republic from the region, which slightly overtook with its 25.49% of the GDP (Appendix E8) (World Bank, 2020d). Immense investment level also evinced by the amount of investment steadily increasing from 2010 onwards (Appendix E53).

Infrastructure

As being part of the fixed capital formation, infrastructure plays a vital role by providing the proper infrastructural background and alleviating the everyday business operations. Concerning the investment and the infrastructure maintenance projects from 2012, there has been a slight improvement started, with a more notable level of expenditure made particularly in 2017 and 2018 (Appendix E9). From the quality of the infrastructure perspective, both the *Transport* – and the *Utility Infrastructure* is perceived to be on a proper level (80.7 out of 100), though transport infrastructure (66.0 out of 100) demands further development mainly in the quality of roads and efficiency in transport services (Appendix E1) (WEF, 2019a). The perceived level of information and communication technology considered as well; Hungary's *ICT adoption* is on an acceptable level, meaning that it is lagging when the mobile subscription and broadband considered compared to other countries. Albeit, it has a relatively stable installed internet coverage and 76.1% of the adult population stated as internet users (Appendix E1). Concerning *Connectivity* as the broadband level of installation and quality; DESI index appraised Hungary as it is performing above the EU average

(60.4 and 59.3), not far from the most prepared nation of Denmark (66.5) (Appendix E7) (European Commission, 2019b).

5.3.2.1.4 Technology - Quality of capital

As stated in the analytical framework, engagement in research and development activities, and introducing innovative solutions entail the capital's more efficient usage. When it comes to the these sectors' share of total value-added, the contribution of the "*Information and Communication*" and the "*Professional, scientific and technical activities*" economic branches altogether are constituting firmly around 15% over the years (Appendix E45). Delving into the Hungarian R&D activities, from 2010 onwards both the number of employees and the investment level is increasing (Appendix E44). Nonetheless, discernible investment can only be observed from 2016, from when the expenditures increased by more than 50% by 2018 (Appendix E44). Despite the ascending tendency though, expenditures on R&D still form a small proportion of the total GDP as of 1.53% compared to the EU, and OECD average of 2.03% and 2.40% respectively (Appendix E10) (see Graph section) (OECD, 2019a).

Based on the WEF's *Innovation Capability* indices, Hungary's performance is characterized by a staggering state (47.4 out of 100), from which the R&D category is scored 48.6 out of 100 (Appendix E1) (WEF, 2019b). For Hungary, the perceived pulling forces are *International co-inventions* (4.51 per million population), the existence of *Scientific publications*, and the *Trademark application*s (2410.49 per million population), whereas there is space for improvement when it comes to the *Diversity of workforce* (2.6 out of 7), the *Multi-stakeholder collaboration* (3.3 out of 7), the remarkable lack of *Research institutions* (0.04 out of 100), and the perceived level of *Buyer sophistication* (2.9 out of 7). Nevertheless, if Hungary wants to keep up with the digitalization progress, its measurements have been taken in this field needs further recuperation; its *Integration of Digital Technology by businesses* identified as on a rather low-level scoring only 25.4 compared to the EU average of 41.1 (Appendix E7).

Findings

Investments as a percentage of the GDP are remarkably increasing throughout the years pointing to a strong dedication to promote growth. It is reflected in the infrastructure as the past years entailed

intense spending and maintenance projects, which stance is also supported by the indicators listed. Furthermore, expenditures on R&D has also seen a notable growth of the people employed and the amount invested. However, when it comes to its proportion of the GDP, there is still space to improve as it lags behind the EU average as it was also evinced by the WEF's indicators.

5.3.2.1.5 Natural resources

The Hungarian territory amounts to 93 030 km^2, composed of land (92 340 km^2) and water (690 km^2) (EIU, 2020c). The country is situated in the Carpathian basin in Europe, and bordered by the following countries; Austria, Slovenia, Croatia, Serbia, Romania, Ukraine, and Slovakia. It has 19 counties, from which 9 having its population over 100 000, including Budapest with a population of over 1.74 million (EIU, 2020c). The country is characterized by a continental climate, with 4 seasons, that gives opportunities for agricultural activities.

Natural resources such as bauxite, coal, natural gas, the fertile soil and arable land can be identified mainly in Hungary (CIA, 2020). One of its biggest value is the latter, comprising approximately 59% of the country. Its importance also reflected by politics as there is a strict policy introduced in 2015 for the acquisition of farmlands, that can relate to the government-allies intense acquisition and engagement in agricultural activities (Gebrekidan et al., 2019). As of the natural gas resources are considered, the Hungarian gas production currently covers 25% of the demand, whereas the gas reserves are estimated to be enough for the following 38 years (MVM, 2020). Concerning the electricity production, there is a declining tendency in the usage of oil, gas, and sources overall amount to 36.56%, while on the contrary, the production from renewable and nuclear sources are ascending firmly (9.8% and 52.2%) (World Bank, 2014a) (World Bank, 2014b) (World Bank, 2014c). Concerning the nuclear power, from 2010 onwards its utilization has perceivably soared starting from 42.2% up till 52.2 in 5 years (Appendix E54). The firm shift toward this type of electricity supply can be traced back to the 2009's parliamentary decision about the construction of a new nuclear power plant will be executed by Russian Rosatom (Dunai, 2019).

Depletion of natural resources

The natural resources depletion is depicted as declining in Hungary for the examined period of 2010-2017, counting for 0.18% of the GNI recently (World Bank, 2018). Moreover, Hungary could reduce the CO_2 emissions over the years down to 4.26 metric tons per capita, less than the EU average of

7.30 (World Bank, 2015a). When it comes to the *Environmental Performance Index*, the country only scores 65.01 out of 100, which is composed of a weaker *Environmental health* level (57.67 out of 100) on worrisome quality of air, water and heavy metals, and an acceptable *Ecosystem vitality* level (69.9 out of 100) (Appendix E11).

Findings

Even though Hungary may not be enriched with abundant natural resources, its proportion of arable land is still notable and play a pivotal role in politics as well. Moreover, it is worth to mention that the country is firmly phasing out the usage of fossil fuels, although basing more than half of the total electricity production on nuclear power can make the country's electricity supply vulnerable. Nevertheless, the new nuclear power plant construction by the Russian state-owned company entails Hungary's dependency and relationship with the Russian counterpart.

Concerning the depletion level, Hungary could reach a significant reduction when it comes to CO_2 emissions. However, as the EPI suggests, the environmental health level is far from proper, thus further measures required.

5.3.2.1.6 Total Factor Productivity

Scrutinizing the overall outcome of the pre-defined growth determinants, the annual growth of the TFP in concerned (University of Groningen and University of California, 2019). The level of TFP growth is elaborated by measuring the quantity of capital (K), labour (L) and the qualitative part of labour (Q) through the years of educational enrollment. When it comes to the combination of the before explicated determinants, Hungary portrays erratic tendency (Appendix E26). Despite the slight improvement in the years of 2010-2011, there was a notable drop in 2012 (-1.72%) which was followed stagnating years. Although from 2016, it started climbing up to 1.91%, that is presumably correlated with the more intense engagement in the R&D sector.

Referring back to the labour productivity and utilization, and its improvement through the years, with perceptible amelioration from 2016, the root cause of the increase can be deduced. As unfolded in the previous sections, there was both an immense increase in the formation of capital, and in the R&D

activities. Thereby, the perceived growth of labour productivity originates from the increased capital usage per labour. Although it is worth to mention, to maintain the productivity rate growing, a stable environment is required that will be elaborated in the next part.

5.3.2.2 *Macroeconomic flows*

5.3.2.2.1 *Principle macroeconomic variables and stability*

The economic performance of Hungary scrutinized from 2010, is depicted as followed an erratic path after the crisis and soared when the last two years are considered. When delving deeper into its regional counterparts and the EU level, one can confidently state as Hungary is one of the best-performing countries within the EU with its recent 5.3% growth per capita in 2018 (Appendix E15) (World Bank, 2019b). The recent high level of growth's spillover effect also depicted when the savings level as a percentage of GDP is considered (26,6% as of 2018) (Appendix E23). From 2012 onwards, Hungary continuously achieving a higher savings level than the EU average. However, when it comes to the relation of the savings-investment level, the country during the last decade saved more, although the gap was shrinking an even turned to negative in 2018 (-0.3% points) (Appendix E23, E24). The general government's expenditure exceeding its revenue during the last decade further justifies the vanishing tendency in savings (Appendix E47). Also, the current account balance points to a diminishing surplus over the years, resulting in a deficit of 1 287 million USD by 2019 (Appendix E17).

Concerning the level of inflation, Hungary maintains its target inflation oscillating around 3% (see Graph section). However, the economic growth entailed more intensive consumption in the domestic market confirms the recent price level change as of 4,53%, slightly exceeding the MNB's inflation zone of 3% +/-1% (Central Bank of Hungary, n.d.). Notwithstanding, when it comes to the exchange rate of HUF vs. EUR, there is only a slight devaluation tendency of the Hungarian forint, which can be explained by the loose monetary policy (see Graph section).

Moreover, the interest rates applied has reached and remained constantly low from 2016, serving as an explanation to both for the economic stimulus by "cheap" financing options provided and the increase in the inflation rate dating back to 2016 (Appendix E46).

Nonetheless, measurements were taken for offsetting the level of indebtedness, which is getting investigated through the general government's accumulated debt; as of the debt-to-GDP is concerned,

from 2010 the ratio oscillated around 78% until 2015, that could be alleviated to 66.3 % by 2019 (Appendix E47). Moreover, there is an aggressive initiative from the side of the government to lessen the country's dependence on external financial sources. In 2018, the foreign debt was lowered to 58% of the GDP, although it still covers a notable part (Central Bank of Hungary, 2019).

Findings

The ascending growth of the foreshadows prosperous outlook for the country, although it needs to be mentioned, as the stability indicators reflect a shrinking tendency in the savings level. The loose, unorthodox monetary policy in Hungary ostensibly simulates the economic growth perspectives through "cheap" financing options, although it can entail the Hungarian forint's high inflation, that - if not noticeably -, but lasting devaluation of the forint could be recognized over the last decade examined. As the government's indebtedness is concerned, there is a pure commitment to reorganize the debt structure and alleviate its dependency on foreign financial recourses.

5.3.2.2.2 Foreign trade and FDI

Concerning foreign trade, it undisputedly contributes to the economic wealth by more than 160% of the GDP (Appendix E48) (World Bank, 2020f). Thereby, as one can suggest the economic prosperity is strongly characterized and dependent upon its trade activities. It comprised of intense trading in both the import (80.6%) and export activities (84.9% of the GDP) (OECD, 2020j). Nonetheless, the import of trade in goods exceeds the export value, the trade in services could grow over the years by a positive net trade of 8 954 USD.

When Hungary's most prominent trading partners are considered, the European countries encompass the country's main import and export markets by 82.2% and 89.9% respectively (Appendix E49), while the Asian region is rather significant of its import activities (14.86%) and America on the contrary, even though there is no such intense trading, but the relationship is more export than import driven (4.23% and 2.54%). From the aspect of *export* activities (Appendix E49), the country is to a great extent dependent on the German economy's (27.70%) order intakes, nonetheless exporting to the neighboring countries like Slovakia (5.18%), Romania (5,06%), Austria (4,59%) and other V4 countries like Poland (4,27%) and the Czech Republic (4,24%) are inevitable. In the light of the *importing* network (Appendix HE9), Germany (25.27%) is leading the list, whilst China (6.13%) is also perceived as a key supplier. Moreover, other European countries such as Austria (6.11%) and Poland (5.76%), are undoubtedly part of the circulation. Nonetheless, it worth to mention, that trading

with Russia (imports 3.8%, export 1.7%) also plays a pivotal role in the Hungarian economy, through importing natural gas and reinforced political relations.

Undoubtedly, the Hungarian export activities are led by the manufacturing sector (Appendix E50), out of which the manufacturing of *motor vehicles, trailers, and semi-trailers,* and *computer, electronic and optical products* are the determinant units amongst other pivotal production of plastic, metal, and electrical equipments. This verifies the fact of the manufacturing sector's notable proportion of value-added as unfolded in the section about the capital (Appendix HE+X).

Based on the recent data from 2018, the FDI inflow for Hungary amounted to 8 387 million USD, which forms the 2.40% of the total inflow of the European Union that year (OECD, 2020i). During the scrutinized period though, the country could not realize immense yield of inward FDI (Appendix E18). The past years rather indicated the drastic changes with sudden dive and raise in the foreign investments, that can be traced to Hungary's relatively small economy and the relative size of foreign direct investment. More accurately, the fluctuation is attributed to the abrupt drop in the manufacturing sector, more precisely from the manufacturing of metal and machinery products (Appendix E20), when 13 887 million USD was withdrawn from the country in 2015, comprised of such enterprises as a German DIY chain or the French energy provider (Jenei, 2015) (HVG, 2016) (OECD, 2020i). Nonetheless, the subsequent year was also characterized by the reallocation of tremendous amounts. Whilst into the manufacturing sector, 16 533 million USD was injected, on the contrary, from the services sector – compiled mainly of the activities of financial and insurance companies and administrative, supporting services -, 22 150 million USD was taken out by the foreign investors, that can be traced back to the ING Group's partial withdrawal from the NN insurance company (Portfolio, 2015) (Appendix E20).

As of the inward FDI stock sectoral distribution is considered, currently, the biggest portion of foreign capital is comprised of investment in the services (51.75%) and manufacturing (39.37%) sectors (Appendix E21) (OECD, 2020i). The most vital players of Hungary's inward FDI are the OECD countries covering 84.22% of the total FDI, from which Germany is the most prominent one (25.36%) with its deep engagement in the manufacturing sector, albeit the United States (14.52%) is also in a dominant position in the services and manufacturing sectors. Besides, investments from Austria (8.82%), France (5.48%), Italy (4.15%), United Kingdom (4.05%), Japan (3.43%), Netherlands (2.90%), India (2.86%) and China (2.13%) altogether encompass a significant proportion of the inbound FDI (33.82% altogether) (OECD, 2020i).

In terms of the inbound FDI contribution to the country's economic performance though, the nationalistic view and policies introduced reflected in drastic drop as % of GDP (-41.5% on 2018). While a similar tendency is depicted in the outflowing FDI by withdrawing investments abroad to a great extent (-43.5% in 2018) (Appendix E19).

Findings

Ostensibly, trading activities in Hungary to a great extent contribute to the economy's performance. Nevertheless, the services sector's importance is ascending, but dependency on the goods market provoking the diminish of the positive trade balance. Moreover, it is worth mentioning, that the Hungarian trade, both the export and import activities strongly relies on Germany and the manufacturing sector, which makes the country vulnerable upon any unanticipated incidence.

Despite the previous years' inward FDI withdrawal from the country, the amount of inbound FDI could increase over the years, thus ostensibly contributing to the growth of capital (K) and the creation of workplaces (L). As its positive spillover effects unfolded in the analytical framework, the immense amount invested in the services (including finance and insurance) and the manufacturing sector presumably entailed the more efficient usage of capital (T) (e.g in manufacturing and the need for high-skilled labour force (Q) (e.g in services). Nonetheless, the forceful campaign of the nationalist approach by the government may hinder prospects of inward FDI as well as threatens the stance of the current stock.

5.3.2.2.3 Labour market

After the crisis, a notable and solid improvement has been achieved in reducing the unemployment. Nonetheless, as mentioned before, also public workers are accounted for, but the results are undoubtedly prosperous (Appendix E59). As one can suggest, one a regional level there is still space for improvement, which is currently targeted by the Rural Development Program funded by EU funds (see in the *Surrounding World*) to flatten out the inequalities country-wide. Based on recent data, the overall unemployment rate is 3.4%, from which the Western Transdanubian region having the least of unemployed of 1.8%, which can be explained by the impact of the West and closeness to the borders. On the contrary, in the Northern Great Plain region, the unemployment rate is still noticeable by 6.3%, which fact can be attributed to the Eastern part's underdeveloped nature (see further in the *Surrounding World*) (Hungarian Central Statistical Office, 2020h).

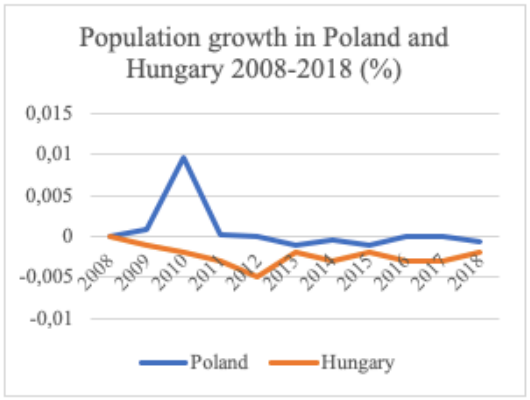
Looking into the sectoral distribution from 2000 slight changes can be recognized in the tendency between employment in agriculture, industry, and services (Appendix E25). However, from 2014 the industrial employment is increasing to the detriment of employment in service. The phenomenon can be also observed through the more accurate employment figures in manufacturing showed an increasing tendency, recently comprises 22.4% of the total employment, while the Wholesale and retail trade sector covers 12.3% (Appendix P16) (Hungarian Central Statistical Office, 2020m). Concerning agriculture though, it is portraying stagnation (recently 4.8%), which can be traced back to the political measures taken for the sake of "protecting" the farmlands from the ownership of foreign investors.

Besides the amelioration of unemployment, also the sound growth of the real wage has been realized from 2012 (see Graph section) (Appendix E52). Both in net and gross terms it could ascend, which can be traced back also to the reduction of the personal income tax from 2011 and also from 2016 (NAV, 2020b). Nonetheless, a slight decrease can be realized from 2017 originating from the increase in inflation (see Graph section).

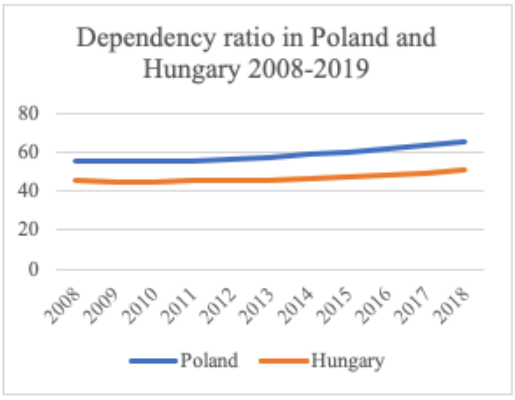
Findings

Altogether the remarkably low level of unemployment and the increasing real wage depict the labor market's prosperity. Also, balancing out the uneven employment on a regional level could strengthen the household's wealth and further promote domestic demand as seen in the macroeconomic stability section. Nonetheless, the rather stagnating tendency in the distribution of employment in agriculture, industry, and service may signal the country's dependency mainly on manufacturing and can not step further to the services sector. However, as it will be unfolded in the Surrounding World section, EU funds targeting to a great extent to both flatten out inequalities on a regional level and contribute to improvements in the labour market.

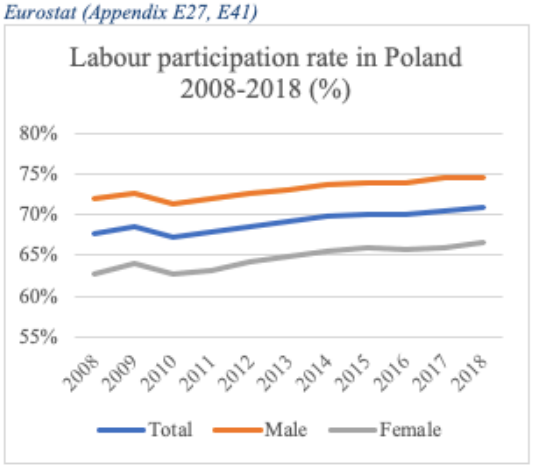
5.3.3 Graphs for Poland and Hunagry



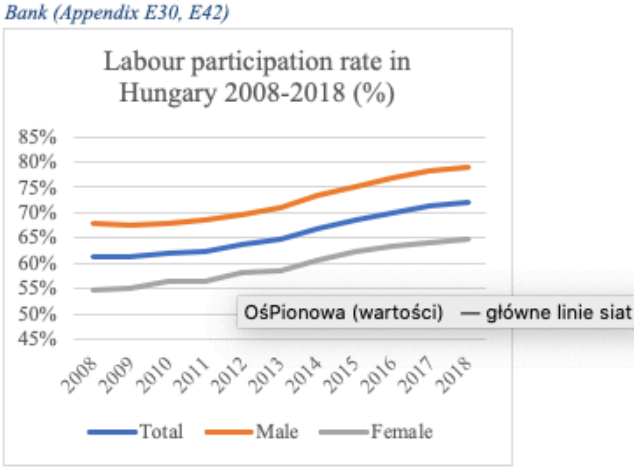
6. Figure: Population growth in Poland and Hungary 2008-2018 (%), based on data from national statistics and Eurostat (Appendix E27, E41)



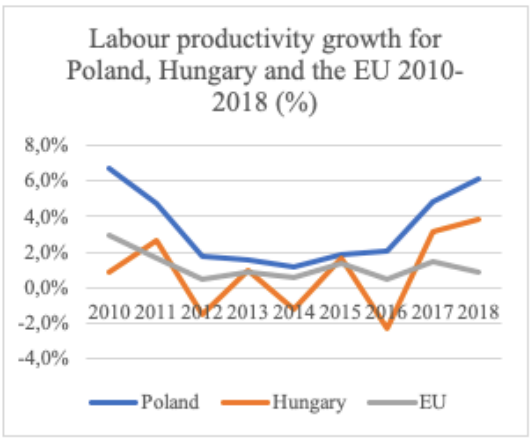
5. Figure: Dependency ratio in Poland and Hungary 2008-2019, based on data from national statistics and World Bank (Appendix E30, E42)



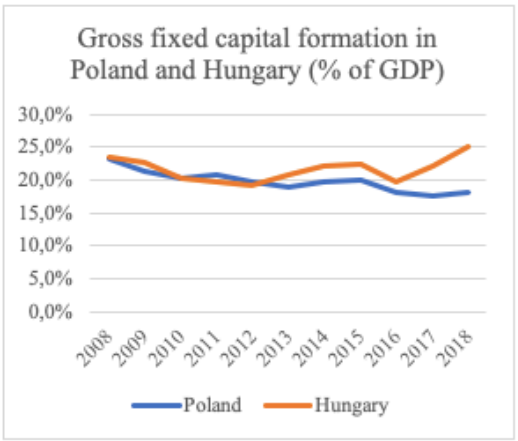
4. Figure: Labour participation rate in Poland 2008-2018 (%), based on data from national statistics (Appendix E31)



3. Figure: Labour participation rate in Hungary 2008-2018 (%), based on data from national statistics (Appendix E43)

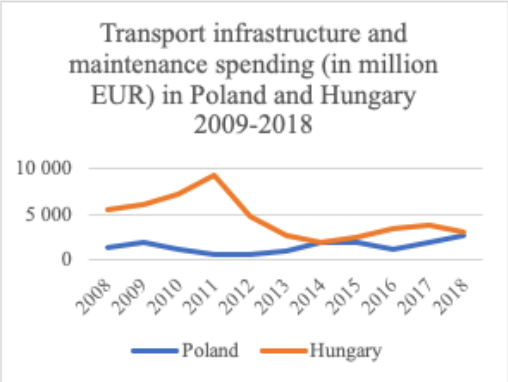


2. Figure: Labour productivity growth for Poland, Hungary and the EU 2010-2018 (%), based on data from OECD (Appendix E3)



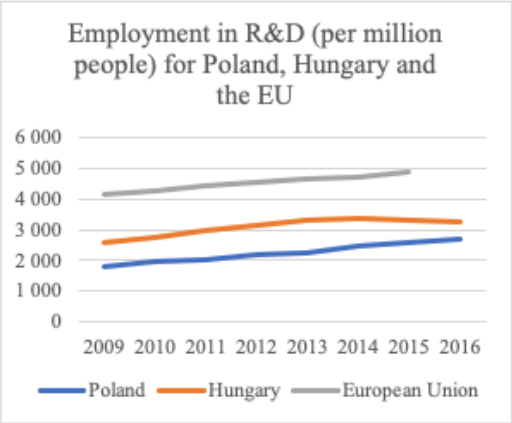
1. Figure: Gross fixed capital formation in Poland and Hungary (% of GDP), based on data from World Bank (Appendix E8)

1

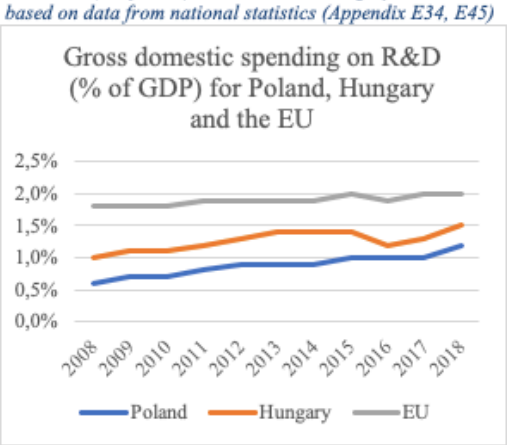


11. Figure: Transport infrastructure and maintenance spending (in million EUR) in Poland and Hungary 2009-2018, based on data from OECD (Appendix E9)

12. Figure: Gross value added of sectors "Information and communication" and "Professional, scientific and technical activities" (% of GDP) in Poland and Hungary 2010-2017, based on data from national statistics (Appendix E34, E45)



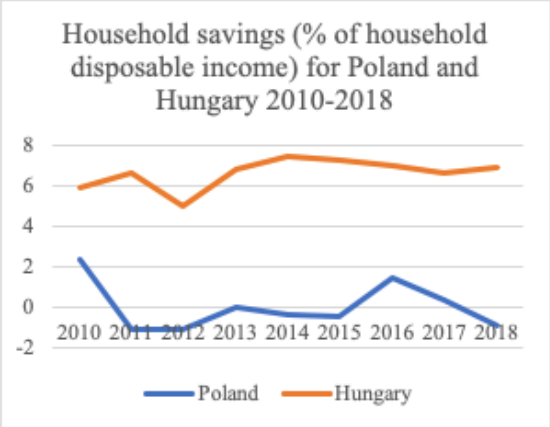
10. Figure: Employment in R&D (per million people) for Poland, Hungary and the EU, based on World Bank data (Appendix E40)



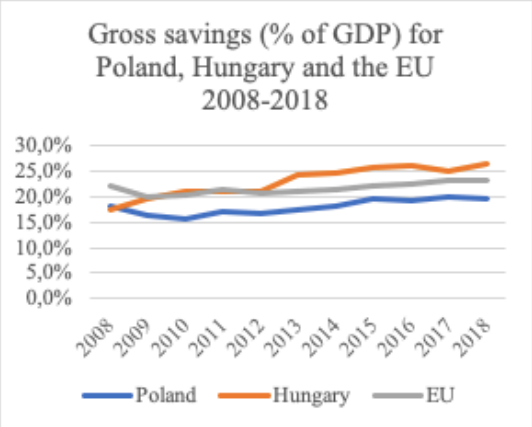
9. Figure: Gross domestic spending on R&D (% of GDP) for Poland, Hungary and the EU, based on OECD data (Appendix E10)

7. Figure: Total Factor Productivity (% growth) for Poland and Hungary 2009-2017, based on data from the University of Groningen and University of California (Appendix E26)

8. Figure: GDP per capita growth (%) in Poland and Hungary 2010-2018, based on World Bank data (Appendix E15)

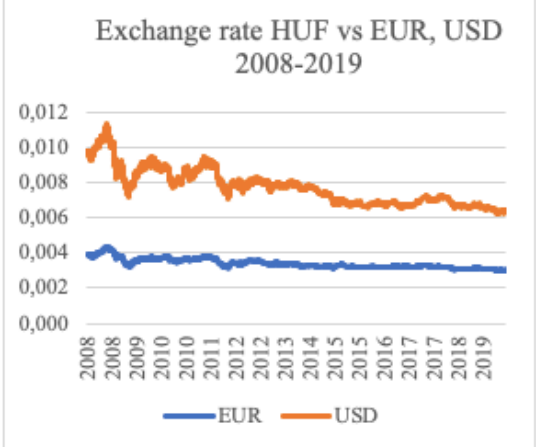


14. Figure: Household savings (% of household disposable income) for Poland and Hungary 2010-2018, based on data from OECD (Appendix E22)

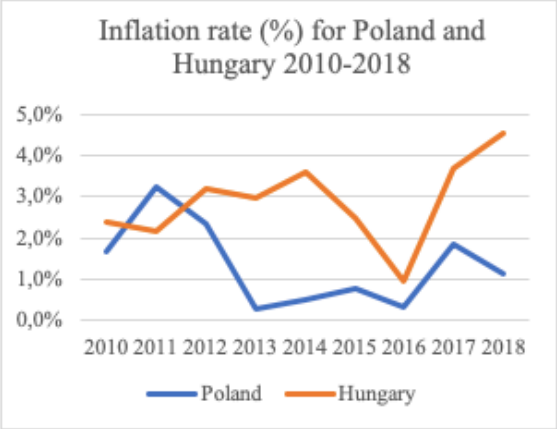


13. Figure: Household savings (% of household disposable income) for Poland and Hungary 2010-2018, based on data from World Bank (Appendix E23)

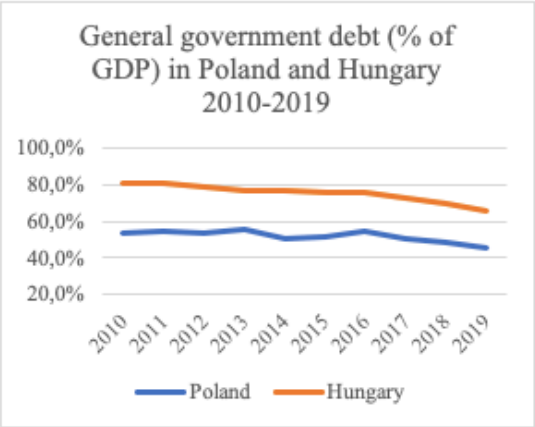
16. Figure: Exchange rate of PLN vs EUR, USD 2008-2019, based on data from National Bank of Poland: https://www.nbp.pl/home.aspx?f=/kursy/arch_a.html



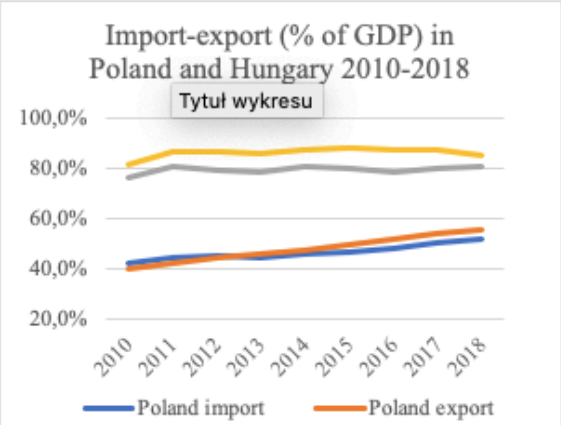
15. Figure: Exchange rate of EUR vs EUR, USD 2008-2019, based on data from Central Bank of Hungary: https://www.mnb.hu/arfolyam-lekerdezes



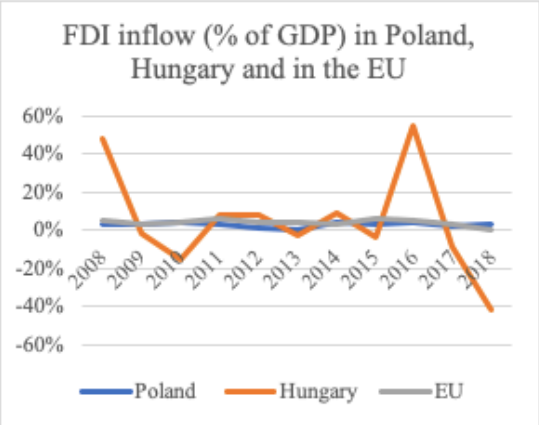
18. Figure: Inflation rate (%) for Poland and Hungary 2010-2018, based on the from World Bank (Appendix E16)



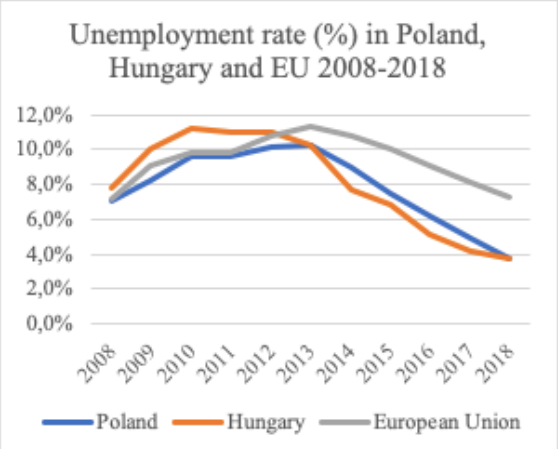
17. Figure: General government debt (% of GDP) in Poland and Hungary 2010-2019, based on data from national sources and Eurostat (Appendix E37, E47)



22. Figure: Import-export (% of GDP) in Poland and Hungary 2010-2018, based on data from OECD (Appendix E61)

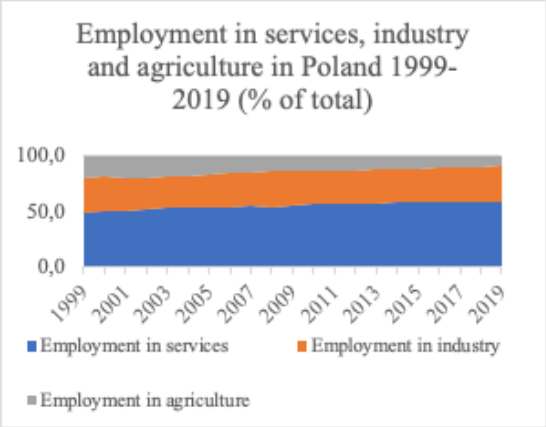


21. Figure: FDI inflow (% of GDP) in Poland, Hungary and in the EU, based on data from World Bank (Appendix E19)

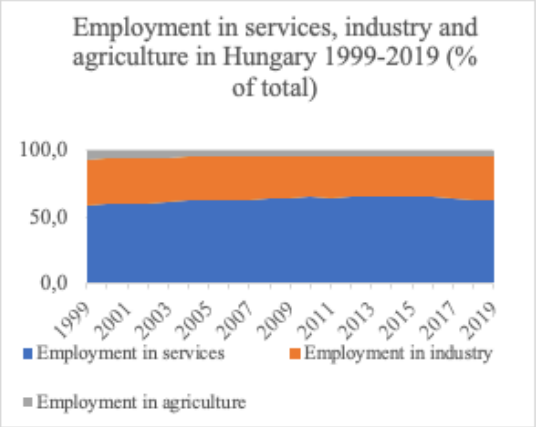


19. Figure: Unemployment rate (%) in Poland, Hungary and EU 2008-2018, based on data from World Bank (Appendix E59)

20. Figure: Real wage growth (%) in Poland and Hungary 2009-2019, based on national statistics (Appendix E52, E60)



23. Figure: Employment in services, industry and agriculture in Poland 1999-2019 (% of total), based on data from World Bank (Appendix E25)



24. Figure: Employment in services, industry and agriculture in Hungary 1999-2019 (% of total), based on data from World Bank (Appendix E25)

5.4 Surrounding world

Having noticed the significant reliance of both Poland and Hungary's markets on international economic relationship, it is imperative to look at the recent development and economic climate of the surrounding world as well as their stance toward economic integration.

The GDP growth rate shows slightly different tendencies for the World and the EU. When it comes to the World, it did not recover to the pre-crisis growth rate levels (Fig). Since 2010, the world economy has entered a sluggish state, that hinders global demand and thus can have a negative effect on international transactions. This can result in lower interests in foreign investments and trade and affect economies that highly rely on it – such as Poland and Hungary's economic performance dependent upon their exports. The positive tendency, however, is observed for the EU, that even surpassed its 2007

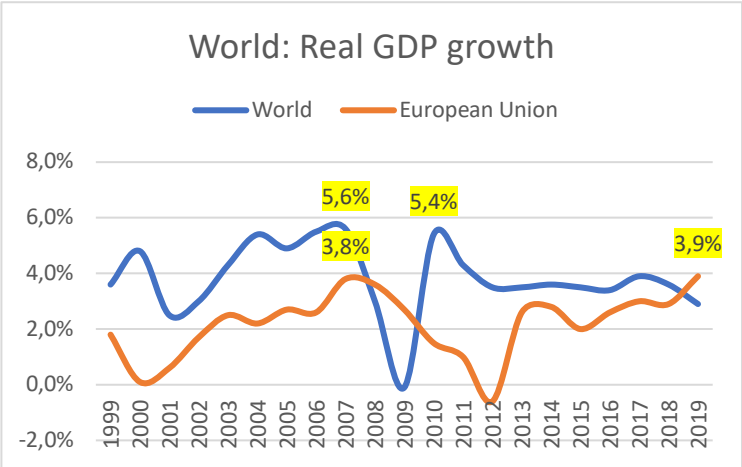


Figure 10Real GDP growth in European Union and World 1999-2019, annual percent change, Source: Author, based on IMF data, accessed on 8th May 2020 https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD?year=2020

growth rate levels. It would, ceteris paribus, constitute a good economic outlook and thus favorable conditions for international activity of Poland and Hungary within the EU.

After the economic crisis, the global trade importance in GDP has been slightly decreasing, yet in the EU it has been playing a more significant role and there is rather a positive tendency observed (Fig). The ratio can be interpreted as a level of openness to international economic activities, and it can be observed that instead of a further opening up, as it was observed until the economic crisis, the world is, if not closing, stagnating in regard to trade, which means fewer technology transfers and innovation and fewer opportunities for other trade gains and thus negative impact on further global growth. The economic openness of countries plays a vital role in, inter alia, technology transfers and innovation which in turn can be leveraged for economic gains. However, the current account balance measured as a percentage of GDP suggests that the total value of exports and imports of goods and services, payments of income and current transfers between resident and non-residents have been playing an increasing role in EU's economies since 2008 (Fig,). It means that even though within the EU the trade tendency constitutes a positive outlook for Poland and Hungary, the EU is also endangered by the world stagnating climate and decreasing trade openness.

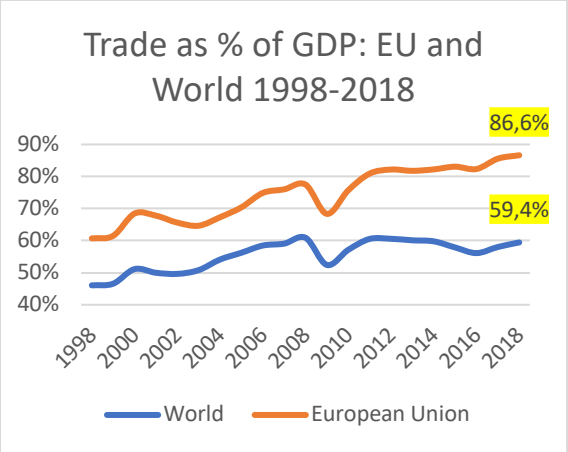


Figure 12Trade as % of GDP in EU and World between 1998-2018, Source: Author, based on World Bank data, accessed on 8th May 2020 https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS

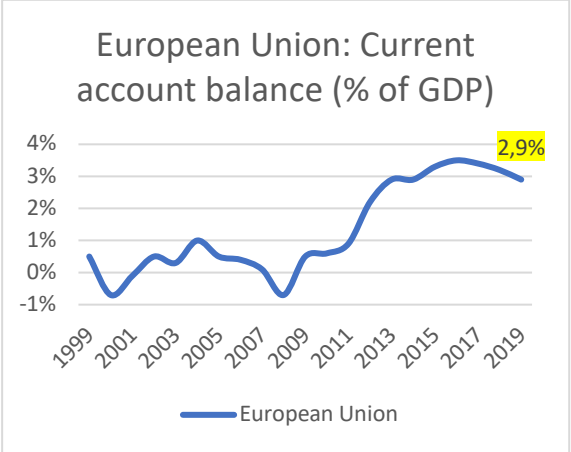


Figure 11Current account balance as % of GDP 1999-2019, Source: Author, based on IMF data, accessed on 8th May 2020 https://www.imf.org/external/datamapper/BCA_NGDPD@WEO/OEMDC/ADVEC/WEOWORLD?year=2020

The new wave of globalization brings significant challenges to further integration as anti-globalization movements have become more frequent. Increasing protectionism (in other forms than simple tariffs), trade wars (especially US-China) and withdrawals from economic unions (such as Brexit) constitute an immense threat for future growth of productivity in the world (Vanham, 2019).

The economic openness of countries plays a vital role as trade and foreign investment activities can be leveraged for economic gains. However, the current economic climate of the world, slugging global demand and decreasing trade openness constitute a threat not only to Poland and Hungary, but to the entire European Union, which together highly depends on the surrounding world's economic performance and political attitudes towards (dis)integration.

European Union

European Union's overall economic condition is significant for the analysed countries, as not only trade and FDI play a vital role in economic development but also its monetary contribution allow for growth-enhancing undertakings. Nevertheless, in order to benefit for such opportunities, good political relationship with the EU should be ensured. Membership in international organizations not only entails privileges or benefits to be enjoyed but also various rules to be followed and penalties that could be imposed thereby exerting direct influence on economic and political institutions, which in turn affect the politics and economics climate of the country. Hence, the current relationship with the most significant international organization for Poland and Hungary – EU– is now scrutinized separately for the two countries.

5.4.1 Poland

Poland is a member country of various international organizations, such as NATO, WTO, OECD and Council of Europe and one of the funding countries of United Nations, Council of the Baltic Sea States and Visegrád Group (*Polska w Organizacjach Międzynarodowych*, 2020). However, the biggest role in its economic and political development since 2004 has played the European Union (*Poland in the EU*, 2020)**.**

5.4.1.1 European Union Membership

5.4.1.1.1 Political relationship

After 2015, Poland's dynamism of political processes has dramatically changed the relationship of the country with EU, where, as said in the *P* section of the paper, PiS has started to rule almost incontestably and has been pursuing a more nationalistic policy based on sovereignty rather than deepening integration within the European Union ("Country Report Poland," 2020).

Poland's rule of law breaches regarding the independence of national court system, as discussed in *I* section, has drawn the European Commission's attention already in 2016, that claimed incompliance with Article 7 of the EU Treaty. Since then, the situation has been tense, with Poland rejecting and not applying to EU recommendations. However, for the sanctions to be imposed, unanimous support of the EU is required, yet Poland has been secured by a potential veto from the part of Hungary, resulting in a deadlock ("Country Report Poland," 2020).

If EU resorted to applying sanctions, Poland's politics and the economy would be significantly affected. In term of the former – *P*, it could increase the popularity of the ruling party and affect the results of upcoming elections of May 2020, and, what is more, it could further Eurosceptic movements among social groups. Moreover, the voting rights of Poland in the EU could be limited that would lead to underrepresentation of Poland's interests in the region. In terms of the latter – *E*, inflows of EU funds could be notably halted, upon which certain sectors, significantly rely. Furthermore, access to the EU market could be limited, resulting in restricted movement of goods, services and trade (Nagórski, 2020). It would mean fewer trading activities due to increasing costs and withdrawal of foreign capital, sabotaging trade and FDI gains for the country. However, the sanctions could positively influence the quality of institutions by, perhaps, forcing PiS to reconsider the actions of its power game.

5.4.1.1.2 Economic relationship

Trade

Since 1st of May 2004, Poland has enjoyed benefits resulting from the economic cooperation of the single market, the biggest trade block in the world (*Poland in the EU*, 2020)**.** Between 2010-2018 the import from European Union countries constituted on average 62.1% of all Polish imports of goods and services' value. The export to EU constituted even more of all Polish exports – 77.5% (Appendix S3). For the period analysed the percentage share has been stable, which means that the country's trade for at least the last eight years has been highly dependent on the EU's single market.

European funds

Poland received almost 110 billion Euro net between 2004 and 2019 that has been used for unleashing the economic potential of the country (*Fundusze Europejskie w Polsce*, 2019). 36% of the funds (211.6 bln PLN) has been allocated into infrastructure development, increasing both the volume and value of capital – K and T. 19% (109.9 bln PLN) has been used for human capital development thereby enhancing the quality of labour (Q). 17% of the sum (98.4 bln PLN) has gone into R&D, innovation and entrepreneurship activities that have a potential of further enhancing the quality of capital and efficiency of input usage. Just for the period 2014-2020 Poland received 82.5 billion Euro (not excluding contributions) (*Fundusze Europejskie w Polsce*, 2016). The programme in which the highest share of the money has been allocated into the Infrastructure and Environment Programme (focused on infrastructure), into the Smart Growth Operational Programme (focused on R&D and innovation) and into Operational Programme Knowledge Education Development (focused on education and employment). Overall, the economic funds have played a vital role and enabled Poland to increase its economic capacity thereby accelerating its economic development. Moreover, the funds pay particular attention to scaling down regional inequality that would ensure the sustainability of the growth.

Findings

Due to deteriorating quality of institutions in Poland resulting from political actions, the relationship with the EU has been tense, which creates a lot of uncertainty as it comes to the future of Poland's membership in the organization. In terms of country's politics, the EU contributes to reducing inequality which ensures the sustainability of economic growth. When it comes to the economy, Poland's development significantly relies upon the EU contributions and its single market benefits concerning the movement of goods, services and capital. In terms of its institutions, the quality is, at least potentially, controlled, and as mentioned in the Analytical Framework, high quality of

institutions constitutes a foundation for both politics and the economy. Therefore, the unstable Poland-EU situation creates a blurry image of Poland's further economic growth.

5.4.1.2 Competitiveness

Throughout 2010-2019, Poland has been climbing and falling between 36th and 43rd rank in terms of its competitiveness, measured by the WEF (Appendix S1). After the change in methodology in 2018, Poland has secured the 37th place (out of 140) in the ranking of the most competitive countries. It achieved relatively extraordinary performance in terms of macroeconomic stability (1st rank) and market size (22nd rank) and good performance in terms of infrastructure (25th rank). Nevertheless, the country has not shown competitive characteristics especially in terms of the labour market, institutions and business dynamism (Appendix S2).

Findings

After 30 years of actual economic development, Poland made it to the 37th position in the world. When compared to findings of this paper's analysis, the macroeconomic stability and the market size are indeed identified as superior. Nevertheless, even though Poland ranks relatively high in terms of infrastructure, its quality still requires amelioration, especially when it comes to ICT. The labour market flexibility and labour motivation, first and foremost when it comes to wages, and business dynamism (easiness of doing business and entrepreneurial culture) are indeed getting better, yet there is still a lot to be done in these matters for Poland to further climb the Competitiveness ladder and thus become more internationally attractive, especially in terms of FDI.

5.4.2 Hungary

Hungary is a member of several international organizations among others like WTO, in which Hungary is a founding member, United Nations, OECD, Council of Europe, and member of the V4 countries collaboration (Hungarian Government, 2020c). As being a member of the European Union implies the most remarkable impact on the country, scrutiny of their relationship is being unfolded subsequently.

5.4.2.1 European Union membership

5.4.2.1.1 Political and institutional relationship

As of the EU enlargement in 2004, Hungary joined the European Union, which has opened the way towards the country's development and catching up progress (Europa.eu, 2020). However, for the time being, relationship and conformity with the European Union's principles turned out to be imperfect. From the beginning of the current Hungarian ruling party's first term, from 2010, the

frequency and the number of disagreement has proliferated. The focal point of confrontations stems from the Hungarian government's intention to strengthen and concentrate its power, which is by far contradictory with the EU rules (EIU, 2020a). Neither the mentioned 2012's renewal of the constitution helped on the country's perception; the appointment of pro-governmental personnel in the central bank and Supreme Court attracted the ire of the EU bodies (EIU, 2014a). Due to the country's opening strategy set with the Russian counterpart, while the EU introduced sanctions based on the annexation of Crimea, provoked further disapprovals (EIU, 2014b). Another confrontation between the two parties originated from the handling of migration has further deepened dissents, and has led to political campaigns in Hungary of criticizing and resisting to the "will of the European Union". Even, a referendum was organized by the government in the question to prepare amendments in the legislation (Freedom House, 2019). Ostensibly, the "migration crisis" served to build a campaign for the 2018's political elections, which can be evinced by a poll undertook before the elections pointing 52% of the interviewed as threatened by migrants (Századvég, 2018). The issue's political exploitation, measurements taken against the CEU, and impede of NGOs' operations provoked proceedings against Hungary by the European Council under Article 7 of the Treaty European Union as breaching the EU's fundamental law (EIU, 2019). As a matter of fact, a sanction would ignite negative effects, as it would not just threaten the country's representativeness in the European Parliament, but can entail obstructs in trading, making Hungary's economy vulnerable due to its strong dependence within EU-trade. For this reason, the government suspended and later even rejected the introduction of the new administrative court system that would undermine the judiciary system's ascendancy as unfolded in the section of political institutions (EIU, 2019).

5.4.2.1.2 Economic relationship

As of the trading activities are considered, the EU serves the Hungarian GDP's 54.2% in goods and 11.6% of services (European Commission, 2019c). Moreover, as explicated in the section of macroeconomic flows, the country's export and import activities are concentrated on the European Union's member countries, counting for 70.53% of the import and 74.72% of the total export (Appendix E49). Despite the contradictory views, the development fund provided by the European Union to a great extent contributes to Hungary's amelioration and convergence to the level of western economies. Scrutinizing the overall EU investment from Hungary's accession it amounts up to more than 58 billion EUR (more precisely 58.121.922.125 EUR for 2004-2018) (European Commission, 2020b). The EU's 2014-2020 development package encompasses five funds targeting development through the business sector's competitiveness, amelioration of education system and employment,

enhancing efficacy in the utilization of energy and resources, moreover, aiming to equilibrate territorial differences and handling the demographic conditions (European Commission, 2014). The overall project implies the contribution of the EU by a budget of more than 25 billion EUR, which is to a great extent covered by the ERDF (43.2%), by a notable proportion from the CF (24.1%), the ESF (18.5%) and EAFRD (13.7%). From the growth perspectives, the clear dedication to ameliorate and broaden the chance for attaining to higher education and provide proper training package for a sustainable and quality employment is materialized as 20% of the EU 2014-2020 budget (European Commission, 2020a). When it comes to capital formation, financial engagement in the network infrastructure in transport and energy, and the ICT development is considered, which covers approximately 16% of the investments, as expounded before the clear ascending tendency in infrastructure spending from 2014 presumably originates from the respective EU fund. Nevertheless, establishing the ground for the invested capital efficient and meaningful usage, subsidization of research & innovation activities counts for 9%. As of the R&D investments and headcount concerned, notable change can be recognized from 2016 tracing back the sudden rise to both the EU funds and alleviation in the taxation burden for firms engaging in R&D activities (NAV, 2020a). It is imperative to say though, that initiatives for the protection of the environment and prevention of resource depletion through the adaptation of a low-carbon economy is a remarkable commitment of the EU by comprising more than 28% of the funds. Nonetheless, competitiveness as such is also one of the targets of these funds; the package aims to make SMEs achieve competitive characteristics through the improvement of growth elements identified in the thesis by 14% of the budget (European Commission, 2020a) (European Commission, 2014).

Findings

Being part of international organizations promises beneficial opportunities to the country. In the case of Hungary, most prominently the accession to the European Union, which plays a crucial role. Even though the EU greatly contributed, and still contributes to the institutional development in Hungary, proliferating confrontations may hinder future growth. Hungary's recent defiance strategy with EU principles, due to the dissents in political processes and institutions, violates EU values entailing judicial proceedings and threatens the country with further sanctions. Thanks to the beneficial single market principle, Hungary is perceived to be one of the most integrated members when it comes to intra-EU trade. By imposing sanctions on Hungary, the country would become vulnerable as trading is one of its cornerstones as unfolded before. Even so, the tremendous funds provided to Hungary

assist, among others, in the amelioration of the identified growth determinants and bolster the way of economic growth.

5.4.2.2 Competitiveness

Concerning Hungary's competitive perception, it has improved, thus achieved better positions from 2010 (52nd) based on the *Global Competitiveness Index* (Appendix S1) (WEF, 2019b). Recently it is positioned as 47th amongst 141 countries, which can be traced back to the country's sound performance in the quality and coverage of infrastructure (27th out of 141) (Appendix S2). Furthermore, the *Innovation capability* (41st out of 141) as well as steering the country ahead, coupled with sound *Macroeconomic stability* (43rd out of 141). However, it is lagging and requires amelioration in the field of *Product* (91st) and *Labour market* (80th out of 141) besides the relatively weak *Business dynamism* (83rd out of 141) perceived (WEF, 2019b).

Findings

Over the last decade, Hungary could improve its competitive attributes thus its recognition has ameliorated and led the 47th position out of 141 countries. The country showing advanced level in the field of infrastructure and macroeconomic stability, albeit there is still space to undertake improvements from other perspectives, but most significantly in its market (product-, labour market, financial system and market size) conditions.

6 Conclusion

As unfolded in the analytical framework, the short-run economic growth is led by the demand for goods and services and the long run by the supply that establishes the potential of the economy. Thus, in order to answer the research question in the most precise manner, first, the demand fluctuations reflected in the observed growth in the last ten years are justified thereby referring to the short-run perspective. Secondly, in line with the approach taken towards the antecedents of growth, the direct economic factors – L, Q, K, T, R, TFP are presented and linked to the developments from behind the scene – the political landscape and the institutional background, in order to establish the system's efficiency in exploiting the economic potential of countries – the long-run growth. The conclusions for Poland and Hungary are depicted separately and then combined in concluding remarks to unfold the similarities and differences in economic performance, and its potential, of historically alike countries.

6.1 Poland

6.1.1 Short-run growth

Poland's economic standing highly depends on the economic climate in the EU and thus the EU's recession of 2012-2013 resulting from the financial crisis, was reflected in lower GDP growth of Poland in these years. However, both between 2010-2011 and 2014-2018 Poland has shown extraordinary progress without major macroeconomic imbalances, achieving as much as 5.1% growth rate per capita in 2018. This growth was led by the accelerating demand resulting from several factors. The decreasing inequalities, falling unemployment, rising income and introduction of minimum wage, together with a cultural approach to spend rather than save resulted in a significant boost of private consumption. The stability of the financial sector and low interest rates brought about cheap and safe money which furthered the spending. Moreover, this expansionary monetary policy with increasing state expenditures and investments promoted the GDP growth. What is more, favouring trade climate and weak currency have resulted in great quantities of goods and services traded, and competitiveness of Polish exports contributed to achieving the observed trade surplus.

6.1.2 Long-run growth

Even though the unemployment rate is record low and in the last years Poland actually experienced shortages of labour, the workforce of Poland – L – is not used entirely in terms of its quantity as almost 30% of the working-age population is not engaged. It might be partly connected to institutional decisions concerning social benefits or retirement age. If changed with more incentives given for engaging in labour, Poland could still benefit from extensive growth opportunities. Such changes would be even more significant in the long run as the potential of L is deteriorating due to the regressive population's pyramid. The current labour force potential is not exploited fully either in terms of its quality – Q, which currently can be regarded rather low yet with great and increasing potential for the future. However, in order to secure it, institutional focus should be put on expenditures into advanced education, which currently is not of a main interest for the ruling party.

The quantity of capital – K – is increasing in value yet it is not keeping up with its importance in GDP. The worrying transport and ICT infrastructure with almost none significant progress observed may constitute a great hindrance to long-run growth. However, there can be barely any further potential spotted from savings that can be translated more into investments. The quality of capital

regarded in terms of technology – T, however, has shown some slight progress yet has still a great potential to be unfolded.

In terms of natural resources – R, Poland's geographic and climate opportunities are barely exploited with favourable conditions to produce renewable energy promoting sustainable growth instead of basing the electricity production on coal and further not only the worrying depletion (P) but also the EU heated debate. The lands and waters could be used more for economic activity, yet the access to them are rather institutionally restricted to some domestic agents. Due to low quality of infrastructure some areas might not be economically reachable, yet with increasing T it might be possible to extract more rent from R.

The observed labour productivity increases could have been a result of both increased quality of labour, quantity and quality of capital but also from increasing efficiency of using all resources – TFP. Since Poland has immense economic opportunities to be exploited, favourable legislative to investors and great financial and macroeconomic stability, further potential capital, technological and knowledge inflows into the country could result in accelerating the productivity gains in the long run. Thus, the already visible TFP improvements since around 2015 are likely to continue.

Hence, Poland has yet the potential to employ the rest of the production inputs in the long run and benefit from productivity gains coming from extensive opportunities – primarily in terms of K, but also intensive ones – Q, T and TFP. However, in terms of the K, external injections of capital would be greatly valuable, which would also be of great importance for ameliorating Q, T thereby contributing to TFP increases. Nevertheless, the current political landscape fuelled by the power game of the ruling party creates great institutional uncertainty for both domestics and foreign market agents that might cut down investments and thus developments of the production factors further hindering the growth perspective. Moreover, the uncertainty has a significantly deteriorating effect on international relationships especially with the European Union, the main economic partner and founder of Polish development undertakings. It could lead to the EU resorting to drastic measures that would endanger the future membership of the country in the international body and jeopardize enjoying the economic and business benefits that come with it.

6.2 Hungary

6.2.1 Short-run growth

Concerning Hungary's economic performance through the examined period patterns of bottleneck periods can be clearly defined. Primarily, in the years after the financial crisis, Hungary's strong reliance on the EU's performance can be identified manifested in economic slowdown for both Hungary and the EU in 2011-2012. Moreover, the connectedness can be traced back to the country's integration in the intra-EU trade constituting almost 80% of its total trading activities.

Notwithstanding, the recent prosperous growth of the country, as of 5.3% GDP growth per capita, relies also on the steadily ascending domestic consumption. The citizens' broadening opportunities as unfolded through the increasing foreign investments, thus creating more workplaces. Furthermore, the constant government expenditures altogether contribute to a reduction in unemployment. Concerning the growing tendency in real wages and by providing cheap financing options by an extra loose monetary policy in place accelerates the domestic demand. Moreover, the ascending inflation rate ostensibly reflects the approach of the expansionary monetary policy and the stimulated consumption, it even creates a beneficial ground for export activities. However, as it can be concluded from the trading activities, the positive trade balance started diminishing that may hinder the short-term growth if the country cannot intensify its export or mitigate the level of import.

6.2.2 Long-run growth

Taking into consideration the country's long-term growth perspectives, the declining population poses threats to the future of the labour force. Even though the life expectancy is increasing slightly as well, measures taken by the government to expand the retirement age may not be enough in the long run. However, as the labour participation rate is unfolded, there is still space left in the employment in human capital, even more notably when the female participation is considered. For this reason, a political initiative has entered into force aiming to financially support the process of starting a family, although besides slightly mitigating the falling of population there is not yet remarkable outcome identified. Turning to the quality of labour, yet there are huge potentials for amelioration as tertiary educational attainment besides the capital city is still scarce. Notwithstanding, there is an increasing tendency when it comes to the active population's higher educational background. Furthermore, the growing investment level in education establishes the ground for

further improvement. Especially strong engagement is explicated by the EU funds targeting the upskilling of the labour force.

In terms of the fixed capital, the amount of capital formation is firmly growing since the latest slowdown of the economy observed in 2012 denoting Hungary as one of the most investment-driven countries based on the percentage of GDP. Even in the field of infrastructure, there can be heavy investment observed starting from 2013, which progress is further reflected in Hungary's outstanding ranking as being attributed to its competitive characteristics. However, it is worth mentioning that besides the notable progress achieved in recent years, for the sake of long-term growth the country needs to engage more in improving the conditions. Also, amelioration of the quality of capital through the introduction of innovative solutions and more commitment both from a financial and labour perspective anticipates not yet exploited opportunities.

Also, amelioration of the quality of capital through the introduction of innovative solutions and more commitment both from a financial and labour perspective anticipates not yet exploited opportunities. Although as depicted by the level of investment and employment in the sector, there is a sound growing tendency from 2016.

When it comes to the country’s natural resources, arable land still plays a crucial role in covering 58% of the country’s area. Moreover, its importance has also been enhanced due to the political scene’s nationalist approach of keeping the farmland’s acquisition regulated, which may favour their interest but can hinder smaller scope farmers’ opportunities. Concerning the electricity supply, albeit Hungary could remarkably shift from the usage of fossil fuels, strong dependency on the nuclear power plant makes the country dependent and vulnerable on the supply side.

The enumerated determinants of growth were to some extent combined as TFP in the labour productivity rate’s growth. Presumably, the accumulation of invested capital and enhanced level of investment into R&D from 2016, besides the increasing proportion of the population having higher educational level serves as a justification for increasing efficiency of using inputs.

Ostensibly the growth elements would imply the economy’s future prosperity, although the political and institutional environment may create hindrances. The exaggerating initiatives of grasping power and thus undermining democratic principles were reflected already in the quality of both political and economic institutions. Nevertheless, international trading relations and attractiveness of FDI can also

be hindered by the prevailing government's nationalist approach. In terms of relations, as articulated in the beginning, the EU to a great extent contributes to Hungary's development and wealth, although defying EU principles might entail worrisome perspectives for the country.

6.3 Overall conclusion

The economic growth of both countries is undeniably dependent upon the international relations and international transactions. Slowing down of the global economy and the European region have a deteriorating effect on both Poland' and Hungary's development. However, with the positive economic and political climate, the countries thrive, at least in the short-run, through engaging their not-yet-exploited production inputs and increasing the output. Nevertheless, the impressive economic performance of both Poland and Hungary first and foremost has its antecedents in their history – both of the countries had as little as thirty years to exploit these opportunities of the market-oriented economy and, in line with the development of other economies, their growth will level off with time due to decreasing potential of production inputs to be further used. However, both the countries have gloomy perspectives when it comes to the quantity of labour L (although Poland's population starts from a much bigger number) due to declining population and institutional changes that result in increasing dependency rate. There is, nevertheless, a lot of potential in ameliorating the quality of labour Q, and thus in an increase of the labour productivity. In terms of capital K, there have been differences observed, as Hungary is more focused on increasing its state and will be able to exploit all opportunities, inter alia resulting from greater capital intensity, more than Poland. In terms of T, both countries have a lot of amelioration to be done. In terms of natural resources, both countries may still profit from its land opportunities. Poland and Hungary both have, however, environmental issues to be tackled. However, a lot of productivity to be gained for the countries is still on the part of efficiency of using inputs (TFP)

The changes in politics and institutional environment of both Poland and Hungary may however risk the potential that the country's economic drivers have yet to unfold. Especially for both countries, imperative is the relationship with the EU that through its single market facilitates the trade exchange and through its funds contributes to ameliorating majority of the production inputs. However, in order to enjoy these opportunities political and institutional stability and conformity must be ensured, what has not been the case in terms of Hungary for already 10 years and Poland, since at least 2015. The stability of the system and enforcement creating favorable business conditions, is of great importance for all market agents, also domestic ones, as their initiative and success rely on the quality of institutions.

The studied cases highlighted the dynamism of such complex systems as the business environment, through depicting the relationship within Political, Institutional and Economic subsystems, between them and between them and the surrounding world. It leads to the undeniable conclusion that treating the economic factors in isolation from the rest of the system, would yield incorrect results in the long run. The uncertainty or potential created on the basis of these relationships are nonetheless of similar if not bigger importance for economic and business standing.

6.4 Perspective

First and foremost, one should keep in mind that such a remarkable economic growth is not perpetual. As it has been seen on the example of the western, advanced economies, after a while, when the growth determinants are exploited and improved to a great extent, the growth level starts subsiding. Although, it is imperative, to even at an advanced level country try to achieve efficiency (in Q, T), or start taking measures for the sake of future inputs such as the case of the ageing population in Europe. Nonetheless, these countries need to enhance the defined determinants, the labour (L), quality of labour (Q), the capital (K), technology (T), and efficient usage of natural resources (R), as there is still immense room for improvement remained.

Notwithstanding, as unfolded, Poland's and Hungary's defiance strategy encounter the EU's wrath. Due to the countries' nationalist approaches and infringement of the EU's principles, it might entail the introduction of sanctions, manifested through obstructions in trading, denial of rights, halt on the disbursement of financial support or in the gravest their dismissal from the EU. As one can suggest, each option to a great extent would subvert and derogate the countries' prosperity.

As of today, the global pandemic is also affecting the shortlisted countries and its effect cannot be neglected when analyzing the countries' perspective. Due to the current worldwide situation resulting from COVID-19, there can be a decrease in demand observed thereby creating supply bottlenecks and thus an output gap resulting in the economy not working at full capacity. Inactivity of labour and capital will mean fall of expenditures and investments and, what follows, plummeting GDP. Furthermore, as it can be experienced in this plight, the countries' connectedness seems to be diminishing, when national values and wealth are on the edge. Thereby international, trading relations get hurt and dependency on other countries may entail harmful effects on economies.

6.5 Future research

The analysis of Poland's and Hungary's growth undeniably requires further research. Even though the applied model's aim is to grasp and depict an overview of countries' complex system, during the writing process and questing for relevant information sources, several aspects and topics were recognized that could not be further articulated due to the page limitations. Amongst others, by delving deeper into these countries' structure, further research could target and more specifically expound the distribution of public funds, the public procurement strategy and its transparency. Moreover, it would also be worth articulating about the tremendous EU funds and its spending profoundly. Nonetheless, by digging deeper into the legislation, we could get a clearer portrayal of the way industries and sectors are regulated. Also, the institutional framework of the EU and the countries' conformity and transposition of the laws, altogether with Poland and Hungary's further encounters could be perceived as another thesis topic.

In terms of Poland and Hungary's economic overview, analyzing their sectors' contributions and characteristics, with the relevant institutional background, could be concluded with the advantages that a country could apply and transpose into other economic branches, thus promoting the overall country's competitiveness.

6.6 Limitations

To grasp the systems' complexity, the PIE model was applied. Although it is needed to be kept in mind, that even with its application, there are several unrevealed links, even unilateral and mutual connections that would be impossible to map.

When it comes to the limitations faced throughout the analysis, they were mostly based on the sources and indicators complexity and transparency. In order to identify different parts of the PIE elements, indices were generally decomposed and used separately to reveal and deduct answers for distinct measures taken. Nonetheless, due to the limitations, scrutinizing the economy from some aspects, like digital trade or a more profound map of the relationship between MNEs and the local community were needed to be deprioritized, although it might have assisted in the analysis of Poland and Hungary. Furthermore, during the analysis of institutions and the relation with the EU, the incorporation of legislation and rules were selected and based on their applicability for the topic of thesis, thus the thesis did not touch other EU principles than the one single market.

Nevertheless, when it comes to the period of the scrutiny, sometimes it was faced with lack of update in the databases, thus in most cases, the figures and indices utilized try to cover the period or at least identify the tendency. Moreover, as a precedent stance for Poland and Hungary's economic performance, the historical context unfolds the countries' transition period and not giving elaboration on the financial crisis. Even though from some aspects, the thesis mentions the crisis' aftermaths, but only considered as a point in the progress.

Hence, the research question was attempted to be answered in the most precise manner yet, as stated in the Methodology, studying of such a complex matter cannot guarantee the unquestionable legitimacy of the conclusion but rather allows for producing the best possible explanation.

7 Bibliography

sArbnor, I., & Bjerke, B. (2009). *Methodology for Creating Business Knowledge, 3rd edition*.

Balcerowicz, L. (1994). Poland: the economic outcomes. *Economic Policy*, *December*.

Balcerowicz, L. (2017). Window of Opportunity. *Finance & Decelopment, IMF*, *54*(2). https://www.imf.org/external/pubs/ft/fandd/2017/06/trenches.htm

Bauer, T. (1990). Reforming the Planned Economy: The Hungarian Experience. *The ANNALS of the American Academy of Political and Social Science*. https://doi.org/10.1177/0002716290507001011

Bertelsmann Stiftung. (2019a). *Economic Policies*. https://www.sgi-network.org/2019/Policy_Performance/Economic_Policies/Economy/Economic_Policy

Bertelsmann Stiftung. (2019b). *Quality of Democracy*. https://www.sgi-network.org/2019/Democracy/Quality_of_Democracy

Blanchard, O. (1997). *The Economics of Post-communist Transition*. Oxford University Press.

Blanchard, O., Amighini, A., & Giavazzi, F. (2017). *Macroeconomics: A european perspective*. Pearson Education Limited.

Blonigen, B. A. (2019). *Foreign direct investment*. World Scientific Publishing Co. Pte Ltd.

Boote, A. R., & Somogyi, J. (1991). *Economic Reform in Hungary Since 1968*.

Bozóki, A. (1994). Party Formation and Constitutional Change in Hungary. *Journal of Communist Studies and Transition Politics*. https://doi.org/10.1080/13523279408415260

Bryman, A. (2012). *Social Research Methods, 4th Edition*. Oxford University Press, USA.

Central Bank of Hungary. (n.d.). *A monetáris tanács állásfoglalása a középtávú inflációs cél nagyságáról*. Retrieved May 13, 2020, from https://www.mnb.hu/monetaris-politika/a-monetaris-tanacs/allasfoglalasok/a-monetaris-tanacs-allasfoglalasa-a-kozeptavu-inflacios-cel-nagysagarol

Central Bank of Hungary. (2019). *Hungary's external debt ratios continued to improve*. https://www.mnb.hu/en/pressroom/press-releases/press-releases-2019/hungary-s-external-debt-ratios-continued-to-improve

Centre for Public Opinion Research. (2019). *Komunikat z badań; Kościoły i wybory*. https://www.cbos.pl/SPISKOM.POL/2019/K_149_19.PDF

CIA. (2020). *The World Factbook: Hungary*. https://www.cia.gov/library/publications/the-world-

factbook/geos/hu.html

Civil Rights and Political Liberties. (n.d.). Sustainable Governance Indicators. Retrieved April 11, 2020, from https://www.sgi-network.org/2019/Democracy/Quality_of_Democracy/Civil_Rights_and_Political_Liberties/Political_Liberties

Coal rents (% of GDP). (n.d.). World Bank. Retrieved May 12, 2020, from https://data.worldbank.org/indicator/NY.GDP.COAL.RT.ZS

Country report Poland. (2020). In *Economist Intelligence Unit*. https://doi.org/10.1080/14649360902759956

Cykliczne materiały analityczne NBP. (n.d.). Narodowy Bank Polski (National Bank of Poland).

Data by domains. (2020a). Statistics Poland. https://bdl.stat.gov.pl/BDL/dane/podgrup/temat

Data by domains. (2020b). Statistics Poland.

Domestic credit to private sector (% of GDP). (n.d.). World Bank. Retrieved May 10, 2020, from https://databank.worldbank.org/data/reports.aspx?source=2&series=FS.AST.PRVT.GD.ZS

Dunai, M. (2019). *Hungary working to modify funding for Russian-built nuclear plant*. Reuters. https://www.reuters.com/article/us-hungary-nuclearpower-financing/hungary-working-to-modify-funding-for-russian-built-nuclear-plant-idUSKCN1PJ153

Dunai, M. (2020). *Gays in Hungary facing increased government hostility: rights group*. Reuters. https://www.reuters.com/article/us-hungary-rights-gays/gays-in-hungary-facing-increased-government-hostility-rights-group-idUSKBN1ZS27T

Dunn, M. H. (1994). Do nations compete economically? - A critical comment on Prof. Krugman's essay "competitiveness: A dangerous obsession." *Intereconomics*, 303–308. https://doi.org/10.1007/BF02928169

Dunning, J. H., & Lundan, M. (2008). Multinational Enterprises and the Global Economy, Second Edition. *International Business*.

EBRD. (1996). *Transition Report 1996*.

EBRD. (1997). *Transition Report 1997*.

EBRD. (1998). *Transititon Report 1998*.

EBRD. (2007). *Transition report 2007*.

EBRD. (2010). *Transition Report 2010*.

EBRD. (2016). *Transition Report 2015-16*.

EBRD. (2020). *Transition Report 2019-20*.

Economic Policies: Taxes. (2019). Sustainable Governance Indicators. https://www.sgi-network.org/2019/Policy_Performance/Economic_Policies/Taxes/Tax_Policy

EIU. (2014a). *Country report: Hungary*.

EIU. (2014b). *Country Report: Hungary*. http://www.eiu.com.esc-web.lib.cbs.dk/FileHandler.ashx?issue_id=412477425&mode=pdf

EIU. (2019). *Country report: Hungary*.

EIU. (2020a). *Country report: Hungary*. http://www.eiu.com.esc-web.lib.cbs.dk/FileHandler.ashx?issue_id=718926055&mode=pdf

EIU. (2020b). *Democracy Index 2019*.

EIU. (2020c). *Hungary*. http://country.eiu.com.esc-web.lib.cbs.dk/article.aspx?articleid=1239359307&Country=Hungary&topic=Summary&subtopic=Basic+data

Eksport towarów i usług według krajów. (n.d.-a). Statistics Poland.

Eksport towarów i usług według krajów. (n.d.-b). Statistics Poland. Retrieved May 8, 2020, from http://swaid.stat.gov.pl/HandelZagraniczny_dashboards/Raporty_predefiniowane/RAP_DBD_HZ_4.aspx

Electricity production from coal sources (% of total). (n.d.). World Bank. Retrieved May 12, 2020, from https://data.worldbank.org/indicator/EG.ELC.COAL.ZS

Electricity production from coal sources (% of total) - European Union. (2015). World Bank. https://data.worldbank.org/indicator/EG.ELC.COAL.ZS?locations=EU

Emerytura w wieku powszechnym. (2020). Zakład Ubezpieczeń Społecznych. https://www.zus.pl/swiadczenia/emerytury/emerytura-dla-osob-urodzonych-po-31-grudnia-1948/emerytura-w-wieku-powszechnym

Employment in agriculture (% of total employment) (modeled ILO estimate). (n.d.). World Bank. Retrieved May 13, 2020, from https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS

Employment in industry (% of total employment) (modeled ILO estimate). (n.d.). World Bank. Retrieved May 13, 2020, from https://data.worldbank.org/indicator/SL.IND.EMPL.ZS

Employment in services (% of total employment) (modeled ILO estimate). (n.d.). World Bank. Retrieved May 13, 2020, from https://data.worldbank.org/indicator/SL.SRV.EMPL.ZS

ETUI. (2019). *Industrial relations in Hungary: Background summary*. https://www.etui.org/Covid-Social-Impact/Hungary/Industrial-relations-in-Hungary-background-summary

Europa.eu. (2020). *Hungary: Overview*. https://europa.eu/european-union/about-

eu/countries/member-countries/hungary_en

European Commission. (2014). *Summary of the Partnership Agreement for Hungary, 2014-2020*.

European Commission. (2019a). *Digital Economy and Society Index: Methodological note*. https://ec.europa.eu/digital-single-market/en/news/digital-economy-and-society-index-2018-report

European Commission. (2019b). *Digital Economy and Society Index (DESI): 2019 Country report, Hungary*. https://ec.europa.eu/digital-single-

European Commission. (2019c). *Single Market Scoreboard*. https://ec.europa.eu/internal_market/scoreboard/performance_by_member_state/hu/index_en.htm

European Commission. (2020a). *Country Data for: Hungary*. https://cohesiondata.ec.europa.eu/countries/HU

European Commission. (2020b). *EU expenditure and revenue 2014-2020*. https://ec.europa.eu/budget/graphs/revenue_expediture.html

European Commission. (2020c). *The Digital Economy and Society Index (DESI)*. https://ec.europa.eu/digital-single-market/en/desi

Eurostat. (2020a). *General government gross debt*. https://ec.europa.eu/eurostat/databrowser/view/sdg_17_40/default/table?lang=en

Eurostat. (2020b). *Government revenue, expenditure and main aggregates*. https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

Eurostat. (2020c). *Population on 1 January*. https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00001

Eurostat. (2020d). *Population on 1 January*.

FDI Regulatory Restrictiveness Index. (n.d.). OECD. Retrieved May 11, 2020, from https://www.oecd.org/investment/fdiindex.htm

Foreign direct investment, net inflows (% of GDP). (n.d.). World Bank.

Foreign direct investment, net outflows (% of GDP). (n.d.). World Bank.

Freedom House. (2019). Freedom on the net 2019. In *Freedom House*. https://freedomhouse.org/country/hungary/freedom-net/2019

Freedom House. (2020). *Freedom in the World 2020: Hungary*. https://freedomhouse.org/country/hungary/freedom-world/2020#PR

Freedom in the World. (2020a). Freedom House. https://freedomhouse.org/report/freedom-

world/2020/leaderless-struggle-democracy

Freedom in the World. (2020b). Freedom House.

Freedom in the World 2020: Poland. (2020). Freedom House. https://freedomhouse.org/country/poland/freedom-world/2020

Fundusze Europejskie w Polsce. (2016). Portal Funduszy Europejskich. https://www.funduszeeuropejskie.gov.pl/strony/o-funduszach/zasady-dzialania-funduszy/fundusze-europejskie-w-polsce/

Fundusze Europejskie w Polsce. (2019). https://www.funduszeeuropejskie.gov.pl/media/75784/bfe.pdf

Gebrekidan, S., Apuzzo, M., & Novak, B. (2019, November). The Money Farmers: How Oligarchs and Populists Milk the E.U. for Millions. *The New York Times*. https://www.nytimes.com/2019/11/03/world/europe/eu-farm-subsidy-hungary.html

Gray, C. W., & Holle, A. (1996). Bank-Led Restructuring Poland's Enterprise and Bank Poland Restructuring Program, in Poland. In *Policy Research Working Paper*.

Gross savings (% of GDP). (n.d.). World Bank.

Hashi, I. (2000). The Polish National Investment Fund Programme: Mass Privatisation With a Difference? *Comparative Economic Studies*, *70*(1), 87–134.

Heckscher, E. F., Ohlin, B., Flam, H., & Flanders, M. J. (1991). *Heckscher-Ohlin Trade Theory*. The MIT Press.

History of the Stability and Growth Pact. (n.d.). European Commission. https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/stability-and-growth-pact/history-stability-and-growth-pact_en

Hofstede Insights. (2020). *National culture*. https://hi.hofstede-insights.com/national-culture

HR Portal. (2019). *Nyugdíjkorhatár 2019*. https://www.hrportal.hu/hr/nyugdijkorhatar-2019-20190520.html

Hungarian Central Statistical Office. (2011). *1.1 A népesség száma és megoszlása vallás és nemek szerint*. http://www.ksh.hu/nepszamlalas/tablak_vallas

Hungarian Central Statistical Office. (2016). *3.1.7 Population in active age (15–64 years of age) by highest education completed and economic activity, 2016*. https://www.ksh.hu/mikrocenzus2016/book_4_educational_attainment_data

Hungarian Central Statistical Office. (2020a). *2.1.2.2. Economic activity of population aged 15–64*

by sex. https://www.ksh.hu/docs/eng/xstadat/xstadat_long/mpal2_01_02_02a.html

Hungarian Central Statistical Office. (2020b). *2.1.46. Minimum wages (1992–)*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qli041.html

Hungarian Central Statistical Office. (2020c). *2.1.47. Changes in real earnings (1992–)*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qli042.html

Hungarian Central Statistical Office. (2020d). *3.2.21. Value and share of value added of foreign-controlled affiliates by section and the residence of the ultimate owner (2008–)*. http://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qtd004a.html

Hungarian Central Statistical Office. (2020e). *3.5.21. EUR value and value indices of external trade in goods by main partner countries (2014–)*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qkt020f.html

Hungarian Central Statistical Office. (2020f). *3.5.31. Exports by NACE activities and products (2013–)*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qkt031a.html

Hungarian Central Statistical Office. (2020g). *3.7.2. A központi költségvetés bevételei és egyenlege (2005–)*. https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qse006f.html

Hungarian Central Statistical Office. (2020h). *6.2.1.11. Unemployment rate (2000–)*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qlf027b.html?down=0.800000011920929

Hungarian Central Statistical Office. (2020i). *6.2.1.14. Average annual number of employees by the geographical area of the local unit (2000–) [persons]*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qli048b.html

Hungarian Central Statistical Office. (2020j). *6.2.1.16. Average monthly net earnings of full-time employees by the geographic area of the local unit (2000–)*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qli050b.html

Hungarian Central Statistical Office. (2020k). *6.3.4.1. Data of R&D units (2005–)*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_ohk007a.html

Hungarian Central Statistical Office. (2020l). *Net average earnings without tax benefits of full-time employees by economic branches (2009–2019)*. Central Statistical Office. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qli067a.html

Hungarian Central Statistical Office. (2020m). *Number of employed persons by industries, economic branches and sex (2010-2018)*. https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qlf005c.html

Hungarian Government. (2016). *Minden, ami a Családi Otthonteremtési Kedvezményről tudható*. https://www.kormany.hu/hu/hirek/minden-ami-a-csaladok-otthonteremtesi-kedvezmenyerol-tudhato

Hungarian Government. (2020a). *Az önkormányzati választások*. https://www.kormany.hu/hu/mo/a-valasztasi-rendszer/az-onkormanyzati-valasztasok

Hungarian Government. (2020b). *Az országgyűlési választások*. https://www.kormany.hu/hu/mo/a-valasztasi-rendszer/az-orszaggyulesi-valasztasok

Hungarian Government. (2020c). *Magyarország a Nemzetközi Szervezetekben*. https://www.kormany.hu/hu/kulgazdasagi-es-kulugyminiszterium/magyarorszag-a-nemzetkozi-szervezetekben

Hungarian Government. (2020d). *The President of the Republic*. https://www.kormany.hu/en/doc/the-hungarian-state/the-president-of-the-republic

HVG. (2016). *Megveszi az állam az EDF DÉMÁSZ-csoportot is?* https://hvg.hu/gazdasag/20160215_allamositas_demasz_enksz_aramszolgaltato_szeged

IFS. (2020). *Interest Rates selected indicators*. https://data.imf.org/regular.aspx?key=61545855

Import towarów i usług według krajów. (n.d.-a). Statistics Poland.

Import towarów i usług według krajów. (n.d.-b). Statistics Poland. Retrieved May 8, 2020, from http://swaid.stat.gov.pl/HandelZagraniczny_dashboards/Raporty_predefiniowane/RAP_DBD_HZ_3.aspx

Inklaar, R., & Timmer, M. (2013). Capital, Labor and TFP in PWT8. 0. *University of Groningen (Unpublished)*, 1–38. http://piketty.pse.ens.fr/files/InklaarTimmer13.pdf

Interest rates. (n.d.). IMF.

Investment Policy Measures. (n.d.). UNCTAD. Retrieved May 11, 2020, from https://investmentpolicy.unctad.org/investment-policy-monitor/171/poland

IPiSS. (2020). *Wysokość minimum socjalnego*.

Jenei, M. (2015). *Kivonul a Baumax Magyarországról*. https://index.hu/gazdasag/2015/01/21/kivonul_a_baumax_magyarorszagrol/

Karwowska, A., Domagała, M., Chołodowski, M., Pasterczyk, J., & Stawicka, I. (2019). *Parafie pod wezwaniem Prawa i Sprawiedliwości. Kościół i PiS razem walczą o głosy*. Gazeta Wyborcza. https://wyborcza.pl/7,162657,25231118,parafie-pod-wezwaniem-prawa-i-sprawiedliwosci-kosciol-i-pis.html

KDNP. (2006). *Együttműködési Megállapodás*. https://kdnp.hu/files/fidesz-

kdnp_egyuttmukodesi_megallapodas_2006._januar_12..pdf

Kiss, G. P., & Szapáry, G. (2000). Fiscal adjustment in the transition process: Hungary, 1990-1999. *Post-Soviet Geography and Economics*. https://doi.org/10.1080/10889388.2000.10641140

Kolozsi, Á., & Szémann, T. (2018). *Szegénység és falvak: innen jön a Fidesz-kétharmad*. Index.Hu. https://index.hu/belfold/2018/valasztas/2018/04/10/orszagszakadas_amig_a_fidesz_elkisgazdasodni_a_baloldal_kinyirta_magat_videken/

Kornai, J. (1994). Transformational Recession: The Main Causes. *Journal of Comparative Economics*, *19*(1), 39–63.

Kornai, J. (2001). Hardening the budget constraint: The experience of the post-socialist countries. *European Economic Review*, *45*(9), 1573–1599. https://doi.org/10.1016/S0014-2921(01)00100-3

KPMG. (2020). *Corporate tax rates table*. https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html

Krugman, P., Obstfeld, M., & Melitz, M. J. (2018). *International Economics Theory and Policy*. Pearson Education Limited.

Krugman, P. R. (1986). *Strategic trade policy and the new international economics*. Cambridge, Mass.

Kuznets, S. (1955). Economic Growth and Income Inequality. *The American Economic Review*, *45*(1), 1–28.

Labor Market Policy. (2019). Sustainable Governance Indicators. https://www.sgi-network.org/2019/Policy_Performance/Economic_Policies/Labor_Markets/Labor_Market_Policy

Labour force participation rate. (n.d.). Retrieved May 12, 2020, from https://data.oecd.org/emp/labour-force-participation-rate.htm

Life expectancy at birth, total (years). (n.d.). World Bank. Retrieved May 12, 2020, from https://data.worldbank.org/indicator/sp.dyn.le00.in

Lomax, B. (1994). Obstacles to the Development of Democratic Politics. *Journal of Communist Studies and Transition Politics*. https://doi.org/10.1080/13523279408415262

Macroeconomic Data Bank. (n.d.). Statistics Poland.

Marples, D. R. (2004). *The Collapse of the Soviet Union, 1985-1991*. Routledge.

MVM. (2020). *Prospects for energy industry and natural gas in Hungary*. http://www.magyarfoldgazkereskedo.hu/products-and-services/prospects-energy-industry-

natural-gas-hungary/?lang=en

Mygind, N. (1994). *Societies in Transition*. Samfundslitteratur 1994.

Mygind, N. (2007). *The PIE-model: Politics – Institutions – Economy* (Issue 67).

Mygind, N. (2011). Transition from plan to market – a PIE analysis – 2011. *CIBEM Working Paper Series*, *March*.

Mygind, N. (2016). *PIE-Book: A simple Growth Model*. INT, CBS.

Nagórski, J. (2020). *Wojna Polski z Unią Europejską... Wiemy, jakie sankcje gotowa jest wprowadzić UE*. Eurokurier24. https://eurokurier24.pl/index.php/pl/item/470-wojna-polski-z-unia-europejska-wiemy-jakie-sankcje-gotowa-jest-wprowadzic-ue

Narodowy Bank Polski (National Bank of Poland). (2018). *Zagraniczne inwestycje bezpośrednie w Polsce w 2018 roku*. https://www.nbp.pl/home.aspx?f=/publikacje/zib/zib.html

National Election Office of Hungary. (2018). *Országgyűlési képviselők választása 2018*. https://www.valasztas.hu/ogy2018

National Election Office of Hungary. (2020). *Helyi önkormányzati választások 2019*. https://www.valasztas.hu/helyi-onkormanyzati-valasztasok-2019

National Electoral Commission. (2015a). *Wybory Prezydenta Rzeczypospolitej Polskiej 2015 - 1 głosowanie*. https://prezydent2015.pkw.gov.pl/319_Pierwsze_glosowanie.html

National Electoral Commission. (2015b). *Wybory Prezydenta Rzeczypospolitej Polskiej 2015 - 1 głosowanie*.

National Electoral Commission. (2015c). *Wybory Prezydenta Rzeczypospolitej Polskiej 2015 - ponowne głosowanie*.

National Electoral Commission. (2018). *Local Government Elections 2018 Miasto Stołeczne Warszawa*. https://wybory2018.pkw.gov.pl/en/geografia/146501#results_vote_elect_mayor_round_1

National Electoral Commission. (2019a). *Sejm voting results 2019*.

National Electoral Commission. (2019b). *Senate voting results 2019*.

NAV. (2020a). *A short summary on the taxation of business associations*. https://en.nav.gov.hu/taxation/taxinfo/summary_companies.html

NAV. (2020b). *Az összevont adóalapot terhelő személyi jövedelemadó mértékek 2011-2020*. https://www.nav.gov.hu/nav/szolgaltatasok/adokulcsok_jarulekmertekek/Adotablak/Az_osszevont_adoalapo20181227.html

NAV. (2020c). *Minimálbér, garantált bérminimum*.

https://nav.gov.hu/nav/ado/jarulek/Minimalber__garantalt_berminimum.html

OECD. (2017). *Tertiary graduates by field*. https://doi.org/10.1787/9af26c71-en

OECD. (2018a). *Adult education level*. https://doi.org/10.1787/36bce3fe-en

OECD. (2018b). PISA 2018 insights and interpretations. *OECD Publishing*, 64. https://www.oecd.org/pisa/PISA 2018 Insights and Interpretations FINAL PDF.pdf

OECD. (2019a). *Gross domestic spending on R&D*. https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm

OECD. (2019b). *Labour productivity and utilisation*. https://doi.org/10.1787/02c02f63-en

OECD. (2020a). *Balance of Payments BPM6: Balance on goods*. https://stats.oecd.org/index.aspx?queryid=67114#

OECD. (2020b). *Balance of Payments BPM6: Balance on services*. https://stats.oecd.org/index.aspx?queryid=67115#

OECD. (2020c). *Balance of Payments BPM6: Current account balance*. https://stats.oecd.org/Index.aspx?DataSetCode=MEI_BOP6#

OECD. (2020d). *General government deficit (indicator)*. https://doi.org/10.1787/77079edb-en

OECD. (2020e). *Household savings (indicator)*. https://doi.org/10.1787/cfc6f499-en

OECD. (2020f). *Income inequality (indicator)*. https://doi.org/10.1787/459aa7f1-en

OECD. (2020g). *Income inequality (indicator)*. https://doi.org/doi: 10.1787/459aa7f1-en

OECD. (2020h). *OECD FDI Regulatory Restrictiveness Index*. https://stats.oecd.org/Index.aspx?datasetcode=FDIINDEX#

OECD. (2020i). *OECD International Direct Investment Statistics 2019*. https://doi.org/https://doi.org/10.1787/g2g9fb42-en

OECD. (2020j). *Trade in goods and services (indicator)*. https://doi.org/10.1787/0fe445d9-en

OECD. (2020k). *Transport infrastructure investment and maintenance spending*. https://stats.oecd.org/Index.aspx?themetreeid=24&datasetcode=ITF_INV-MTN_DATA#

Pawłowska, D., & Dudzik, S. (2019). *Wybory 2019. Rolnicy za PiS, kierownicy za KO. Wykształcenie i zawody wyborców*. Gazeta Wyborcza. https://sonar.wyborcza.pl/sonar/7,156422,25306309,rolnicy-za-pisem-kierownicy-za-ko-wyksztalcenie-i-zawody-wyborcow.html

Peng, M. W., & Meyer, K. (2019). *International Business*. Cengage Learning EMEA.

Plosser, C. I. (1992). The Search for Growth. *Proceedings - Economic Policy Symposium - Jackson Hole*.

Poland's government wants to take control of banking. (2018). *The Economist*.

Poland in the EU. (2020). Website of the Republic of Poland. https://www.gov.pl/web/eu/poland-in-the-eu

Polish abortion law protesters march against proposed restrictions. (2016). The Guardian.

Polityka pieniężna. (n.d.). Narodowy Bank Polski (National Bank of Poland). Retrieved May 5, 2020, from https://www.nbp.pl/home.aspx?f=/polityka_pieniezna/polityka_pieniezna.html

Polska w organizacjach międzynarodowych. (2020). Network PL. http://www.network-pl.org/pl/news/polska-w-organizacjach-miedzynarodowych

Porter, M. E. (1990). The Competitive Advantage of Nations. *Harvard Business Review*. https://doi.org/10.1007/978-1-349-11336-1

Portfolio. (2015). *Kivonul az ING az NN-ből*. https://www.portfolio.hu/bank/20150527/kivonul-az-ing-az-nn-bol-214643

Quality of Democracy. (2019). Sustainable Governance Indicators. https://www.sgi-network.org/2019/Democracy/Quality_of_Democracy

Reporters Without Borders. (n.d.). *Poland - further decline*. Retrieved April 29, 2020, from https://rsf.org/en/poland

Reporters Without Borders. (2020a). *Hungary*. Reporters Without Borders. https://doi.org/10.1111/2047-8852.12125

Reporters Without Borders. (2020b). Press Freedom Index. In *World Bank*. http://en.rsf.org/press-freedom-index-2010.1034.html

Reporters Without Borders. (2020c). *World Press Freedom Index*. https://rsf.org/en/ranking

Researchers in R&D (per million people). (n.d.). World Bank. Retrieved May 13, 2020, from https://data.worldbank.org/indicator/SP.POP.SCIE.RD.P6

Ricardo, D. (1817). *On the Principles of Political Economy and Taxation*.

Rodzina 500 plus. (n.d.). Serwis Rzeczypospolitej Polskiej. Retrieved May 12, 2020, from https://www.gov.pl/web/rodzina/rodzina-500-plus

Romer, P. M. (1986). Increasing Returns and Long-Run Growth. *Journal of Political Economy*, *94*(5).

Schult, T. W. (1961). Investment in Human Capital. *The American Economic Review*, *51*(1), 1–17.

Słowik, K. (2020). *Koniec gimnazjów i wielki bunt nauczycieli. To był trudny rok dla polskiej szkoły*. Gazeta Wyborcza. https://wyborcza.pl/7,75398,25530250,koniec-gimnazjow-i-wielki-bunt-nauczycieli-jaki-to-byl-rok.html

Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, *70*(1), 65–94.

Statistics Poland. (n.d.). *Annual Public Finance*. Macroeconomic Data Bank: Retrieved May 3, 2020, from https://bdm.stat.gov.pl/

Statistics Poland. (2018a). *Average monthly gross wages and salaries in national economy by NACE rev.2*. https://bdl.stat.gov.pl/BDL/dane/podgrup/temat

Statistics Poland. (2018b). Pracujący i wynagrodzenia w gospodarce narodowej w 2017 r. – dane ostateczne. In *Informacje statystyczne*. https://stat.gov.pl/obszary-tematyczne/rynek-pracy/pracujacy-zatrudnieni-wynagrodzenia-koszty-pracy/pracujacy-i-wynagrodzenia-w-gospodarce-narodowej-w-2018-roku-dane-ostateczne,17,3.html

Statistics Poland. (2018c). Pracujący i wynagrodzenia w gospodarce narodowej w 2017 r. – dane ostateczne. In *Informacje statystyczne*.

Statistics Poland. (2019a). *Concise Statistical Yearbook of Poland*. https://stat.gov.pl/obszary-tematyczne/roczniki-statystyczne/roczniki-statystyczne/maly-rocznik-statystyczny-polski-2019,1,21.html

Statistics Poland. (2019b). *Partnerzy dialogu społecznego – organizacje pracodawców i związki zawodowe w 2018 r. (wyniki wstępne)*. https://stat.gov.pl/obszary-tematyczne/gospodarka-spoleczna-wolontariat/gospodarka-spoleczna-trzeci-sektor/partnerzy-dialogu-spolecznego-zwiazki-zawodowe-i-organizacje-pracodawcow-wyniki-wstepne,16,1.html

Statistics Poland. (2019c). *Pracujący i wynagrodzenia w gospodarce narodowej w 2018 r. – dane ostateczne*. https://stat.gov.pl/obszary-tematyczne/rynek-pracy/pracujacy-zatrudnieni-wynagrodzenia-koszty-pracy/pracujacy-i-wynagrodzenia-w-gospodarce-narodowej-w-2018-roku-dane-ostateczne,17,3.html

Statistics Poland. (2019d). *Pracujący i wynagrodzenia w gospodarce narodowej w 2018 r. – dane ostateczne*.

Statistics Poland. (2019e). *Wyznania religijne w Polsce 2015–2018*. https://stat.gov.pl/obszary-tematyczne/inne-opracowania/wyznania-religijne/wyznania-religijne-w-polsce-20152018,5,2.html

Statistics Poland. (2019f). *Yearbook Trade of Foreign Statistics of Poland*.

Statystyka Bilansu Płatniczego. (n.d.). Narodowy Bank Polski (National Bank of Poland).

Struktura ludności według wieku od 1970 r. (2019). Statistics Poland. https://stat.gov.pl/obszary-tematyczne/ludnosc/ludnosc/ludnosc-piramida/

Sustainable Governance Indicators. (n.d.-a). Bertelsmann Stiftung. Retrieved May 10, 2020, from https://www.sgi-network.org/2019/

Sustainable Governance Indicators. (n.d.-b). Bertelsmann Stiftung.

Svejnar, J. (2002). Transition Economies: Performance and Challenges. *Journal of Economic Perspectives*, *16*(1), 3–28.

Századvég. (2018). *A magyarok növekvő bűnözésre számítanak Európában a migráció következtében*. https://szazadveg.hu/hu/kutatasok/az-alapitvany-kutatasai/piackutatas-kozvelemeny-kutatas/a-magyarok-novekvo-bunozesre-szamitanak-europaban-a-migracio-kovetkezteben

TCdata360. (n.d.). *Total investment (% of GDP)*. World Bank.

Technicians in R&D (per million people). (n.d.). World Bank. Retrieved May 13, 2020, from https://data.worldbank.org/indicator/SP.POP.TECH.RD.P6

The Constitution of Hungary of 25th April 2011, (2011).

The Constitution of the Republic of Poland of 2nd April, 1997, Dziennik Ustaw No. 78, item 483 (1997). https://www.sejm.gov.pl/prawo/konst/polski/kon1.htm

The Economist Intelligence Unit. (2019). *Democracy Index 2019*.

The World Bank. (2020). *GINI index (World Bank estimate)*. https://data.worldbank.org/indicator/SI.POV.GINI

Thomas, M. A. (2010). What do the worldwide governance indicators measure. *European Journal of Development Research*, *22*(1), 31–54. https://doi.org/10.1057/ejdr.2009.32

Total Factor Productivity at Constant National Price. (n.d.). University of Groningen and University of California, Davis.

Transition Report 1994. (1994).

Transition Report 1996. (1996).

Transition Report 1997. (1997).

Transition report 1999. (1999).

Transition report 2000. (2000).

Transition report 2003. (2003).

Transition Report 2009. (2009).

Transition Report 2010. (2010).

Transition Report 2014. (2014).

Transparency International. (2020). *Corruption Perceptions Index*.

UNCTAD. (2012). *Extends ban on foreign farmland ownership*. https://investmentpolicy.unctad.org/investment-policy-monitor/measures/2334/extends-ban-on-foreign-farmland-ownership-

UNCTAD. (2018). *Hungary introduces national security review of foreign investments*. https://investmentpolicy.unctad.org/investment-policy-monitor/measures/3303/hungary-introduces-national-security-review-of-foreign-investments

UNCTAD. (2019). *World Investment Report: Special Economic Zones*. https://unctad.org/en/PublicationsLibrary/wir2019_en.pdf

Unemployment, total (% of total labor force) (national estimate). (n.d.). World Bank. Retrieved May 13, 2020, from https://data.worldbank.org/indicator/SL.UEM.TOTL.NE.ZS

University of Groningen and University of California. (2019). *Total Factor Productivity at Constant National Prices for Hungary [RTFPNAHUA632NRUG]*. https://fred.stlouisfed.org/series/RTFPNAHUA632NRUG

Vanham, P. (2019). *A brief history of globalization*. World Economic Forum.

WEF. (2019a). *Global Competitiveness Report 2019*. http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

WEF. (2019b). *Global Competitiveness Report 2019*.

WEF. (2020). *Reports*. https://www.weforum.org/reports

Wieś głosuje już tradycyjnie. I nie na PSL. A duże miasta? (2019). TVN24. https://tvn24.pl/wybory-parlamentarne-2019/wiadomosci-wyborcze,474/wybory-parlamentarne-2019-sondazowe-wyniki-jak-glosowano-na-wsi-i-w-miastach,977125.html

Winiecki, J. (2002). The Polish Generic Private Sector in Transition: Developments and Characteristics. *Europe-Asia Studies*, *54*(1).

World Bank. (2014a). *Electricity production from nuclear sources (% of total)*. https://data.worldbank.org/indicator/EG.ELC.NUCL.ZS?locations=HU

World Bank. (2014b). *Electricity production from oil, gas and coal sources (% of total)*. https://data.worldbank.org/indicator/EG.ELC.FOSL.ZS?locations=HU

World Bank. (2014c). *Electricity production from renewable sources, excluding hydroelectric (% of total)*. https://data.worldbank.org/indicator/EG.ELC.RNWX.ZS?locations=HU

World Bank. (2015a). *CO2 emissions (metric tons per capita)*. https://data.worldbank.org/indicator/EN.ATM.CO2E.PC?locations=HU-EU

World Bank. (2015b). *Electricity production from nuclear sources (% of total)*.

https://data.worldbank.org/indicator/EG.ELC.NUCL.ZS?end=2018&locations=HU&start=2009&view=chart&year=2018

World Bank. (2017a). *Adjusted savings: natural resources depletion (% of GNI)*. https://data.worldbank.org/indicator/NY.ADJ.DRES.GN.ZS

World Bank. (2017b). *PM2.5 air pollution, population exposed to levels exceeding WHO guideline value (% of total)*. https://data.worldbank.org/indicator/EN.ATM.PM25.MC.ZS?end=2017&locations=PL-HU&start=2002

World Bank. (2017c). *Total natural resources rents (% of GDP)*. https://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS?locations=HU-PL

World Bank. (2018). *Adjusted savings: natural resources depletion (% of GNI)*. https://data.worldbank.org/indicator/NY.ADJ.DRES.GN.ZS?end=2017&locations=HU-PL&start=2010

World Bank. (2019a). *Age dependency ratio (% of working-age population) - Hungary*. https://data.worldbank.org/indicator/SP.POP.DPND?locations=HU-

World Bank. (2019b). *GDP per capita growth (annual %)*. https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG?end=2018&locations=HU-PL-CZ-SK-EU&start=2010

World Bank. (2019c). *Inflation, GDP deflator (annual %)*. https://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG

World Bank. (2020a). *Bank nonperforming loans to total gross loans (%)*. https://data.worldbank.org/indicator/FB.AST.NPER.ZS?locations=HU

World Bank. (2020b). *Doing Business 2020*. https://doi.org/10.7256/1812-8688.2014.6.12196

World Bank. (2020c). *Government expenditure on education, total (% of GDP)*. https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS

World Bank. (2020d). *Gross fixed capital formation (% of GDP)*. https://data.worldbank.org/indicator/NE.GDI.FTOT.ZS?locations=HU&view=map&year=2018

World Bank. (2020e). *Gross fixed capital formation (current LCU)*. https://data.worldbank.org/indicator/NE.GDI.FTOT.CN?end=2018&locations=HU-EU&start=2009&view=chart&year=2018

World Bank. (2020f). *Trade (% of GDP)*. https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS

World Bank. (2020g). *Trade (% of GDP)*. https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?display=graph--%3E&end=2018&locations=HU&start=2008

World Bank. (2020h). *Worldwide Governance Indicators*. https://info.worldbank.org/governance/wgi/Home/Reports

World Bank Group. (2020a). *Doing Business: Measuring Business Regulations*. https://www.doingbusiness.org/en/doingbusiness

World Bank Group. (2020b). *Doing Business 2020: Economy Profile Hungary*.

Yale Center for Environmental Law & Policy, Center for International Earth Science Information Network, & WEF. (2018). 2018 Environmental Performance Index. In *2018 Environmental Perfomance Index*.

Zurawski, W. (2019). *Poland plans new coal mines despit EU's call for carbon neutrality*. Reuters. https://www.reuters.com/article/us-poland-energy/poland-plans-new-coal-mines-despite-eus-call-for-carbon-neutrality-idUSKBN1WA1EG

8 Acronyms & abbreviations

CEE	Central and Eastern European region
CF	Cohesion Fund
CIA	Central Intelligence Agency
CIT	Corporate Income Tax
COMECON	Council for Mutual Economic Assistance
CPI	Corruption Perception Index
DB	Doing Business Indicator
EAFRD	European Agricultural Fund for Rural Development
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECB	European Central Bank
EIU	Economist Intelligence Unit
EPI	Environmental Performance Index
EPP	European People's Party
ERDF	European Regional Development Fund
ESF	European Social Fund
ETUI	European Trade Union Institute
EU	European Union
Fidesz	Alliance of Young Democrats (Hungary)
FDI	Foreign Direct Investment
GCI	Global Competitiveness Index 4.0
GDP	Gross Domestic Product
GNI	Gross National Income
ICT	Information and Communication Technology
K	Fixed Capital
KDNP	Christian Democratic People's Party (Hungary)
L	Labour
LGBTQI	Lesbian, Gay, Bisexual, Transgender, Queer and Intersex life
MNB	Central Bank of Hungary

NAV	National Tax and Customs Administration of Hungary
OECD	Organization for Economic Co-operation and Development
P	Pollution
PIE	Politics, Institutions, Economy model
PiS	Law and Justice Party (Prawo i Sprawiedliwość)
PISA	Programme for International Student Assessment
Q	Quality of Labour
R	Natural Resources
R&D	Research and Development
SEZs	Special Economic Zones
SGI	Sustainable Governance Index
SME	Small and Medium Enterprises
T	Technology, quality of capital
TFP	Total Factor Productivity
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
VAT	Value Added Tax
V4	Visegrád Group: Czech Republic, Hungary, Poland, and Slovakia
WB	World Bank
WEF	World Economic Forum
WGI	Worldwide Governance Index
WTO	World Trade Organization

9 Appendices

Introduction

Appendix 01

GDP per capita growth (annual %) for European Union countries for the period of 2010-2018, based on World Bank data (World Bank, 2019b).

	2010	2011	2012	2013	2014	2015	2016	2017	**2018**
Ireland	1,3%	-0,1%	-0,2%	0,8%	7,8%	24,0%	2,5%	7,0%	7,1%
Latvia	-2,5%	8,2%	5,4%	3,4%	2,9%	4,1%	2,7%	4,7%	5,5%
Hungary	**0,9%**	**2,1%**	**-1,0%**	**2,2%**	**4,5%**	**4,1%**	**2,5%**	**4,6%**	**5,3%**
Poland	**3,9%**	**5,0%**	**1,6%**	**1,5%**	**3,4%**	**3,9%**	**3,1%**	**4,9%**	**5,1%**
Lithuania	3,6%	8,4%	5,2%	4,6%	4,4%	3,0%	3,9%	5,7%	5,1%
Romania	-3,3%	2,5%	2,5%	3,9%	3,8%	4,4%	5,4%	7,7%	4,6%
Estonia	2,9%	7,8%	3,5%	1,7%	3,3%	1,8%	2,6%	5,6%	4,5%
Slovenia	0,9%	0,7%	-2,8%	-1,2%	2,7%	2,1%	3,0%	4,8%	4,1%
Slovak Republic	5,6%	2,7%	1,7%	0,6%	2,7%	4,7%	2,0%	2,9%	3,9%
Bulgaria	2,0%	2,6%	0,6%	1,1%	2,4%	4,1%	4,7%	4,6%	3,8%
Croatia	-1,3%	0,0%	-1,9%	-0,3%	0,3%	3,3%	4,2%	4,4%	3,5%
Malta	3,0%	0,9%	1,9%	3,2%	6,6%	8,2%	3,3%	3,8%	3,3%
Cyprus	-1,3%	-2,1%	-4,3%	-5,6%	-0,2%	2,5%	4,3%	3,5%	2,7%
Czech Republic	2,0%	1,6%	-0,9%	-0,5%	2,6%	5,1%	2,3%	4,1%	2,7%
Portugal	1,7%	-1,6%	-3,7%	-0,4%	1,3%	2,2%	2,3%	3,8%	2,6%
Greece	-5,6%	-9,0%	-6,8%	-2,5%	1,4%	0,2%	0,2%	1,7%	2,2%
Spain	-0,3%	-1,2%	-3,0%	-1,1%	1,7%	3,9%	2,9%	2,6%	2,1%
Netherlands	0,8%	1,1%	-1,4%	-0,4%	1,1%	1,5%	1,6%	2,3%	2,0%
Austria	1,6%	2,6%	0,2%	-0,6%	-0,1%	-0,1%	1,0%	1,8%	1,8%
Denmark	1,4%	0,9%	-0,1%	0,5%	1,1%	1,6%	2,4%	1,4%	1,8%
France	1,4%	1,7%	-0,2%	0,1%	0,5%	0,7%	0,7%	2,3%	1,5%
Finland	2,7%	2,1%	-1,9%	-1,4%	-0,8%	0,2%	2,3%	2,8%	1,5%
Germany	4,3%	5,9%	0,2%	0,2%	1,8%	0,9%	1,4%	2,1%	1,2%
Luxembourg	3,0%	0,3%	-2,7%	1,3%	1,9%	1,9%	2,3%	-0,6%	1,2%
Belgium	1,9%	0,4%	0,1%	0,0%	1,1%	1,4%	1,0%	1,6%	1,0%
Sweden	5,3%	2,3%	-1,4%	0,2%	1,7%	3,3%	1,1%	1,0%	1,0%
Italy	1,4%	0,5%	-3,2%	-3,0%	-0,9%	0,9%	1,5%	1,9%	1,0%
United Kingdom	1,2%	0,7%	0,8%	1,5%	1,8%	1,5%	1,2%	1,2%	0,7%
European Union	-12,8%	2,0%	-0,9%	-0,3%	1,3%	2,1%	1,8%	2,6%	2,0%

Politics

Appendix P1

Percentage of employed persons by sector group in Poland 2016-2018, based on data from Statistics Poland (Statistics Poland, 2018b, 2019c).

	2016	2017	2018
Agriculture, forestry and fishing	15,6%	15,2%	14,9%
Mining and quarrying	0,9%	0,9%	0,9%
Manufacturing	17,5%	17,7%	17,6%
Electricity, gas, steam and air conditioning supply	0,8%	0,8%	0,8%
Water supply; sewerage, waste management and remediation activities	1,0%	1,0%	1,0%
Construction	5,7%	5,8%	6,1%
Wholesale and retail trade; repair of motor vehicles including motorcycles	15,0%	14,9%	14,8%
Transportation and storage	5,4%	5,6%	5,6%
Accommodation and catering	1,8%	1,9%	1,9%
Information and communication	2,2%	2,3%	2,4%
Financial and insurance activities	2,3%	2,2%	2,2%
Real estate activities	1,4%	1,4%	1,4%
Professional, scientific and technical activities	4,3%	4,3%	4,4%
Administrative and support services	3,6%	3,8%	3,6%
Public administration and defence; Compulsory social security	6,4%	6,2%	6,2%
Education	7,5%	7,5%	7,5%
Human health and social work activities	5,7%	5,6%	5,7%
Arts, entertainment and recreation	1,0%	1,0%	1,0%
Other service activities	1,9%	2,0%	2,0%

Appendix P2

Percentage of the amount of average Polish gross salary per sector in 2010-2018, based on data from Statistics Poland (*Data by Domains*, 2020b).

	2010	2011	2012	2013	2014	2015	2016	2017	2018

Agriculture, forestry and fishing	102%	107%	112%	109%	110%	111%	110%	107%	107%
Mining and quarrying	180%	nd	nd	nd	nd	nd	169%	164%	169%
Manufacturing	90%	91%	92%	93%	94%	94%	94%	96%	96%
Electricity, gas, steam and air conditioning supply	163%	nd	nd	nd	nd	nd	167%	164%	162%
Water supply; sewerage, waste management and remediation activities	100%	nd	nd	nd	nd	nd	98%	96%	94%
Construction	84%	85%	84%	82%	82%	82%	83%	83%	83%
Wholesale and retail trade; repair of motor vehicles including motorcycles	82%	82%	82%	82%	83%	84%	86%	87%	88%
Transportation and storage	92%	90%	90%	89%	89%	89%	88%	88%	87%
Accommodation and catering	63%	62%	62%	62%	63%	63%	65%	66%	65%
Information and communication	172%	172%	167%	168%	170%	171%	174%	174%	176%
Financial and insurance activities	167%	171%	170%	168%	164%	167%	164%	165%	164%
Real estate activities	105%	104%	105%	105%	104%	104%	104%	106%	103%
Professional, scientific and technical activities	126%	124%	124%	122%	122%	124%	124%	126%	128%
Administrative and support services	66%	68%	70%	70%	71%	73%	73%	74%	75%
Public administration and defence; Compulsory social security	129%	127%	124%	124%	123%	123%	124%	124%	121%
Education	105%	105%	106%	107%	106%	106%	103%	99%	98%
Human health and social work activities	97%	95%	93%	92%	92%	91%	93%	94%	96%
Arts, entertainment and recreation	91%	89%	88%	89%	89%	89%	90%	90%	89%
Other service activities	73%	71%	72%	79%	79%	78%	80%	77%	79%

Appendix P3

Percentage per sector in 2010-2018 of an average gross financial result of Polish non-financial enterprises in Poland employing more than 49 persons, based on data from Statistics Poland (*Data by Domains*, 2020b).

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Agriculture, forestry and fishing	nd	nd	nd	nd	nd	nd	nd	nd	nd
Mining and quarrying	343,2%	769,7%	363,0%	220,4%	172,6%	114,9%	161,1%	361,6%	275,2%
Manufacturing	37,1%	41,7%	39,6%	43,0%	44,5%	50,1%	56,1%	56,0%	57,4%
Electricity, gas, steam and air conditioning supply	389,2%	483,2%	382,5%	486,2%	570,5%	377,9%	466,0%	532,8%	406,9%
Water supply; sewerage, waste management and remediation activities	15,6%	14,8%	14,6%	26,6%	18,0%	19,5%	19,3%	17,6%	16,8%
Construction	19,9%	18,3%	16,0%	15,8%	20,6%	38,6%	26,4%	24,0%	30,6%
Wholesale and retail trade; repair of motor vehicles including motorcycles	28,4%	30,3%	27,1%	32,4%	37,5%	40,4%	45,7%	44,8%	50,5%
Transportation and storage	24,2%	26,4%	25,6%	27,0%	27,9%	33,4%	34,0%	37,3%	33,5%
Accommodation and catering	13,1%	17,0%	20,4%	15,0%	14,4%	22,5%	21,6%	25,9%	22,7%
Information and communication	145,7%	151,6%	119,1%	104,7%	89,2%	97,0%	97,4%	93,4%	85,1%
Financial and insurance activities	nd	nd	nd	nd	nd	nd	nd	nd	nd
Real estate activities	18,1%	18,1%	20,9%	24,6%	22,5%	22,1%	19,4%	31,0%	26,9%

Professional, scientific and technical activities	34,6%	38,1%	37,1%	39,6%	47,6%	36,6%	41,3%	42,2%	33,3%
Administrative and support services	11,2%	14,6%	13,1%	13,6%	15,9%	14,4%	13,8%	13,4%	15,2%
Public administration and defence; Compulsory social security	nd	nd	nd	nd	nd	nd	nd	nd	nd
Education	6,8%	5,2%	8,6%	4,9%	8,6%	7,3%	8,2%	6,8%	8,9%
Human health and social work activities	5,1%	4,7%	6,5%	8,1%	8,1%	9,1%	9,0%	8,9%	8,8%
Arts, entertainment and recreation	33,5%	37,4%	62,4%	55,1%	40,2%	53,5%	70,7%	74,0%	78,3%
Other service activities	14,3%	14,7%	15,8%	20,2%	30,6%	30,3%	31,0%	30,9%	35,5%

Appendix P4

Percentage of the amount of average Polish gross salary per region in 2010-2018, based on data from Statistics Poland (*Data by Domains*, 2020b).

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Dolnośląskie	99,6%	99,1%	99,2%	99,9%	101,0%	101,3%	102,2%	102,7%	102,1%
Kujawsko-pomorskie	85,6%	85,4%	85,9%	86,5%	86,7%	86,2%	86,5%	86,8%	86,3%
Lubelskie	90,6%	90,1%	90,7%	90,3%	90,4%	89,5%	89,5%	89,3%	88,5%
Lubuskie	85,5%	85,3%	85,9%	85,1%	86,0%	86,4%	87,4%	87,6%	87,8%
Łódzkie	89,3%	89,7%	90,5%	90,6%	90,5%	91,5%	91,6%	91,6%	91,9%
Małopolskie	92,2%	92,1%	92,4%	92,2%	92,3%	93,8%	94,8%	95,6%	96,3%
Mazowieckie	125,1%	124,7%	123,9%	123,4%	123,3%	122,9%	122,1%	121,8%	**122,0%**
Opolskie	91,4%	89,6%	89,9%	89,7%	90,7%	91,2%	91,5%	91,6%	90,6%
Podkarpackie	85,4%	84,8%	85,7%	86,0%	86,5%	86,3%	86,4%	86,0%	85,7%
Podlaskie	88,5%	88,2%	89,0%	89,0%	88,6%	88,4%	88,4%	89,1%	88,6%

Pomorskie	97,3%	97,4%	97,9%	98,3%	99,2%	98,6%	98,6%	98,3%	98,2%
Śląskie	102,6%	104,4%	102,8%	103,5%	102,3%	101,6%	100,2%	99,2%	99,9%
Świętokrzyskie	86,6%	86,4%	87,0%	86,5%	85,9%	86,4%	85,7%	86,5%	86,1%
Warmińsko-mazurskie	84,4%	84,1%	84,9%	84,9%	85,3%	85,1%	85,3%	85,0%	84,0%
Wielkopolskie	91,4%	91,1%	91,2%	91,2%	90,6%	90,7%	91,6%	91,9%	91,5%
Zachodniopomorskie	89,5%	89,3%	90,1%	90,2%	90,1%	90,3%	90,9%	90,8%	90,5%

Appendix P5

The average growth rate of monthly gross wage per sector in 2011-2018, based on data from Statistics Poland (*Data by Domains*, 2020b).

	The average growth rate of monthly gross wage 2011-2018
Total Poland	4,5%
Agriculture, forestry and fishing	5,1%
Mining and quarrying	nd
Manufacturing	5,3%
Electricity, gas, steam and air conditioning supply	nd
Water supply; sewerage, waste management and remediation activities	nd
Construction	4,4%
Wholesale and retail trade; repair of motor vehicles including motorcycles	5,5%
Transportation and storage	3,9%
Accommodation and catering	5,0%
Information and communication	4,8%
Financial and insurance activities	4,3%
Real estate activities	4,3%
Professional, scientific and technical activities	4,7%
Administrative and support services	6,2%
Public administration and defence; Compulsory social security	3,7%
Education	**3,6%**
Human health and social work activities	4,4%
Arts, entertainment and recreation	4,3%
Other service activities	5,6%

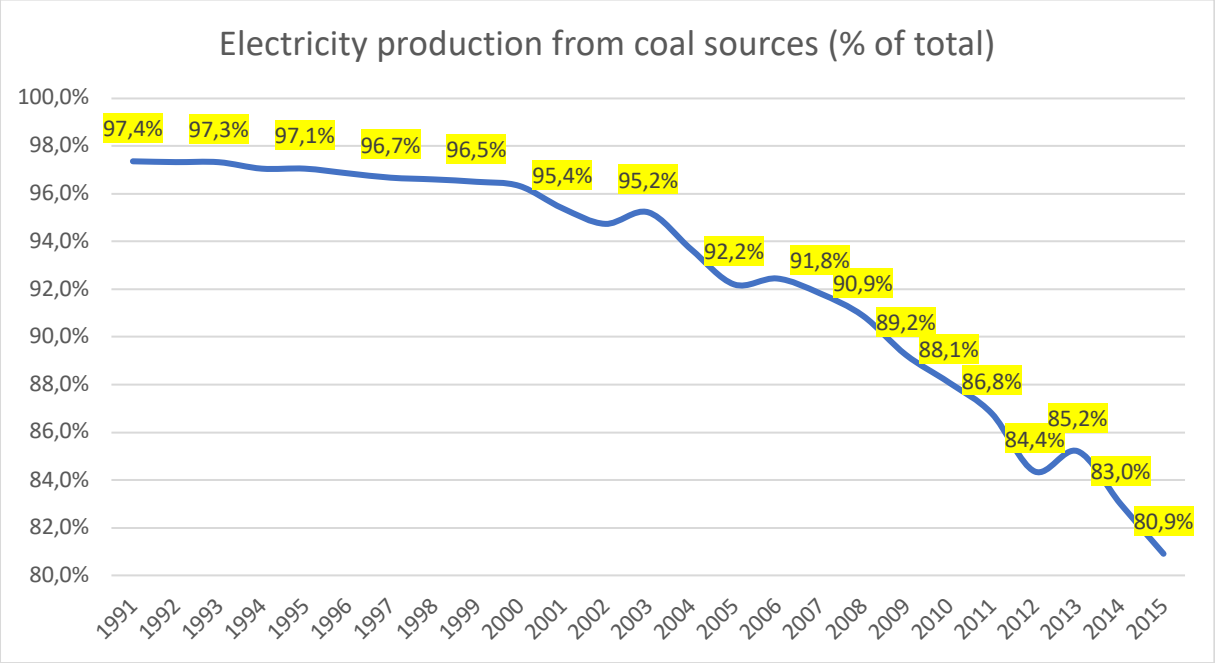
Appendix P6

Share of people in engaged in trade unions in all people employed per sector in 2018, based on Statistics Poland data (Statistics Poland, 2018c, 2019b, 2019d).

	No of people employed per sector	Share of people in trade unions per sector
All sectors	15949700	9,4%
Agriculture, forestry and fishing	2382900	1,4%
Mining and quarrying	138600	**90,9%**
Manufacturing	2811800	6,8%
Electricity, gas, steam and air conditioning supply and Water supply; sewerage, waste management and remediation activities	283300	11,6%
Construction	967000	2,5%
Wholesale and retail trade; repair of motor vehicles including motorcycles	2360900	1,6%
Transportation and storage	901000	16,1%
Information and communication	381600	2,0%
Professional, scientific and technical activities	707000	2,5%
Public administration and defence; Compulsory social security	988200	21,1%
Education	1189000	29,3%
Human health and social work activities	908900	20,5%
Arts, entertainment and recreation	157300	11,4%
Other service activities	322300	2,3%

Appendix P7

Electricity production from coal source (all coal and brown coal) as % of the total electricity production in Poland in 1991-2015. Based on data from World Bank (*Electricity Production from Coal Sources (% of Total) - European Union*, 2015).



Appendix P8

Average monthly available income per capita in PLN and household maintenance costs in PLN for 2010-2018, based on Statistics Poland and Institute of Labour and Social Studies data (IPiSS, 2020; Statistics Poland, 2018a).

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average monthly available income per capita PLN	1192,8	1227,0	1278,4	1299,1	1340,4	1386,2	1474,6	1598,1	1693,5
Household maintenance costs PLN	929,8	983,5	1026,9	1061,3	1071,0	1079,5	1098,2	1134,5	1168,3
Saving potential	22,1%	19,8%	19,7%	18,3%	20,1%	22,1%	25,5%	29,0%	31,0%

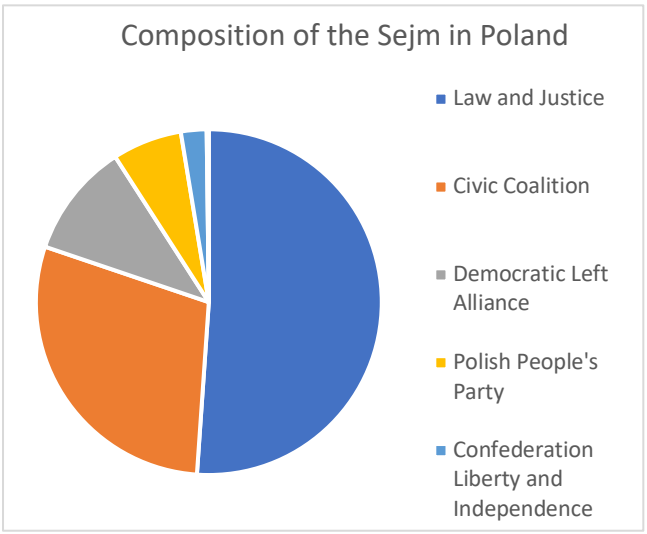
Appendix P9

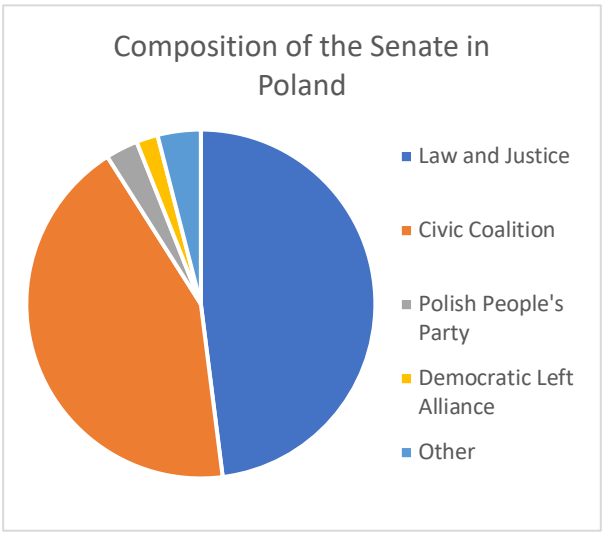
The 2019 Polish parliamentary elections based on National Electoral Commission's data (National Electoral Commission, 2019a, 2019b).

Sejm voting results

Committee	Political position	Per cent of votes	Per cent of mandates
Law and Justice	Right-wing	43,6%	51,1%
Civic Coalition	Centre	27,4%	29,1%
Democratic Left Alliance	Centre-left	12,6%	10,7%
Polish People's Party	Centre	8,6%	6,5%
Confederation Liberty and Independence	Right-wing	6,8%	2,4%
Other		1,1%	0,2%

Senate voting results			
Committee	Political position	Per cent of votes	Per cent of mandates
Law and Justice	Right-wing	44,6%	48,0%
Civic Coalition	Centre	35,7%	43,0%
Polish People's Party	Centre	5,7%	3,0%
Democratic Left Alliance	Centre-left	2,3%	2,0%
Other		11,8%	4,0%





Appendix P10

The 2015 Polish presidential elections based on National Electoral Commission's data (National Electoral Commission, 2015b, 2015c).

1st round	
Candidate	Percent of valid votes
Andrzej Sebastian Duda	34,8%
Bronisław Maria Komorowski	33,8%

Paweł Piotr Kukiz	20,8%
Janusz Ryszard Korwin-Mikke	3,3%
Magdalena Agnieszka Ogórek	2,4%
Adam Sebastian Jarubas	1,6%
Janusz Marian Palikot	1,4%
Grzegorz Michał Braun	0,8%
Marian Janusz Kowalski	0,5%
Jacek Wilk	0,5%
Paweł Jan Tanajno	0,2%
2nd round	
Andrzej Sebastian Duda	51,50%
Bronisław Maria Komorowski	48,50%

Appendix P11

The 2018 Polish Local Government Elections in Warsaw, based on National Electoral Commission's data (National Electoral Commission, 2018).

Local Government Elections 2018 - Warsaw				
Candidate	**Commitee**	**Political position**	**Number of votes**	**Percent of valid votes**
Rafał Kazimierz Trzaskowski	Civic Coalition	Centre	505 187	56,7%
Patryk Tomasz Jaki	Law and Justice	Right-wing	254 324	28,5%
Marek Jakubiak	Kukiz'15	Centre-right	26 660	3,0%
Jan Dawid Śpiewak	Wygra Warszawa	Left-wing	26 689	3,0%
Justyna Glusman	Miasto Jest Nasze	Left-wing	20 643	2,3%
Andrzej Tadeusz Rozenek	Democratic Left Alliance	Centre-left	13 370	1,5%
Janusz Ryszard Korwin-Mikke	KORWiN	Right-wing	11 516	1,3%
Jacek Piotr Wojciechowicz	Akcja Warszawa	Centre-left	9 002	1,0%
Other			23 987	2,7%

Appendix P12

Percentage of the net average earnings of full-time employees by economic branches based on data from 2019 (HUF) (Hungarian Central Statistical Office, 2020l)

	2019	**% of the net average earnings**
Economic branches together	244.609	100,0%
Agriculture, forestry and fishing	194.983	79,7%

Mining and quarrying	288.432	117,9%
Manufacturing	260.618	106,5%
Electricity, gas, steam and air conditioning supply	400.997	163,9%
Water supply; sewerage, waste management and remediation activities	228.474	93,4%
Construction	191.421	78,3%
Wholesale and retail trade; repair of motor vehicles and motorcycles	227.982	93,2%
Transportation and storage	229.486	93,8%
Accommodation and food service activities	159.324	65,1%
Information and communication	414.645	169,5%
Financial and insurance activities	442.478	180,9%
Real estate activities	207.727	84,9%
Professional, scientific and technical activities	337.601	138,0%
Administrative and support service activities	203.628	83,2%
Public administration and defense; compulsory social security	294.220	120,3%
Education	222.683	91,0%
Human health and social work activities	116.418	47,6%
Arts, entertainment and recreation	243.924	99,7%
Other service activities	203.330	83,1%

Appendix P13

Share of value-added of the national economy by sector, excluding Financial and insurance activities based on data for 2010-2017 (Hungarian Central Statistical Office, 2020d)

	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Mining and quarrying	0,3%	0,4%	0,4%	0,4%	0,3%	0,3%	0,2%	0,3%
Manufacturing	37,9%	38,8%	38,7%	38,5%	38,9%	39,4%	38,5%	37,9%
Electricity, gas, steam and air conditioning supply	5,6%	4,7%	4,8%	4,1%	3,8%	3,6%	3,8%	3,2%

Water supply; sewerage, waste management and remediation activities	2,0%	1,9%	1,9%	1,7%	1,4%	1,5%	1,5%	1,4%
Construction	5,2%	4,9%	4,7%	5,0%	5,4%	5,5%	4,5%	5,6%
Wholesale and retail trade; repair of motor vehicles and motorcycles	15,4%	15,9%	15,7%	16,4%	16,2%	16,5%	16,8%	16,7%
Transportation and storage	7,9%	8,3%	8,3%	8,8%	8,9%	8,8%	9,1%	8,5%
Accommodation and food service activities	1,6%	1,6%	1,6%	1,6%	1,7%	1,8%	2,0%	2,1%
Information and communication	8,6%	8,1%	8,4%	8,2%	7,9%	7,3%	7,4%	7,5%
Real estate activities	3,7%	3,8%	3,6%	3,4%	3,5%	3,3%	3,5%	3,4%
Professional, scientific and technical activities	6,7%	6,5%	6,7%	6,9%	7,0%	7,0%	7,2%	7,6%
Administrative and support service activities	4,9%	4,9%	4,8%	4,8%	4,8%	5,1%	5,4%	5,6%
Repair of computers and personal and household goods	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%

Appendix P14

Average monthly net earnings of full-time employees by the regions and its percentage of the total average based on data 2017 (HUF) (Hungarian Central Statistical Office, 2020j)

	2017	% of the country average
Budapest	249.961	129,7%
Pest	181.511	94,2%
Central Transdanubia	186.601	96,8%
Western Transdanubia	186.626	96,8%
Southern Transdanubia	162.459	84,3%
Northern Hungary	161.645	83,9%
Northern Great Plain	152.834	79,3%
Southern Great Plain	161.352	83,7%

Total (country level)	192.738	100,0%

Appendix P15

Employment (full-time) on a regional level and its distribution based on data 2017 (number of employees) (Hungarian Central Statistical Office, 2020i)

	2017	**% of the total**
Budapest	1.030.271	29,0%
Pest	377.758	10,6%
Central Transdanubia	357.090	10,0%
Western Transdanubia	349.206	9,8%
Southern Transdanubia	264.473	7,4%
Northern Hungary	337.919	9,5%
Northern Great Plain	442.339	12,4%
Southern Great Plain	393.607	11,1%
Total	3.554.509	100,0%

Appendix P16

Distribution of employment per sector in Hungary for 2018, based on data of the Hungarian Central Statistical Office (Hungarian Central Statistical Office, 2020m)

Sector	No. of employees (thousand people)	Distribution of the total employment
Agriculture, forestry and fishing	214,9	4,81%
Mining and quarrying	10,5	0,23%
Manufacturing	1.003,1	22,44%
Electricity, gas, steam and air conditioning supply	40,8	0,91%
Water supply, sewerage, waste management and remediation activities	58,9	1,32%
Construction	332,6	7,44%
Wholesale and retail trade; repair of motor vehicles and motorcycles	548,6	12,27%
Of which: retail trade	360,5	8,07%
Transporta- tion and storage	289,2	6,47%

Accommoda- tion and food service activities	180,1	4,03%
Information and communica- tion	116,3	2,60%
Financial and insurance activities	90,0	2,01%
Real estate activities	26,3	0,59%
Professional, scientific and technical activities	153,0	3,42%
Administrative and support service activities	149,6	3,35%
Public administration and defence; compulsory social security	424,2	9,49%
Education	343,8	7,69%
Human health and social work activities	306,1	6,85%
Arts, entertainment and recreation	79,0	1,77%
Other activities	102,6	2,29%
Total	4.469,5	100,00%

Appendix P17

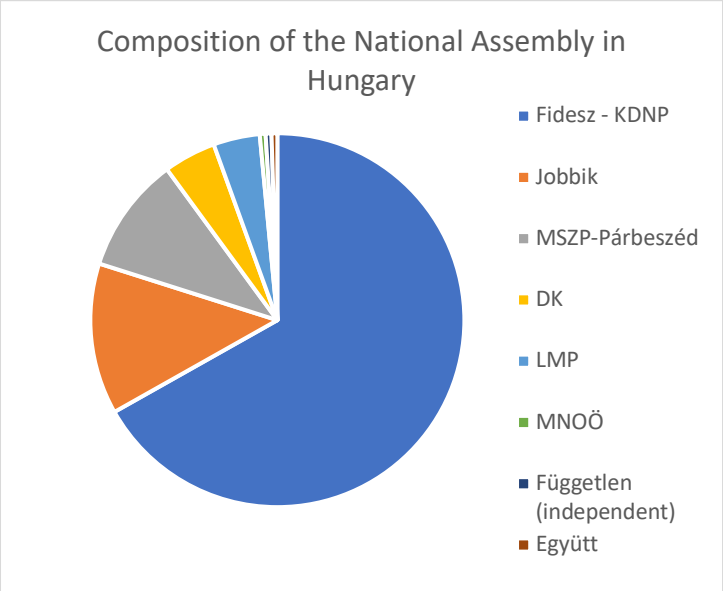
Distribution of the population in active age (15–64 years of age) by highest education completed and their distribution per region and Budapest (Hungarian Central Statistical Office, 2016)

		General (primary) school (the 8th grade) completed or less	Secondary level without final examination, with final vocational exam	Secondary level with final examination	University, college, etc. with degree	Distribution of educational attainment having at least secondary level with final examination
Country total	6.560.616	1.330.166	1.544.300	2.250.835	1.435.315	56,2%
Central Hungary		282.198	318.663	755.702	666.266	21,7%
Budapest		128.656	136.711	452.054	472.031	14,1%
Central Transdanubia		144.694	201.192	238.251	127.025	5,6%
Western Transdanubia		121.210	192.443	230.838	119.555	5,3%
Southern Transdanubia		138.924	165.836	189.348	100.341	4,4%
Northern Hungary		197.494	188.403	249.021	116.088	5,6%
Northern Great Plain		262.112	253.033	309.069	161.353	7,2%
Southern Great Plain		183.534	224.730	278.606	144.687	6,5%

Appendix P18

Composition of the Parliament, based on the 2018 parliamentary elections (National Election Office of Hungary, 2018)

	Number of seats	**% of the total**
Fidesz - KDNP	133	66,8%
Jobbik	26	13,1%
MSZP-Párbeszéd	20	10,1%
DK	9	4,5%
LMP	8	4,0%
MNOÖ	1	0,5%
Független (independent)	1	0,5%
Együtt	1	0,5%
Total	199	100,0%



Appendix P19

Results of parliamentary elections (National Election Office of Hungary, 2018)

Votes of nation-wide list	Number of votes	% of votes
Valid votes	5.732.283	100,0%
Fidesz-KDNP	2.824.551	49,3%

Jobbik	1.092.806	19,1%
MSZP-Párbeszéd	682.701	11,9%
DK	308.161	5,4%
LMP	404.429	7,1%
Momentum	175.229	3,1%
MKKP	99.414	1,7%
Együtt	37.562	0,7%
Munkáspárt	15.640	0,3%
CSP	10.641	0,2%
MIÉP	8.712	0,2%
SEM	7.309	0,1%
Tenni Akarás Mozgalom	5.312	0,1%
MCP	4.109	0,1%
Közös Nevező	3.894	0,1%
Szem Párt	3.048	0,1%
Kössz	2.722	0,0%
Iránytű	2.001	0,0%
Rend Párt	1.708	0,0%
Összefogás Párt	1.407	0,0%
Medete Párt	1.292	0,0%
NP	1.100	0,0%
EU.ROM	1.003	0,0%

Mandates of individual constituencies	Number of mandates	% of total mandates
Fidesz - KDNP	91	85,8%
Jobbik	1	0,9%
MSZP-Párbeszéd	8	7,5%
DK	3	2,8%
LMP	1	0,9%
Független (independent)	1	0,9%
Együtt	1	0,9%
Total	106	100,0%

Appendix P20

Results of municipal elections in the capital of Hungary, Budapest (National Election Office of Hungary, 2020)

Mayor election	Number of votes	% of votes
Momentum-DK-MSZP-Párbeszéd-LMP	353593	50,9%

FIDESZ-KDNP	306608	44,1%
Állampolgárok a Centrumban Egyesület	30972	4,5%
Független	4045	0,6%
Total	695218	100,0%

Institutions

Appendix I1

The ***Democracy Index*** provided by Economic Intelligence Unit for Poland and Hungary for 2012-2018. (The Economist Intelligence Unit, 2019)

The Index measures world democracy of 165 independent states and 2 territories and gives scores on a scale between 0-10. Type of regime is assigned according to the index value: greater than 8 – full democracy; greater than 6 and less than or equal to 8 – flawed democracy; greater than 4 and less than or equal to 6 – hybrid regime; less than or equal to 4 – authoritarian regime.

	Year	Overall Rank	Overall Score	Type of regime	Electoral process and pluralism	Functioning of government	Political participation	Political culture	Civil liberties
Poland	2019	57	6,7	Flawed democracy	9,2	6,1	6,1	4,4	7,7
	2018	54	6,6		9,2	6,1	6,1	4,4	7,4
	2017	53	6,7		9,2	6,1	6,1	4,4	7,7
	2016	52	6,8		9,2	5,7	6,7	4,4	8,2
	2015	48	7,1		9,6	5,7	6,7	4,4	9,1
	2014	40	7,5		9,6	5,7	6,7	6,3	9,1
	2013	44	7,1		9,6	6,4	6,1	4,4	9,1
	2012	44	7,1		9,6	6,4	6,1	4,4	9,1
Hungary	2019	55	6,6	Flawed democracy	8,8	6,1	5,0	6,3	7,1
	2018	57	6,6		8,8	6,1	5,0	6,3	7,1
	2017	56	6,6		8,8	6,1	4,4	6,9	7,1
	2016	56	6,7		9,2	6,1	4,4	6,9	7,1

	2015	54	6,8		9,2	6,1	4,4	6,9	7,7
	2014	51	6,9		9,2	6,1	4,4	6,9	7,9
	2013	49	7,0		9,2	6,1	4,4	6,9	8,2
	2012	49	7,0		9,2	6,1	4,4	6,9	8,2

Appendix I2

Quality of Democracy Indicator for Poland and Hungary for 2014 and 2019. Based on Sustainable Governance Indicators data (*Sustain. Gov. Indic.*, n.d.-a).

The indicator scores 41 countries from 1 (worst) to 10 (best) according to whether democratic institutions and practices are robust.

			Poland		**Hungary**	
			2014	**2019**	**2014**	**2019**
Quality of democracy	Overall score		8,4	5,1	5	3,4
	Electoral Processes	Overall score	8,8	6,6	5,6	3,8
		Candidacy procedures	8	8	8	6
		Media access	4	4	4	2
		Voting and Registration rights	7	8	7	3
		Party financing	3	7	3	3
		Popular decision-making	6	6	6	5
	Access to Information	Overall score	8,3	4,7	5	3
		Media freedom	4	3	4	2
		Media pluralism	5	5	5	3
		Access to Government Information	6	6	6	4
	Civil Rights and Political Liberties	Overall score	8,3	5,3	6	3,7
		Civil Rights	6	5	6	4
		Political Liberties	7	6	7	3
		Non-discrimination	5	5	5	4
	Rule of Law	Overall score	8	3,8	3,5	3
		Legal certainty	9	4	3	3
		Judicial review	5	4	5	4
		Appointment of justices	2	2	2	2
		Corruption	4	5	4	3

Appendix I3

Economic Policy indicator and Tax Policy indicator for Poland and Hungary for 2014 and 2019. Based on Sustainable Governance Indicators data (*Sustain. Gov. Indic.*, n.d.-b). The indicators score from 1 (worst) to 10 (best) according to:

- Economic Policy: whether the economic policy constitutes a favourable economic foundation and whether it fosters global competitiveness;
- Tax policy: whether the tax policy succeed in its equity goals, competitiveness and collecting sufficient public revenue;
- Tax system complexity: how complex the tax system is.
- Labor market: whether the labour policy addresses unemployment and whether it is balanced and successful;

	Poland		**Hungary**	
	2014	2019	2014	2019
Economic Policy	8.0	7.0	4.2	5.1
Tax Policy	6.0	6.0	3.0	4.0
Tax System Complexity	-	2.7	-	3.9
Labour Market	5.1	6.4	4.1	5.6

Appendix I4

Political Rights scores of Poland and Hungary for 2013-2020 based on Freedom in the World data provided by The Freedom House (*Freedom in the World*, 2020a).

The countries are scored on a scale from 0, representing the smallest degree of freedom, and 4 representing the greatest degree of freedom.

		Electoral Processes			
		Was the current head of government or other chief national authority elected through free and fair elections? (0-4)	Were the current national legislative representatives elected through free and fair elections? (0-4)	Are the electoral laws and framework fair, and are they implemented impartially by the relevant election management bodies? (0-4)	Total score (0-12)
Poland	2020	4	4	3	11
	2019	4	4	3	11
	2018	4	4	4	12
	2017	4	4	4	12
	2016	4	4	4	12
	2015	4	4	4	12
	2014	4	4	4	12
	2013	4	4	4	12
Hungary	2020	3	3	3	9
	2019	3	3	3	9
	2018	3	3	3	9
	2017	3	3	3	9
	2016	3	3	3	9
	2015	3	3	3	9
	2014	4	4	4	12
	2013	4	4	4	12

Political Pluralism and Participation

		Do the people have the right to organize in different political parties or other competitive political groupings of their choice, and is the system free of undue obstacles to the rise and fall of these competing parties or groupings? (0-4)	Is there a realistic opportunity for the opposition to increase its support or gain power through elections? (0-4)	Are the people's political choices free from domination by forces that are external to the political sphere, or by political forces that employ extrapolitical means? (0-4)	Do various segments of the population (including ethnic, religious, gender, LGBT, and other relevant groups) have full political rights and electoral opportunities? (0-4)	Total score (0-16)
Poland	2020	4	4	4	4	16
	2019	4	4	4	4	16
	2018	4	4	4	4	16
	2017	4	4	4	4	16
	2016	4	4	4	4	16
	2015	4	4	4	4	16
	2014	4	4	4	4	16
	2013	4	4	4	4	16
Hungary	2020	3	2	3	3	11
	2019	3	2	3	3	11
	2018	3	3	3	3	12
	2017	4	3	3	3	13
	2016	4	4	4	3	15
	2015	4	4	4	3	15
	2014	4	4	4	3	15
	2013	4	4	4	3	15

Functioning of Government

		Do the freely elected head of government and national legislative representatives determine the policies of the government? (0-4)	Are safeguards against official corruption strong and effective? (0-4)	Does the government operate with openness and transparency? (0-4)	Total score (0-12)
Poland	2020	3	3	2	8
	2019	3	3	2	8
	2018	3	3	2	8
	2017	4	3	2	9
	2016	4	3	3	10
	2015	4	3	3	10
	2014	4	3	3	10
	2013	4	3	3	10
Hungary	2020	3	2	2	7
	2019	3	2	2	7
	2018	3	2	2	7
	2017	3	2	2	7
	2016	3	3	2	8
	2015	3	3	2	8
	2014	4	3	2	9
	2013	4	3	2	9

Appendix I5

Civil Liberties scores of Poland and Hungary for 2013-2020 based on Freedom in the World data provided by The Freedom House (*Freedom in the World*, 2020b).

The countries are scored on a scale from 0, representing the smallest degree of freedom, and 4 representing the greatest degree of freedom.

Freedom of Expression and Belief

		Are there free and independent media? (0-4)	Are individuals free to practice and express their religious faith or non-belief in public and private? (0-4)	Is there academic freedom, and is the educational system free from extensive political indoctrination? (0-4)	Are individuals free to express their personal views on political or other sensitive topics without fear of surveillance or retribution? (0-4)	Total score (0-16)
Poland	2020	3	4	3	4	14
	2019	3	4	3	4	14
	2018	3	4	3	4	14
	2017	3	4	3	4	14
	2016	4	4	4	4	16
	2015	4	4	4	4	16
	2014	4	4	4	4	16
	2013	4	4	4	4	16
Hungary	2020	2	3	2	3	10
	2019	2	3	2	3	10
	2018	2	4	2	3	11
	2017	2	4	3	4	13
	2016	2	4	3	4	13
	2015	3	4	3	4	14
	2014	3	4	4	4	15
	2013	3	4	4	4	15

		Rule of Law				
		Is there an independent judiciary? (0-4)	Does due process prevail in civil and criminal matters? (0-4)	Is there protection from the illegitimate use of physical force and freedom from war and insurgencies? (0-4)	Do laws, policies, and practices guarantee equal treatment of various segments of the population? (0-4)	Total score (0-16)
Poland	2020	1	3	4	3	11
	2019	1	3	4	3	11

	2018	1	3	4	3	11
	2017	2	3	4	3	12
	2016	3	3	4	3	13
	2015	3	3	4	3	13
	2014	3	3	4	3	13
	2013	3	3	4	3	13
Hungary	2020	2	3	3	2	10
	2019	2	3	3	2	10
	2018	2	3	3	2	10
	2017	2	3	3	2	10
	2016	2	3	3	2	10
	2015	2	3	3	3	11
	2014	2	3	3	3	11
	2013	2	3	3	3	11

		Personal Autonomy and Individual Rights				
		Do individuals enjoy freedom of movement, including the ability to change their place of residence, employment, or education? (0-4)	Are individuals able to exercise the right to own property and establish private businesses without undue interference from state or nonstate actors? (0-4)	Do individuals enjoy personal social freedoms, including choice of marriage partner and size of family, protection from domestic violence, and control over appearance? (0-4)	Do individuals enjoy equality of opportunity and freedom from economic exploitation? (0-4)	Total score (0-16)
Poland	2020	4	4	3	3	14
	2019	4	4	3	3	14
	2018	4	4	3	3	14
	2017	4	4	3	3	14
	2016	4	4	3	3	14
	2015	4	4	3	3	14
	2014	4	4	3	3	14
	2013	4	4	3	3	14
Hungary	2020	4	3	3	3	13
	2019	4	3	3	3	13

	2018	4	3	3	3	13
	2017	4	3	3	3	13
	2016	4	3	3	3	13
	2015	4	4	3	3	14
	2014	4	4	3	3	14
	2013	4	4	3	3	14

Appendix I6

Transition indicator scores concerning Enterprises and Markets and Trade provided for 2014 for Poland and Hungary by European Bank for Reconstruction and Development (*Transition Report 2014*, 2014). The scores range from 1 (worst) to 4+ (best) and take into account + and – by adding/subtracting 0.33.

	Enterprises			**Markets and Trade**		
	Large-scale privatisation	Small-scale privatisation	Governance and enterprise restructuring	Price liberalization	Trade and foreign exchange system	Competition policy
Poland	4-	4+	4-	4+	4+	4-
Hungary	4	4+	4-	4	4	3+

Appendix I7

Transition indicator scores concerning Financial institutions provided for 2010 for Poland and Hungary by European Bank for Reconstruction and Development (EBRD, 2010). The scores range from 1 (worst) to 4+ (best) and take into account + and – by adding/subtracting 0.33.

Financial institutions

	Banking reform and interest rate liberalisation	Securities markets and non-bank financial institutions
Poland	4-	4
Hungary	4-	4

Appendix I8

Domestic credit to private sector as a percentage of GDP for Poland and Hungary for 2008-2018, based on World Bank Data (*Domestic Credit to Private Sector (% of GDP)*, n.d.).

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	47,3%	47,0%	48,7%	51,4%	50,1 %	51,1 %	52,3 %	53,6%	54,5%	52,5%	52,7%
Hungary	59,4%	59,9%	60,7%	58,7%	50,5 %	46,2 %	42,7 %	35,3%	33,7%	32,8%	32,9%

Appendix I9

Percentage of bank nonperforming loans to total gross loans in Poland and Hungary for 2008-2018, based on World Bank data (World Bank, 2020a).

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	2,8%	4,3%	4,9%	4,7%	5,2%	5,0%	4,8%	4,3%	4,0%	3,9%	3,9%
Hungary	3,2%	8,2%	10,0%	13,7%	16,0%	16,8 %	15,6 %	11,7%	7,4%	4,2%	2,5%

Appendix I10

Six dimensions of national culture scored from 1 (the lowest) to 100 (the highest) for Poland and Hungary for 2020, developed by Hostefe Insights (Hofstede Insights, 2020)

Based on the Hofstede Insights country analysis:

- Power Distance Index (PDI): 1 (not accepting) – 100 (fully accepting hierarchical order)
- Individualism versus Collectivism (IDV) – 1 (if total individualism) – 100 (total collectivism)
- Masculinity versus Femininity (MAS) – 1 (total femininity) – 100 (total masculinity)
- Uncertainty Avoidance Index (UAI) – 1 (taking uncertainty) – 100 (avoiding uncertainty)
- Long Term Orientation versus Short Term Normative Orientation (LTO) – 1 (short term orientation) – 100 (long term orientation)
- Indulgence versus Restraint (IVR) – 1 (controlling desires) – 100 (allowing desires)

	Power Distance Index	Individualism versus Collectivism	Masculinity versus Femininity	Uncertainty Avoidance Index	Long term versus short term normative orientation	Indulgence versus Restraint
Poland	68	60	64	93	38	29
Hungary	46	80	88	82	58	31

Appendix I11

Worldwide Governance Indicators for Poland and Hungary by World Bank for the period 2010-2018 (World Bank, 2020h)

The WGI classifies 214 countries, through the examination of 6 dimensions of good governance (Thomas, 2010). Thus ranking of the countries is based on percentile rank, which refers to the value the country would get if no error happens. Even though WGI considers both lower and upper bounds, for the sake of simplicity, through the thesis percentile ranks (between the bounds) are applied. Moreover, when countries are ranked, the best performing one gets 100 percentile rank, while the worst performing zero.

	Year	Voice and Accountability (VA)	Political Stability and Absence of Violence/Terrorism (PV)	Government Effectiveness (GE)	Regulatory Quality (RQ)	Rule of Law (RL)	Control of Corruption (CC)
Poland	2018	71,9	65,7	75,0	78,4	66,8	74,5

	2017	72,9	64,3	74,0	78,9	68,3	76,0
	2016	74,4	63,3	73,6	79,8	74,0	76,0
	2015	81,8	75,2	74,5	80,3	76,9	73,6
	2014	82,3	76,2	74,5	81,3	77,4	72,6
	2013	79,3	81,5	72,5	81,0	73,7	71,1
	2012	82,6	86,3	72,0	78,7	72,3	73,0
	2011	80,3	85,8	71,1	78,2	73,2	72,0
	2010	80,1	84,4	71,3	79,9	68,7	71,9
Hungary	2018	58,6	73,3	70,2	73,1	72,1	59,6
	2017	58,1	74,8	70,2	73,1	70,2	59,1
	2016	59,6	67,1	69,2	71,6	66,8	60,6
	2015	66,5	70,0	70,7	74,5	66,4	61,5
	2014	66,0	68,6	72,1	75,5	71,2	60,6
	2013	70,4	70,6	70,6	77,7	67,6	65,9
	2012	70,9	68,7	70,6	79,2	68,1	67,3
	2011	73,2	70,1	72,0	80,6	72,8	68,7
	2010	73,5	69,2	72,3	81,3	73,0	68,6

Appendix I12

World Press Freedom Index for Poland and Hungary for the period 2013-2019, data extracted from the World Bank website based on data of RSF (Reporters Without Borders, 2020c).

The index takes into consideration the degree of freedom in 180 countries, and focuses on the following criteria:

-Pluralism

-Media independence

-Environment and self-censorship

-Legislative framework

-Transparency

-Infrastructure

-Abuses

The index ranging from 0 to 100, where 0 denotes the best and 100 the worst possible score, then ranking and classifies the 180 examined countries.

Categories:

- Good situation: 0 - 15 points
- Satisfactory situation: 15.01 – 25 points
- Problematic situation: 25.01 – 35 points
- Difficult situation: 35.01 – 55 points
- Very serious situation: 55.01 – 100 points

	Year	Index	Situation	Rank
Poland	2019	28,89	Problematic	59
	2018	26,59	situation	58
	2017	26,47		54
	2016	n.d.	n.d.	50
	2015	23,89	Satisfactory situation	43
	2014	12,71	Good	13
	2013	11,03	situation	8
Hungary	2019	30,44	Problematic	87
	2018	29,11	situation	73
	2017	29,01		71
	2016	n.d.	n.d.	67
	2015	28,17	Problematic	63
	2014	27,44	situation	60
	2013	26,73		53

Appendix I13

Ease of Doing Business for Poland and Hungary for the period 2013-2019 by World Bank Group (World Bank Group, 2020a)

The report identifies the environmental setup through 11 areas of doing business in 190 countries. For the aim of the thesis, out of these areas, we only consider and interpret 8 out of the 11 indicators. The overall score gives an absolute level of a country; thus it means that even the overall best-performing country does not get a score of 100 and the same applied for the country having the least score. While, the sub-indicators' score is based on the respective country's level compared to the

best-performing country (that is set at the highest value - 100) in that area that is revised in every 3 years. The rank denotes the investigated country's performance relative to the other countries.

	Year	Overall ranking	Overall score	Protecting minority investors	Enforcing contracts	Starting a business	Registering property	Paying taxes	Trading across borders	Resolving Insolvency	Getting Credit
Poland	2019	40	76,4	66,0	64,4	82,9	63,9	76,4	100,0	76,5	75,0
	2018	33	76,9	61,7	64,4	82,9	76,1	76,5	100,0	76,5	75,0
	2017	27	77,3	61,7	63,4	82,8	76,5	79,4	100,0	77,7	75,0
	2016	24	77,8	63,3	63,4	84,2	76,5	82,7	100,0	76,4	75,0
	2015	25	76,5	60,0	63,4	85,9	75,7	79,6	100,0	70,4	75,0
	2014	32	73,6	62,5	64,8	85,8	80,3	73,5	81,8	69,7	75,0
	2013	45	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Hungary	2019	52	73,4	54,0	71,0	88,2	80,1	80,6	100,0	55,0	75,0
	2018	53	72,3	50,0	71,0	87,9	80,1	73,8	100,0	55,0	75,0
	2017	48	72,4	50,0	73,8	87,6	80,1	71,5	100,0	54,8	75,0
	2016	41	73,1	55,0	75,8	87,3	80,1	74,5	100,0	51,3	75,0
	2015	42	72,6	55,0	72,1	90,6	80,2	73,1	100,0	50,6	75,0
	2014	54	68,8	47,5	73,4	90,0	78,0	73,3	76,5	49,8	75,0
	2013	54	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

Appendix I14

Corruption Perception Index for Poland and Hungary, for the period 2012-2019 (Transparency International, 2020)

Since 2012, the index follows the same methodology that ranks 180 countries on a scale of 0 (highly corrupt) to 100 (very clean), based on their public sector's corruptive level.

	Year	Score
Poland	2019	58

	2018	60
	2017	60
	2016	62
	2015	63
	2014	61
	2013	60
	2012	58
Hungary	2019	44
	2018	46
	2017	45
	2016	48
	2015	51
	2014	54
	2013	54
	2012	55

Appendix I15

Global

Index 4.0 for Poland and Hungary for the period 2018-2019, for the sake of comparability, as indicators changed. Based on the data of the World Economic Forum (WEF, 2020).

The Global Competitiveness Index 4.0 is based on 12 pillars, from which we are using 6 during the analysis of the institutions. The score of pillars is based on a 0-100 scale, while the values of sub-indicators are ranged individually as stated by, where the upper bound denotes the best performance in that category.

		Poland				Hungary			
		2019		2018		2019		2018	
Pillar	Sub-indicator	Score	Value	Score	Value	Score	Value	Score	Value
Property rights		55,6				62,5			
	Property rights 1-7 (best)		4,1		3,9		4,0		3,8
	Intellectual property protection 1-7 (best)		4,1		4,0		4,1		4,0
	Quality of land administration 0-30 (best)		19,0		19,5		26,0		26,0
Corporate governance		61,4				55,7			
	Strength of auditing and accounting standards 1-7 (best)		4,7		4,7		5,0		4,8
	Conflict of interest regulation 0-10 (best)		6,0		6,0		4,0		4,0
	Shareholder governance 0-10 (best)		6,3		6,3		6,0		6,0
Domestic competition		56,8				44,9			
	Distortive effect of taxes and subsidies on competition 1–7 (best)		3,6		3,7		3,1		2,9
	Extent of market dominance 1–7 (best)		4,7		4,7		3,3		3,4
	Competition in services 1 -7 (best)		4,9		4,9		4,7		4,6
Depth		42,3				37,6			
	Domestic credit to private sector % GDP		53,5		53,5		34,4		37,6
	Financing of SMEs 1–7 (best)		3,9		3,9		4,0		4,0
	Venture capital availability 1–7 (best)		2,9		2,7		3,5		3,3
	Market capitalization % GDP		32,2		29,8		18,3		14,2
	Insurance premium volume to GDP		2,6		2,8		2,5		2,5
Stability		91,2				91,3			
	Soundness of banks 1-7 (best)		5,3		5,3		5,4		5,1
	Non-performing loans % of gross total loans		3,9		4,0		4,2		7,4
	Credit gap %		-6,6		-5,1		-10,1		-12,7
	Banks' regulatory capital ratio % of total risk-weighted assets		17,1		15,4		17,7		17,1
Trade openness		59,5				60,0			
	Prevalence of non-tariff barriers 1–7 (best)		4,4		4,4		4,4		4,4
	Trade tariffs %		1,1		1,1		1,1		1,1
	Complexity of tariffs 1–7 (best)		2,9		3,0		2,9		3,0
	Border clearance efficiency 1–5 (best)		3,3		3,3		3,4		3,4

Appendix I16

FDI Regulatory Restrictiveness Index for Poland and Hungary for 2010-2018, based on the OECD database (OECD, 2020h).

The index ranges from 0 to 1, where 0 means no restriction at all, 1 is the most restrictive. It is comprised of 4 types of restrictions:

- Foreign equity restrictions
- Screening and approval process
- Key foreign personnel
- Other restrictions

	Poland		Hungary		OECD average	
	2018	*2010*	*2018*	*2010*	*2018*	*2010*
Overall index	0,072	0,072	0,029	0,029	0,065	0,067
Foreign equity restrictions	0,056	0,056	0,027	0,027	0,065	0,039
Screening & approval process	0	0	0	0	0,065	0,016
Key foreign personnel	0,006	0,006	0	0	0,065	0,002
Other restrictions	0,010	0,010	0,001	0,001	0,065	0,010

FDI Regulatory Restrictiveness Index for Poland and Hungary per sector based on data from 2018. For the sake of readability only those sectors are listed where the index is different than zero.

	2018	
Sector	Poland	Hungary
Primary	0,050	0
Agriculture & Forestry	0,100	0
Agriculture	0,100	0
Forestry	0,100	0
Tertiary	0,125	0,057
Transport	0,092	0,167
Maritime	0,050	0,275
Air	0,225	0,225
Media	0,298	0
Radio & TV broadcasting	0,575	0
Other media	0,020	0

Communications	0,075	0
Fixed telecoms	0,075	0
Mobile telecoms	0,075	0
Financial services	0,003	0,005
Other finance	0,010	0,016
Real estate investment	0,900	0,450
Overall index	0,072	0,029

Appendix I17

Annual tax revenue from corporate income tax in million PLN between 2010-2019 and percentage growth rate of it between 2011-2019. Based on data from Statistics Poland (Statistics Poland, n.d.)

	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Tax revenue from corporate income tax in mln PLN	21769,9	24861,9	25145,7	23075,3	23266,2	25813,4	26381,4	29758,5	34640,9	40018,2
Percentage growth rate of tax revenue from corporate income tax	-	14,2%	1,1%	-8,2%	0,8%	10,9%	2,2%	12,8%	16,4%	15,5%

Appendix I18

Population of Poland by categories of religions – types and trends of religions in 2011, based on (Statistics Poland, 2019e).

Types of religion, religious trends, groups of denominations		Total	Percentage of total population	Percentage of people answering the question about the religion
Total		38511800	100	x
Answering the question about religion		35151400	91.3	100
Belonging to a religion		-	88,9	-
Christianity		**34202700**	**88,8**	97,3
	Catholicism	33782000	87,7	96,1
	Eastern Christianity (Orthodox Christianity)	157000	0,4	0,4
	Protestant and Protestant Tradition	122600	0,3	0,3
	the current of Bible Students	140000	0,4	0,4
	other Christian	1000	0	0
Islam		5100	0	0
Judaism		800	0	0
Buddhism		6000	0	0
Hinduism		900	0	0
Paganism and Neopaganism		900	0	0
Other religion		3900	0	0
Declarations which express attitude towards faith		1800	0	0
Not belonging to any religion		929400	**2,4**	2,6
Refusing to answer the question about religion		2733800	7,1	x
Not established		626600	1,6	x

Appendix I19

Distribution of religion based on the recent consensus in 2011 in Hungary (Hungarian Central Statistical Office, 2011)

Religion	Total	% of the total population

Catholic	3.871.922	39,0%
Roman Catholic	3.691.389	37,1%
Greek Catholic	179.176	1,8%
Orthodox	13.710	0,1%
Anglican	270	0,0%
Calvinistic	1.153.454	11,6%
Evangelist	215.093	2,2%
Judaism	10.965	0,1%
Islam	5.579	0,1%
Declarations which express attitude towards faith	13.385	0,1%
Other religion	147.997	1,5%
Not belonging to any religion	1.806.409	18,2%
Refusing to answer the question about religion	2.698.844	27,2%
Total	9.937.628	100,0%

Appendix I20

Tax revenue from different taxes of business entities and corporate income tax (CIT) with their percentage growth (previous year=100%) for 2010-2019, based on data from the Hungarian Statistical Office (Hungarian Central Statistical Office, 2020g).

	Tax revenue from different taxes of business entities	% growth rate of tax revenue from different taxes of business entities (previous year=100%)	Tax revenue from corporate income tax (CIT) (million HUF)	% growth rate of tax revenue from corporate income tax (CIT) (previous year=100%)
2010	1.125.798	-	323.370	-

2011	1.210.212	7,5%	316.620	-2,1%
2012	1.157.200	-4,4%	342.305	8,1%
2013	1.152.086	-0,4%	322.467	-5,8%
2014	1.305.055	13,3%	394.813	22,4%
2015	1.503.125	15,2%	548.843	39,0%
2016	1.593.204	6,0%	683.095	24,5%
2017	1.572.079	-1,3%	624.945	-8,5%
2018	1.431.932	-8,9%	380.435	-39,1%
2019	1.415.123	-1,2%	303.311	-20,3%

Appendix I21

Monthly minimum wages in HUF for Hungary 2010-2020, based on data of Hungarian Central Statistical Office (Hungarian Central Statistical Office, 2020b)

Year	Minimum wages	% of annual growth of minimum wages
2010	73.500	-
2011	78.000	106,1%
2012	93.000	119,2%
2013	98.000	105,4%
2014	101.500	103,6%
2015	105.000	103,4%
2016	111.000	105,7%
2017	127.500	114,9%
2018	138.000	108,2%
2019	149.000	108,0%
2020	161.000	108,1%

Guaranteed wage minimum in HUF for Hungary 2014-2020, based on data of the website of National Tax and Customs Administration of Hungary (NAV, 2020c)

Year	Guaranteed wage minimum	% of annual growth
2014	118.000	-
2015	122.000	103,4%
2016	129.000	105,7%
2017	161.000	124,8%
2018	180.500	112,1%
2019	195.000	108,0%
2020	210.600	108,0%

Economics

Appendix E1

Global Competitiveness Index 4.0 for Poland and Hungary for the period 2018-2019. Based on the data of the World Economic Forum (WEF, 2020).
The score of pillars and sub-categories is based on a 0-100 scale. The countries are ranked based on their scores among 141 countries.

		Poland				Hungary			
		2019		2018		2019		2018	
Pillar	*Sub-category*	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Skills		34	72,1	32	72,9	49	69,0	49	68,5
	Current workforce	38	65,2	n.d.	n.d.	54	61,4	n.d	n.d.
	Skills of current workforce	92	48,5	n.d.	n.d.	112	43,5	n.d.	n.d.
	Future workforce	34	79,0	n.d.	n.d.	43	76,6	n.d.	n.d.
	Skills of future workforce	46	66,7	n.d.	n.d.	41	69,2	n.d.	n.d.
Infrastructure		25	81,2	27	79,3	27	80,7	28	78,4
	Transport Infrastructure	25	67,8	n.d.	n.d.	30	66,0	n.d	n.d.
	Utility infrastructure (electricity, water supply)	37	94,5	n.d.	n.d.	29	95,3	n.d.	n.d.
ICT adoption	ICT adoption	51	65,4	68	54,4	54	64,2	51	61,0
Innovation capability		39	49,7	38	48,7	41	47,4	39	48,0
	Interaction and diversity	74	39,4	n.d.	n.d.	63	40,8	n.d.	n.d.

	Research and Development	31	52,2	n.d.	n.d.	35	48,6	n.d.	n.d.
	Commercialization	43	65,1	n.d.	n.d.	59	58,0	n.d.	n.d.

Patent applications and R&D expenditures for Poland and Hungary for 2017-2019

			Research and Development	
			Patent applications/million pop.	R&D expenditures % of GDP
Poland	2019	Rank	34	36
		Score	48,1	32,2
		Value	12,7	1,0
	2018	Rank	34	39
		Score	47,0	33,4
		Value	11,9	1,0
	2017	Rank	41	n.d.
		Score	n.d.	n.d.
		Value	10,5	n.d.
Hungary	2019	Rank	31	31
		Score	56,1	40,2
		Value	20,2	1,2
	2018	Rank	31	26
		Score	55,9	45,9
		Value	19,9	1,4
	2017	Rank	28	n.d.
		Score	n.d.	n.d.
		Value	24,7	n.d.

Appendix E2

PISA test results for Poland, Hungary compared to the results of the OECD average and the best performing EU country, based on the study in 2018 (OECD, 2018b)

The fields of measurements (Reading, Mathematics, Science) are investigated separately, then classifying the countries into levels based on their score points. Level 1 denotes the group of the worst-performing countries, level 6 the best performance, although maximum scores of the fields only reached level 4.

		Poland	Hungary	OECD average	Best EU country: Estonia
Reading	Score	512	476	487	523
	Level	3	2	3	3
Mathematics	Score	516	481	481	523
	Level	3	2	3	3
Science	Score	511	481	483	530
	Level	3	2	3	3

Appendix E3

Labour productivity and utilization for Poland, Hungary and the EU for 2010-2018

Labour productivity is measured as a growth in GDP per hour worked, while labour utilization as changes in hours worked per capita. Based on data from OECD (OECD, 2019b).

	Labour productivity								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	6,7%	4,7%	1,8%	1,6%	1,2%	1,9%	2,1%	4,8%	6,1%
Hungary	0,9%	2,6%	-1,5%	1,0%	-1,2%	1,7%	-2,3%	3,1%	3,8%
EU	2,9%	1,7%	0,5%	0,9%	0,6%	1,4%	0,5%	1,5%	0,9%
	Labour utilization								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	-2,95	0,27	-0,18	-0,15	2,11	1,99	1,00	0,19	-0,71
Hungary	0,02	-0,44	0,55	1,26	5,75	2,31	4,87	1,45	1,41
EU	-0,96	-0,09	-1,17	-0,85	0,87	0,69	1,26	0,86	0,85

Appendix E4

Adult education level; proportion measured amongst the population of 25-64 years old for Poland and Hungary for 2008-2018 (OECD, 2018a)

	Adult education as % of 25-64 years-old	
	Poland	Hungary

	% of Upper secondary	% of Tertiary	% of Upper secondary	% of Tertiary
2008	67,6	19,6	60,5	19,2
2009	66,8	21,2	60,7	19,9
2010	66,1	22,5	61,2	20,1
2011	65,6	23,3	60,6	21,1
2012	65,1	24,5	60,1	22,0
2013	64,4	25,8	60,0	22,5
2014	63,5	27,0	59,7	23,4
2015	63,0	27,7	59,0	24,2
2016	62,6	28,7	59,7	23,7
2017	62,2	29,9	60,0	24,1
2018	61,5	30,9	59,8	25,1

Appendix E5

Tertiary graduates by field as % of 25-64 years-old for Poland and Hungary, for the period of 2010-2017, based on OECD database (OECD, 2017)

Country	*Field*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Poland	Social sciences	n.d.	n.d.	n.d.	n.d.	11,8	10,6	10,5	9,9
	Education	n.d.	n.d.	n.d.	n.d.	n.d.	13,5	13,6	13,3
	Engineering	n.d.	n.d.	n.d.	n.d.	16,1	15,1	15,6	15,8
	Health	n.d.	n.d.	n.d.	n.d.	14,5	13,2	12,9	13,3
	Business	n.d.	n.d.	n.d.	n.d.	31,1	23,7	24,3	24,4
	Others	n.d.	n.d.	n.d.	n.d.	n.d.	23,9	23,2	23,3
Hungary	Social sciences	10,2	9,9	9,8	9,7	9,8	10,4	9,9	10,2
	Education	11,2	10,8	11,3	13,5	13,5	16,5	16,9	16,1
	Engineering	10,9	11,3	12,2	12,3	13,9	15,8	14,5	14,7
	Health	8,8	8,2	8,5	7,6	8,4	8,0	8,5	7,9
	Business	30,1	30,6	31,0	33,0	29,1	25,3	23,7	24,7
	Others	28,9	29,2	27,3	24,1	25,2	24,1	26,6	26,5

Appendix E6

Government expenditure on education as % of GDP for Poland and Hungary for the period of 2010-2016, based on the World Bank data (World Bank, 2020c)

The expenditure takes into consideration besides the general (thus central, regional, and local) governments' spending also the international fundings provided for the amelioration of education.

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*
Poland	5,1	4,8	4,8	4,9	4,9	4,8	4,6
Hungary	4,8	4,6	4,2	4,2	4,6	4,6	4,7

Appendix E7

Digital Economy and Society Index (DESI) for Poland and Hungary compared to the EU average for the period 2017-2019, from the European Commission website (European Commission, 2020c)

The index comprises of 5 indicators measuring the EU member states' digital preparedness and ranks the 28 countries. The indicators scaled between 0-100 and contributes tot he overall score with different weights based on the EU's priorities when it comes to digital policy (European Commission, 2019a).

	Year	Overall ranking	Overall score	Connectivity	Human Capital/Digital skills	Use of Internet Services by citizens	Integration of Digital Technology by businesses	Digital Public Services
EU average	2019	-	52,5	51,2	45,4	47,8	37,6	54,0
	2018	-	49,8	54,8	47,6	50,7	39,6	57,9
	2017	-	46,9	59,3	48,0	53,4	41,1	62,9
Poland	2019	25	41,6	43,5	34,5	37,7	20,9	45,4
	2018	25	38,8	49,3	36,2	40,9	22,6	45,2
	2017	25	36,1	51,9	36,8	43,9	24,8	52,5
Hungary	2019	23	45,4	51,9	41,2	45,4	23,7	35,0
	2018	23	43,2	55,6	42,5	46,5	26,2	42,8
	2017	23	40,1	60,4	42,1	48,0	25,4	49,8

Appendix E8

Gross fixed capital formation as % of GDP for Poland and Hungary for 2008-2018, based on the World Bank data (World Bank, 2020d)

It is composed of all investments such as plant, equipment or machinery, infrastructural projects, and land improvements measured as % of GDP.

	2008	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*

Poland	23,1	21,4	20,3	20,7	19,8	18,8	19,7	20,1	18,0	17,5	18,2
Hungary	23,4	22,7	20,2	19,7	19,3	20,8	22,1	22,3	19,7	22,2	25,2

Appendix E9

Transport infrastructure investment and maintenance spending in million EUR for Poland and Hungary, 2008-2018, based on OECD database (OECD, 2020k)

The amount includes infrastructure investment, maintenance, and capital value of the transport infrastructure. In case of Poland, there is no data available for inland waterway investments for the years of 2013, 2015-2018. In case of Hungary, the amount only covers investments by the state, and from 2010 it further covers Rail reconstruction and renovation design.

	2008	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Poland	1276,4	1885,9	1112,9	647,0	625,1	1023,9	1865,1	1949,0	1136,2	1836,6	2584,5
Hungary	5428,9	6012,7	7224,5	9277,7	4813,9	2727,6	1835,3	2511,2	3402,0	3719,9	3130,5

Appendix E10

Gross domestic spending on R&D as % of GDP for Poland and Hungary for 2008-2018, based on the OECD database (OECD, 2019a).

The spending on R&D covers all R&D related expenditures was undertaken by research institutions, companies, universities, and other laboratories, moreover, it also includes R&D financed from abroad.

	2008	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Poland	0,6	0,7	0,7	0,8	0,9	0,9	0,9	1,0	1,0	1,0	1,2
Hungary	1,0	1,1	1,1	1,2	1,3	1,4	1,4	1,4	1,2	1,3	1,5
OECD average	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,4	2,4
EU28 average	1,8	1,8	1,8	1,9	1,9	1,9	1,9	2,0	1,9	2,0	2,0

Appendix E11

Environmental Performance Index for Poland and Hungary for 2018, data based on the collaboration of Yale University, Columbia University, and World Economic Forum (Yale Center for Environmental Law & Policy et al., 2018).

The index ranks 180 countries focusing on two objectives (Environmental health counting for 40% of the total score and Ecosystem vitality 60%) and ten issues and scores them on a scale of 0 (worst) – 100 (best) examining their performance given the environmental policy goals.

Environmental health issues:

-Air quality
-Water Quality
-Heavy metals

Ecosystem vitality issues:

-Biodiversity and habitat
-Forests
-Fisheries
-Climate and energy
-Air pollution
-Water resources
-Agriculture

	Rank	*Overall score*	*Environmental health score*	*Ecosystem vitality score*
Poland	50	64,1	58,7	67,7
Hungary	43	65,0	57,7	69,9

Appendix E12

CO2 emissions (metric tons per capita) measured in 1990, 2000, 2010-2014 for Poland and Hungary based on the Wolrd Bank data (World Bank, 2015a).

	1990	*2000*	*2010*	*2011*	*2012*	*2013*	*2014*
Poland	9,7	7,8	8,3	8,3	7,9	8,0	7,5
Hungary	6,7	5,5	5,0	4,8	4,5	4,3	4,3

Appendix E13

Air pollution, population exposed to levels exceeding WHO guideline value (% of total) for Poland and Hungary for 1995, 2000, 2005, 2010-2017 based on World Bank data (World Bank, 2017b)

	1995	*2000*	*2005*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Poland	100	100	100	100	100	100	100	99,98	100	99,97	99,97
Hungary	100	100	100	100	100	100	100	100	100	100	100

Appendix E14

Investigation of the depletion of natural resources through the indicators of Total natural resources rents as % of GDP and the Adjusted savings: natural resources depletion as % of GNI for Poland and Hungary for 2010-2017, based on the World Bank data (World Bank, 2017c) (World Bank, 2017a).

Country	*Indicator Name*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Poland	Total natural resources rents (% of GDP)	1,6	2,0	1,5	1,1	0,9	0,9	0,8	1,0
	Adjusted savings: natural resources depletion (% of GNI)	0,5	0,6	0,5	0,4	0,4	0,3	0,3	0,4
Hungary	Total natural resources rents (% of GDP)	0,5	0,7	0,6	0,5	0,4	0,3	0,3	0,3
	Adjusted savings: natural resources depletion (% of GNI)	0,4	0,5	0,5	0,4	0,3	0,2	0,1	0,2

Appendix E15

GDP per capita growth (annual %) for Poland and Hungary for the period of 2000, 2010-2018, based on World Bank data (World Bank, 2019b).

The calculation of the growth % is based on GDP per capita on constant local currency.

	2000	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*

Poland	5,7	3,9	5,0	1,6	1,5	3,4	3,9	3,1	4,9	5,1
Hungary	4,8	0,9	2,1	-1,0	2,2	4,5	4,1	2,5	4,6	5,3

Appendix E16

Inflation, GDP deflator (annual %) for Poland and Hungary for the period of 2000, 2010-2018, based on World Bank data (World Bank, 2019c).

The calculation of the inflation is based on the GDP in current local currency compared tot he GDP in constant local currency.

	2000	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Poland	6,1	1,7	3,2	2,4	0,3	0,5	0,8	0,3	1,8	1,2
Hungary	9,6	2,4	2,2	3,2	3,0	3,6	2,5	1,0	3,7	4,5

Appendix E17

Current account balance in million USD for Poland and Hungary for the period 2010-2019, extracted from OECD database (OECD, 2020c)

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Poland	-25.768	-27.478	-18.566	-6.620	-11.265	-2.680	-2.449	379	-6.012	2.767
Hungary	392	835	2.033	4.681	1.651	2.907	5.825	3.319	19	-1.287

Current account balance on goods in million USD for Poland and Hungary for the period 2010-2019, extracted from OECD database (OECD, 2020a)

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Poland	-14.489	-18.497	-10.495	-426	-4.322	2.474	3.254	1.614	-5.641	2.698
Hungary	3.340	3.952	3.754	4.435	2.828	4.508	4.378	2.155	-2.024	-3.037

Current account balance on services in million USD for Poland and Hungary for the period 2010-2019, extracted from OECD database (OECD, 2020b)

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Poland	4.369	7.114	7.734	10.148	12.023	12.097	15.452	20.212	25.550	28.180
Hungary	3.612	4.687	4.938	5.037	6.092	5.443	6.777	8.158	9.083	8.954

Appendix E18

FDI inflow in million USD for Poland and Hungary for the period 2014-2018, data based on OECD report (OECD, 2020i).

	2014	*2015*	*2016*	*2017*	*2018*
Poland	14.269,8	15.268,0	15.706,8	9.172,4	13.948,2
Hungary	7.967,0	-14.544,6	-5.438,6	3.666,9	8.386,8

Appendix E19

FDI inflow and outflow as % of GDP for Poland and Hungary for the period 2008-2018, based on World Bank data (*Foreign Direct Investment, Net Inflows (% of GDP)*, n.d.; *Foreign Direct Investment, Net Outflows (% of GDP)*, n.d.)

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
	FDI net inflows as % of GDP										
Poland	2,7%	3,2%	3,8%	3,5%	1,5%	0,2%	3,6%	3,2%	3,9%	2,2%	2,9%
Hungary	47,5%	-2,1%	-15,8%	7,6%	8,4%	-2,6%	9,3%	-4,2%	54,6%	-8,5%	-41,5%
EU	5,1%	3,3%	3,7%	5,6%	3,9%	3,9%	2,7%	5,7%	5,1%	2,7%	0,1%
	FDI net outflow as % of GDP										
Poland	0,9%	1,3%	2,0%	0,9%	0,3%	-0,7%	1,2%	1,0%	2,9%	0,7%	0,3%
Hungary	46,6%	-2,9%	-18,8%	6,2%	6,2%	-2,9%	6,6%	-6,6%	52,3%	-10,3%	-43,5%
EU	7,3%	4,1%	4,5%	5,9%	4,1%	4,5%	3,6%	6,8%	5,6%	3,1%	0,8%

Appendix E20

FDI inflow per sector in million USD for Poland and Hungary for 2014-2018, data based on OECD report (OECD, 2020i).

	Poland				
	2014	*2015*	*2016*	*2017*	*2018*
Overall	14.269,8	15.268,0	15.706,9	9.172,4	13.948,1
Manufacturing	3.675,1	3.155,4	3.829,9	4.679,8	5.956,4
Agriculture, forestry, fishing	95,0	31,4	67,6	142,5	-22,5
Mining and quarrying	-563,2	-82,2	43,1	86,8	168,3
Electricity, gas etc	575,0	-71,5	-478,1	-1.382,1	260,3
Water supply and waste management	5,2	14,8	5,3	26,8	14,6
Construction	1.239,7	338,4	889,2	953,6	992,9
Services (including Finance and insurance)	9.174,4	11.629,4	12.067,6	5.310,5	7.262,1
Not allocated and confidential	68,6	252,3	-717,7	-645,5	-684,0
Private real estate activities	0,0	0,0	0,0	0,0	0,0

	Hungary				
	2014	*2015*	*2016*	*2017*	*2018*
Overall	7.967,0	-14.544,6	-5.438,7	3.666,9	8.387,2
Manufacturing	2.758,2	-13.886,7	16.552,9	1.350,5	3.259,0
Agriculture, forestry, fishing	68,6	45,3	10,5	42,8	-40,0
Mining and quarrying	14,6	-9,6	-19,0	0,7	86,8
Electricity, gas etc	-657,4	97,2	-243,1	-454,5	-515,3
Water supply and waste management	-38,2	-13,8	2,3	9,0	-1,9

Construction	-78,1	6,7	121,7	-27,6	101,0
Services (including Finance and insurance)	5.675,3	-1.037,7	-22.150,2	2.404,9	5.173,5
Not allocated and confidential	0,0	0,0	0,0	0,0	0,0
Private real estate activities	224,0	254,0	286,2	341,1	324,1

Appendix E21

Inward FDI stock per sector in million USD for Poland and Hungary based on the 2018 stance, data based on OECD report (OECD, 2020i).

	2018	
	Poland	Hungary
Overall	228.501,2	95.172,7
Manufacturing	71.669,4	37.470,6
Agriculture, forestry, fishing	1.100,9	588,1
Mining and quarrying	748,5	418,4
Electricity, gas etc	4.878,0	1.475,0
Water supply and waste management	482,6	79,8
Construction	11.996,2	1.137,2
Services (including Finance and insurance)	134.630,0	49.248,0
Not allocated and confidential	2.995,4	0,0
Private real estate activities	0,0	4.755,6

Appendix E22

Household savings for Poland and Hungary for 2010-2018 as % of household disposable income, based on OECD database (OECD, 2020e)

The net household saving is calculated and derived from the households' net disposable income, from which the households' consumption spendings are deducted and the final amount is measured as the percentage of the disposable income.

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Poland	2,39	-1,08	-1,1	-0,06	-0,35	-0,43	1,47	0,31	-0,96
Hungary	5,95	6,62	4,97	6,85	7,46	7,29	7,02	6,64	6,89

Appendix E23

Gross saving as a percentage of GDP measured as gross national income less total consumption plus net transfers for Poland, Hungary, and EU for 2008-2018. Based on data from World Bank (*Gross Savings (% of GDP)*, n.d.).

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Poland	18,1%	16,4%	15,7%	17,1%	16,8%	17,5%	18,0%	19,7%	19,4%	19,8%	19,6%
Hungary	17,6%	19,6%	20,9%	20,9%	20,9%	24,4%	24,6%	25,6%	26,0%	25,1%	26,6%
EU	22,0%	19,9%	20,5%	21,3%	20,8%	20,9%	21,5%	22,1%	22,4%	23,2%	23,3%

Appendix E24

Investment (gross capital formation) as a percentage of GDP measured as a total value of gross fixed capital formation and changes in inventories and acquisitions less disposals of valuables for Poland and Hungary for 2008-2018. Based on data from World Bank (TCdata360, n.d.).

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Poland	24,7%	20,6%	21,3%	22,4%	21,0%	19,0%	20,4%	20,5%	19,6%	19,7%	20,6%
Hungary	24,6%	20,2%	20,6%	20,3%	19,4%	20,9%	23,2%	22,4%	19,9%	22,5%	26,9%

Appendix E25

Employment in Industry, Agriculture and Services in Poland and Hungary for 1991-2019 as a percentage share in total employment. Based on data from World Bank (*Employment in Agriculture (% of Total Employment) (Modeled ILO Estimate)*, n.d.; *Employment in Industry (% of Total Employment) (Modeled ILO Estimate)*, n.d.; *Employment in Services (% of Total Employment) (Modeled ILO Estimate)*, n.d.).

Poland 1999-2019

	Employment in services	Employment in industry	Employment in agriculture
1999	49,3	31,2	19,5
2000	50,3	31,1	18,7
2001	50,1	30,7	19,2
2002	51,8	28,5	19,6
2003	53,3	28,5	18,2
2004	53,4	29,0	17,6
2005	53,4	29,2	17,4
2006	54,2	30,0	15,8
2007	54,5	30,7	14,7
2008	54,1	31,9	14,0
2009	55,6	31,1	13,3
2010	56,6	30,3	13,1
2011	56,4	30,7	12,9
2012	57,0	30,4	12,6
2013	57,5	30,5	12,0
2014	58,0	30,5	11,5
2015	57,9	30,5	11,5
2016	58,0	31,4	10,6
2017	58,1	31,7	10,2
2018	58,6	31,8	9,6
2019	58,8	31,9	9,2

Hungary 1999-2019

	Employment in services	Employment in industry	Employment in agriculture
1999	58,7	34,4	7,0
2000	59,8	33,8	6,5
2001	59,4	34,4	6,2
2002	59,7	34,1	6,1

2003	61,2	33,4	5,4
2004	61,8	32,9	5,3
2005	62,7	32,5	4,9
2006	62,9	32,3	4,8
2007	62,9	32,5	4,6
2008	63,5	32,2	4,3
2009	64,2	31,2	4,6
2010	64,8	30,7	4,5
2011	64,3	30,8	4,9
2012	65,1	29,8	5,1
2013	65,3	29,9	4,8
2014	64,8	30,5	4,7
2015	64,8	30,3	4,9
2016	64,5	30,4	5,0
2017	63,4	31,5	5,0
2018	62,7	32,4	4,8
2019	62,6	32,7	4,7

Appendix E26

Total Factor Productivity for Poland and Hungary for 2009-2017 in annual percentage change, by University of Groningen and University of California, based on the data retrieved from FRED, Federal Reserve Bank of St. Louis (*Total Factor Productivity at Constant National Price*, n.d.).

Measurement of TFP based on the inputs of the K, L and Q (Inklaar & Timmer, 2013):

- Capital: Investment
  Depreciation rate
  PPP
  Initial capital stock
  Capital measure
- Labour share
- Labour Employment
  Human capital

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Poland	-	3,19	2,48	-0,36	-0,37	-0,04	0,49	0,97	2,91
Hungary	-	0,61	1,16	-1,72	0,77	-0,03	1,06	-0,50	1,91

Appendix E27

Population in Poland 2008-2018 (number of people) and growth rate of the population between 2009-2018, based on data from Statistics Poland (*Data by Domains*, 2020a).

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
No of people in mln	38,14	38,17	38,53	38,54	38,53	38,50	38,48	38,44	38,43	38,43	38,41
Percentage growth rate	-	0,08%	0,95%	0,02%	-0,01%	-0,10%	-0,04%	-0,11%	-0,01%	0,00%	-0,06%

Appendix E28

Life expectancy at birth in Poland and Hungary 2008-2018 based on World Bank data (*Life Expectancy at Birth, Total (Years)*, n.d.)

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Poland	75,5	75,7	76,2	76,7	76,7	77,0	77,6	77,5	77,9	77,8	77,8
Hungary	73,7	73,9	74,2	74,9	75,1	75,6	75,8	75,6	76,1	75,8	75,8

Appendix E29

Labour force participation rate15-64 year-olds, % in the same age group, for Poland, Hungary and EU: 2008 – 2018, based on OECD data (*Labour Force Participation Rate*, n.d.)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	63,83	64,69	65,32	65,73	66,49	67,00	67,86	68,11	68,81	69,58	70,13
Hungary	61,20	61,23	61,92	62,37	63,71	64,70	66,98	68,64	70,13	71,16	71,94
EU	70,91	71,01	71,19	71,31	71,83	72,15	72,49	72,76	73,12	73,57	73,91

Appendix E30

Dependency ratio

The ratio of the number of people in non-working age to the number of people in working age, based on data from Statistics Poland (*Data by Domains*, 2020b)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	55,1	55,0	55,2	55,8	56,6	57,6	58,8	60,1	61,7	63,4	65,1

Appendix E31

Labour force participation in Poland calculated as economically active population at working age divided by the population at working age. Based on data from Statistics Poland (*Data by Domains*, 2020b)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total labour force participation	67,6%	68,5%	67,2%	67,8%	68,6%	69,1%	69,8%	70,1%	70,1%	70,5%	70,8%
Male labour force participation	72,0%	72,7%	71,4%	72,0%	72,5%	73,1%	73,6%	73,9%	73,9%	74,5%	74,5%
Female labour force participation	62,8%	64,0%	62,6%	63,2%	64,2%	64,8%	65,6%	65,9%	65,8%	66,0%	66,6%

Appendix E32

Gross fixed capital formation in the national economy in PLN, based on data from Statistics Poland (*Data by Domains*, 2020b). Calculated as domestic producers' acquisitions less disposals of fixed assets, with value additions to non-produced assets.

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017

Total in mln PLN	297042	294210	293168	324075	322452	311695	339387	361490	335011	348735
Percentage growth rate	-	-0,95%	-0,35%	10,54%	-0,50%	-3,34%	8,88%	6,51%	-7,32%	4,10%

Appendix E33

Gross value added per sector in Poland between 2008-2017, based on data from Statistics Poland (*Data by Domains*, 2020b).

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Agriculture, forestry and fishing	2,8%	2,7%	2,9%	3,2%	2,9%	3,1%	2,8%	2,4%	2,6%	3,1%
Mining and quarrying	2,0%	1,9%	2,0%	2,1%	2,0%	1,8%	1,7%	1,5%	1,4%	1,5%
Manufacturing	19,8%	19,2%	19,2%	19,8%	20,2%	19,8%	20,6%	21,6%	22,0%	21,0%
Electricity, gas, steam and air conditioning supply	2,4%	2,9%	2,9%	2,9%	3,1%	3,2%	3,1%	2,9%	2,7%	2,6%
Water supply; sewerage, waste management and remediation activities	1,0%	1,1%	1,1%	1,1%	1,1%	1,1%	1,1%	1,2%	1,2%	1,2%
Construction	8,1%	8,2%	8,4%	8,6%	8,0%	7,6%	7,8%	7,9%	7,2%	7,2%
Wholesale and retail trade; repair of motor vehicles including motorcycles	19,0%	19,7%	19,4%	18,7%	19,2%	19,2%	18,0%	17,8%	17,6%	17,8%

Transportation and storage	5,5%	5,6%	5,2%	5,3%	5,4%	5,6%	5,8%	6,0%	6,1%	6,3%
Accommodation and catering	1,1%	1,1%	1,1%	1,1%	1,1%	1,2%	1,2%	1,2%	1,2%	1,3%
Information and communication	3,6%	3,5%	3,5%	3,5%	3,6%	3,6%	3,7%	3,9%	3,9%	3,9%
Financial and insurance activities	4,3%	4,0%	4,2%	4,4%	4,1%	4,3%	4,6%	4,1%	4,4%	4,5%
Real estate activities	5,7%	5,3%	5,3%	5,2%	4,9%	4,9%	5,0%	4,7%	4,9%	4,6%
Professional, scientific and technical activities	5,5%	5,5%	5,2%	5,1%	5,0%	5,1%	5,3%	5,6%	5,5%	5,8%
Administrative and support services	1,6%	1,6%	1,7%	1,9%	2,0%	2,1%	2,1%	2,2%	2,3%	2,4%
Public administration and defence; Compulsory social security	6,1%	6,1%	6,1%	5,8%	5,7%	5,8%	5,7%	5,6%	5,6%	5,6%
Education	5,2%	5,3%	5,1%	5,0%	4,9%	4,9%	4,8%	4,8%	4,7%	4,5%
Human health and social work activities	4,1%	4,0%	4,3%	4,3%	4,1%	4,4%	4,4%	4,3%	4,4%	4,3%
Arts, entertainment and recreation	0,8%	0,8%	0,8%	0,7%	0,7%	0,7%	0,7%	0,7%	0,7%	0,7%
Other service activities	1,2%	1,2%	1,3%	1,2%	1,5%	1,5%	1,5%	1,5%	1,5%	1,4%
Households employing employees	0,3%	0,3%	0,2%	0,2%	0,2%	0,2%	0,1%	0,1%	0,1%	0,1%

Appendix E34

Gross value added per sector in Poland between 2008-2017, based on data from Statistics Poland (*Data by Domains*, 2020b).

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Information and Communication and Professional, scientific and technical activities % of GDP	9,1%	9,0%	8,7%	8,6%	8,6%	8,7%	9,0%	9,5%	9,4%	9,7%

Appendix E35

Percentage of total electricity production from oil, gas, coals sources and separately for coal sources; coal rents measured as different between value of coal production at world prices and the cost of production for Poland for 2005-2017, based on World Bank data (*Coal Rents (% of GDP)*, n.d.; *Electricity Production from Coal Sources (% of Total)*, n.d.; World Bank, 2014b).

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Electricity production from oil, gas and coal sources (% of total)	97.30	97.11	96.41	95.67	94.22	92.99	91.86	89.49	89.51	87.36	86.08	nd	nd
Electricity production from coal sources (% of total)	92.20	92.45	91.83	90.89	89.25	88.09	86.79	84.36	85.21	82.99	80.91	nd	nd
Coal rents (% of GDP)	0.67	0.61	0.51	1.47	0.53	0.78	0.95	0.48	0.20	0.18	0.21	0.23	0.27

Appendix E36

Interest rates Poland 2009-2019 based on data from International Financial Statistics, IMF (*Interest Rates*, n.d.)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Central Bank Policy Rate	3,50%	3,50%	4,50%	4,25%	2,50%	2,00%	1,50%	1,50%	1,50%	1,50%	1,50%
Refinancing Rate	6,17%	6,00%	6,75%	7,10%	5,58%	4,75%	3,58%	3,50%	3,50%	3,50%	3,50%
Money market rate	3,18%	3,08%	4,10%	4,66%	3,01%	2,48%	1,66%	1,55%	1,58%	1,53%	1,56%
Treasury Bill Rate	4,56%	3,93%	4,46%	4,51%	3,50%	nd	nd	1,34%	1,53%	nd	nd
Deposit rate, foreign currency	0,82%	0,45%	0,90%	0,46%	0,29%	0,27%	0,20%	0,15%	0,10%	0,09%	0,07%
Lending rate, foreign currency	3,99%	3,56%	3,70%	3,52%	2,81%	2,68%	2,01%	1,73%	1,90%	1,98%	2,00%
Government bonds	6,12%	5,78%	5,96%	5,00%	4,03%	3,52%	2,70%	3,04%	3,42%	3,20%	2,35%

Appendix E37

General government deficit, consolidated gross debt and state budget in Poland between 2010-2019, based on data from Statistics Poland and National Bank of Poland (*Macroeconomic Data Bank*, n.d.; *Statystyka Bilansu Płatniczego*, n.d.)

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Net borrowing of general government	mln PLN	-106906	-76454	-60966	-69290	-62729	-47090	-44162	-29200	-4933	-16828
	% GDP	-7,4%	-4,9%	-3,7%	-4,2%	-3,6%	-2,6%	-2,4%	-1,5%	-0,2%	-0,7%
General government consolidated gross debt	mln PLN	773280	853975	880944	928278	873776	923392	1009965	1007126	1035703	1045122
	% GDP	53,5%	54,5%	54,1%	56,0%	50,8%	51,3%	54,3%	50,6%	48,8%	46,0%
	% as an external debt	42,9%	46,7%	53,4%	50,0%	58,5%	57,6%	52,8%	50,6%	47,2%	41,9%
State budget revenue	mln PLN	250303	277557	287595	279151	283543	289137	314684	350415	380048	400575
State budget expenditure	mln PLN	294894	302682	318002	321345	312520	331743	360843	375769	390454	414241
Result (balance) of the state budget	mln PLN	-44591	-25124	-30407	-42194	-28977	-42607	-46160	-25354	-10406	-13666

Appendix E38

Composition of trade by sectors in Poland in 2018 (in current prices) (Statistics Poland, 2019f).

	Import	Export
Machinery and transport equipment	34,8%	37,3%
Manufactured goods classified chiefly by material	17,5%	18,7%
Miscellaneous manufactured articles	13,0%	17,2%
Chemicals and related products	13,6%	9,0%
Mineral fuels, lubricants and related materials	8,4%	2,5%
Food and live animals	7,0%	10,8%
Crude materials inedible, except fuels	3,1%	2,3%
Commodities and transaction not classified elsewhere in the SITC	1,6%	0,2%
Beverages and tobacco	0,7%	1,9%
Animal and vegetable oils, fats and waxes	0,3%	0,1%

Appendix E39

FPI net inflow (into debt instruments) to Poland between 2013-2018 in million PLN. Positive numbers indicate capital inflows to Poland, while negative ones the withdrawal of capital from the country. Based on National Bank of Poland's cyclical analytical materials (*Cykliczne Materiały Analityczne NBP*, n.d.).

	2013	**2014**	**2015**	**2016**	**2017**	**2018**
Agriculture, forestry and fishing	-34,3	124,3	142,3	94,8	556,3	-26,3
Mining and quarrying	59,7	-1 052,0	-152,6	101,7	89,7	583,1
Manufacturing	-3 665,9	-3 508,2	-1 844,6	1 778,3	-5 618,2	2 026,0
Electricity,Gas, Steam and Air Conditioning Supply	1 514,7	1 574,1	915,6	-964,6	-3 494,4	218,3

Water Supply; Sewerage, Waste Management and Remediation Activities	113,9	70,7	-19,0	-110,5	87,4	12,7
Construction	2 409,5	4 370,7	1 144,2	618,6	3 801,6	2 395,3
Wholesale and Retail Trade; Repair of Motor Vehicleas and Motorcycles	-663,9	-2 608,5	164,6	-302,0	-1 909,6	-439,5
Transportation and Storage	237,7	368,2	-1 039,8	-819,9	207,2	853,4
Accomodation and Food Service Activities	-173,6	-1,9	-102,5	-410,2	-84,6	112,6
Information and Communication	1 562,9	3 356,8	-336,2	8 471,9	1 229,3	-5 888,7
Financial and Insurance Activities	14 452,2	-2 810,5	930,9	1 738,3	7 580,5	-537,5
Real Estate Activities	708,7	2 998,1	5 021,0	1 891,1	2 100,4	-1 010,9
Professional, Scientific and Technical Activities	1 945,9	1 735,7	-361,4	2 567,9	-5 495,6	3 315,8
Administrative and Support Service Activities	-576,0	878,5	1 022,4	1 760,1	594,7	1 143,9
Education	-0,1	0,9	1,5	28,2	30,4	-15,9
Human Health and Social Work Activities	-844,2	104,0	2,2	68,2	76,2	-1 469,9
Arts, Entertainment and Recreation	146,8	172,1	92,9	262,3	233,4	400,3
Other Service Activities	-127,5	-57,8	6,6	-9,1	8,9	-30,7

Appendix E40

Technicians and researchers employed in R&D per million people, based on data from World Bank (*Researchers in R&D (per Million People)*, n.d.; *Technicians in R&D (per Million People)*, n.d.).

	2009	2010	2011	2012	2013	2014	2015	2016
Poland	1781,7	1968,4	2034,8	2173,3	2257,7	2502,6	2615,2	2720,6
Hungary	2569,5	2750,9	2983,6	3125,4	3334,0	3370,3	3316,5	3286,8
European Union	4180,8	4261,6	4438,6	4534,3	4644,0	4709,0	4901,9	nd

Appendix E41

Hungary's population (in million) and annual population growth for 2008-2018, based on data of Eurostat (Eurostat, 2020d).

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Population	10,05	10,03	10,01	9,99	9,93	9,91	9,88	9,86	9,83	9,80	9,78
% annual growth	-	-0,001	-0,002	-0,003	-0,005	-0,002	-0,003	-0,002	-0,003	-0,003	-0,002

Appendix E42

Dependency ratio in Hungary for 2008-2018, based on the World Bank data (World Bank, 2019a)
The ratio examines the number in non-working age to the number of working / active population.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Hungary	45,2	45,0	44,8	45,1	45,3	45,7	46,2	46,9	47,9	49,1	50,5

Appendix E43

Labour force participation and distribution of labour force participation between males and females in Hungary for 2008-2018, data extracted from the website of the Hungarian Central Statistical Office (Hungarian Central Statistical Office, 2020a).
Labour force participation shows the ratio of the economically active population at working age (15-64) divided by the population at working age for both genders and altogether.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	61,2	61,2	61,9	62,4	63,7	64,7	67,0	68,6	70,1	71,2	71,9
Male	68,0	67,7	67,8	68,4	69,6	71,0	73,4	75,3	76,9	78,2	79,1
Female	54,7	55,0	56,3	56,6	58,0	58,6	60,7	62,2	63,5	64,2	64,9

Appendix E44

R&D expenditure in million HUF and headcount in Hungary for 2010-2018, based on data of the Hungarian Central Statistical Office (Hungarian Central Statistical Office, 2020k)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
R&D staff	53.991	55.386	56.486	58.237	57.185	56.235	54.636	60.932	66.433
R&D expenditure (million HUF)	310.211	336.537	363.683	420.100	441.092	468.390	427.192	517.258	654.163

Appendix E45

Share of value-added of the national economy by sector, excluding Financial and insurance activities based on data for 2010-2017 (Hungarian Central Statistical Office, 2020d)

	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Mining and quarrying	0,3%	0,4%	0,4%	0,4%	0,3%	0,3%	0,2%	0,3%
Manufacturing	37,9%	38,8%	38,7%	38,5%	38,9%	39,4%	38,5%	37,9%
Electricity, gas, steam and air conditioning supply	5,6%	4,7%	4,8%	4,1%	3,8%	3,6%	3,8%	3,2%
Water supply; sewerage, waste management and remediation activities	2,0%	1,9%	1,9%	1,7%	1,4%	1,5%	1,5%	1,4%
Construction	5,2%	4,9%	4,7%	5,0%	5,4%	5,5%	4,5%	5,6%
Wholesale and retail trade; repair of motor vehicles and motorcycles	15,4%	15,9%	15,7%	16,4%	16,2%	16,5%	16,8%	16,7%
Transportation and storage	7,9%	8,3%	8,3%	8,8%	8,9%	8,8%	9,1%	8,5%
Accommodation and food service activities	1,6%	1,6%	1,6%	1,6%	1,7%	1,8%	2,0%	2,1%
Information and communication	8,6%	8,1%	8,4%	8,2%	7,9%	7,3%	7,4%	7,5%
Real estate activities		3,8%	3,6%	3,4%	3,5%	3,3%	3,5%	3,4%

Professional, scientific and technical activities	6,7%	6,5%	6,7%	6,9%	7,0%	7,0%	7,2%	7,6%
Administrative and support service activities	4,9%	4,9%	4,8%	4,8%	4,8%	5,1%	5,4%	5,6%
Repair of computers and personal and household goods	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%

	2010	2011	2012	2013	2014	2015	2016	2017
Information and communication and Professional, scientific and technical activities	15,3%	14,6%	15,1%	15,1%	14,9%	14,3%	14,6%	15,1%

Appendix E46

Interest rates in Hungary for 2009-2019 based on data of International Financial Statistics, extracted from the database of IMF (IFS, 2020)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Central Bank Policy Rate	6,3	5,8	7,0	5,8	3,0	2,1	1,4	0,9	0,9	0,9	0,9
Treasury Bill Rate	8,5	5,4	6,0	6,9	4,2	2,2	1,2	0,7	0,0	0,0	0,0
Deposit Rate	8,1	4,9	5,5	6,3	3,8	1,8	1,1	0,6	0,1	0,1	0,1
Lending Rate	11,0	7,6	8,3	9,0	6,3	4,4	2,9	2,1	1,5	1,5	1,8
Government Bonds	9,1	7,3	7,6	7,9	5,9	4,8	3,4	3,1	3,0	3,1	2,5

Appendix E47

General government deficit, revenue, expenditures and gross debt in Hungary for 2010-2019, based on data extracted from OECD, Eurostat website (OECD, 2020d) (Eurostat, 2020a) (Eurostat, 2020b)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
State deficit (% of GDP)	-4,5	-5,2	-2,3	-2,6	-2,8	-2,0	-1,8	-2,5	-2,1	-2,0
General government revenue	44,7	44,1	47,0	47,6	47,4	48,6	45,4	44,5	44,5	44,0

(% of GDP)										
General government expenditure (% of GDP)	49,2	49,4	49,4	50,2	50,2	50,6	47,2	47,0	46,7	46,1
General government gross debt (% of GDP)	80,6	80,8	78,6	77,4	76,8	76,2	75,5	72,9	70,2	66,3
General government gross debt (in million EUR)	79.114,5	72.881,6	77.530,7	78.882,3	79.575,8	83.833,8	87.470,1	91.231,6	93.347,4	93.910,9

Appendix E48

Trade as % of GDP for Hungary for 2008-2018, based on the World Bank data (World Bank, 2020g)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Trade	158,2	144,8	158,2	167,1	165,9	164,2	168,5	168,0	165,6	167,0	165,5

Appendix E49

Main trading partners for Hungary in 2019, based on data of the Hungarian Central Statistical Office (Hungarian Central Statistical Office, 2020e). The table only includes partner countries where its ratio of export-import is higher than 2% of Hungary's overall activities.

	Import activities	Export activities
Europe	**82,2%**	**89,9%**
Austria	6,1%	4,6%
Belgium	2,4%	2,5%
Czech Republic	4,9%	4,2%
France	3,6%	4,3%
Germany	25,3%	27,7%
Italy	4,3%	5,2%
Netherlands	5,1%	3,5%
Poland	5,8%	4,3%
Russia	3,8%	1,7%
Slovakia	4,9%	5,2%

Asia	**14,9%**	**4,6%**
China	6,1%	1,4%
Republic of Korea	2,6%	0,3%
America	**2,5%**	**4,2%**
United States	2,1%	2,8%

Appendix E50

Export activities per sector in million HUF and its distribution based 2018 data from the Hungarian Central Statistical Office (Hungarian Central Statistical Office, 2020f).

	Agriculture, forestry and fishing	Manufacturing	Mining and quarrying, electricity, gas, steam and air conditioning supply, Water supply, sewerage, waste management and remediation activities	Wholesale and retail trade and motor vehicles and motorcycles	Other and unknown activities	**Total**
Export (in million HUF)	171.539	20.299.857	162.334	11.720.659	1.054.693	**33.409.082**
Distibution between exporting sectors	0,5%	60,8%	0,5%	35,1%	3,2%	**100,00%**

Appendix E51

Unemployment rate in Hungary on a regional level 2009-2019, data extracted from the website of the Hungarian Central Statistical Office (Hungarian Central Statistical Office, 2020h)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Budapest	6,1	9,0	9,6	9,6	8,5	6,0	5,1	4,3	2,9	3,1	2,5
Pest	7,2	8,8	7,9	9,3	9,1	6,5	5,7	3,1	2,6	2,2	2,4
Central Transdanubia	9,2	10,0	9,5	9,9	8,7	5,6	4,4	3,0	2,2	2,2	2,0
Western Transdanubia	8,7	9,3	7,3	7,5	7,7	4,6	3,8	2,7	2,4	2,0	1,8

Southern Transdanubia	11,2	12,4	12,9	12,1	9,3	7,8	8,1	6,2	6,3	5,6	4,8
Northern Hungary	15,3	16,2	16,4	16,1	12,6	10,4	8,7	6,3	5,8	4,7	4,5
Northern Great Plain	14,1	14,4	14,6	13,9	14,2	11,8	10,9	9,3	7,4	6,6	6,3
Southern Great Plain	10,6	10,4	10,5	10,3	11,0	9,0	7,9	5,6	4,1	3,3	3,5
Total	**10,0**	**11,2**	**11,0**	**11,0**	**10,2**	**7,7**	**6,8**	**5,1**	**4,2**	**3,7**	**3,4**

Appendix E52

Real wage growth (in gross term) in Hungary 2009-2019, based on data of the Hungarian Central statistical office (Hungarian Central Statistical Office, 2020c)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Real wage growth	-	-3,4%	1,3%	-0,9%	1,7%	3,2%	4,4%	5,7%	10,3%	8,3%	7,7%

Appendix E53

Gross fixed capital formation in billion HUF for Hungary 2008-2018, based on the World Bank data (World Bank, 2020e)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gross capital formation (in billion HUF)	6361,2	6004,2	5516,1	5575,6	5552,8	6312,0	7224,9	7749,7	7058,4	8631,6	10739,3

Appendix E54

Utilization of nuclear power for electricity production in Hungary for 2010-2015, based on the World Bank data (World Bank, 2015b)

	2010	2011	2012	2013	2014	2015
Utilization of nuclear power (% of total)	42,2	43,5	45,6	50,7	53,2	52,2

Appendix E55

Poland's trade divided between countries and merchandise and services in 2018. Based on Statistics Poland data (*Eksport Towarów i Usług Według Krajów*, n.d.-a; *Import Towarów i Usług Według Krajów*, n.d.-a).

	% of all merchandise import	% of all services import	% of all merchandise export	% of all services export
Austria	1,7%	3,1%	2,0%	2,1%
Belgium	2,5%	2,5%	2,3%	2,6%
Bulgaria	0,3%	0,7%	0,5%	0,3%
Croatia	0,1%	0,0%	0,4%	0,1%
Republic of Cyprus	0,0%	1,1%	0,1%	0,4%
Czech Republic	3,4%	5,0%	6,4%	3,2%
Denmark	1,1%	2,1%	1,7%	2,6%
Estonia	0,1%	0,4%	0,5%	0,3%
Finland	0,8%	0,8%	0,8%	1,6%
France	3,7%	5,7%	5,6%	4,3%
Germany	22,6%	22,2%	28,2%	24,6%
Greece	0,2%	0,0%	0,4%	0,2%
Hungary	1,6%	1,2%	2,7%	1,1%
Ireland	0,6%	4,7%	0,4%	2,6%
Italy	5,1%	4,1%	4,6%	2,2%
Latvia	0,2%	0,3%	0,6%	0,4%
Lithuania	0,8%	1,1%	1,5%	1,2%
Luxembourg	0,2%	1,3%	0,2%	2,1%
Malta	0,0%	0,3%	0,0%	0,2%
Netherlands	3,6%	5,7%	4,5%	7,4%
Portugal	0,4%	0,5%	0,4%	0,3%
Romania	0,9%	0,8%	2,0%	0,7%
Slovakia	1,8%	2,1%	2,6%	1,6%
Slovenia	0,4%	0,2%	0,4%	0,2%

Spain	2,2%	2,4%	2,6%	1,3%
Sweden	1,8%	2,7%	2,8%	3,7%
Great Britain	2,4%	8,4%	6,2%	8,1%
European Union in total	58,7%	79,6%	80,6%	75,2%

Appendix E56

FDI inflows in million PLN million in Poland in 2018 broken down by countries.

FDI inflows were measured as a sum of net FDI concerning forms of equity participation and reinvestments of earnings. Based on National Bank of Poland's data (*Cykliczne Materiały Analityczne NBP*, n.d.).

Country	Equity and reinvestment of earnings in mln PLN
Total World	48 929,2
Netherlands	17 533,6
Germany	7 575,4
Malta	5 604,4
Luxembourg	5 490,1
France	4 233,2
Cyprus	3 294,6
Spain	3 100,5
Switzerland	2 744,0
United Kingdom	1 954,4
Finland	860,5
Norway	704,4
Czech Republic	615,3
Belgium	482,9
Denmark	398,1
Italy	388,1
Korea, Republic of (South Korea)	387,6
Portugal	361,7
Lithuania	354,4
Slovakia	329,7

Appendix E57

FDI inflows in million PLN million in Poland between 2013-2018 broken down by sector.

FDI inflows were measured as a sum of net FDI concerning forms of equity participation and reinvestments of earnings. Positive numbers indicate capital inflows to Poland, while negative ones the withdrawal of capital from the country. Based on National Bank of Poland's data (*Cykliczne Materiały Analityczne NBP*, n.d.).

	2013	**2014**	**2015**	**2016**	**2017**	**2018**
Agriculture, forestry and fishing	283,1	175,3	-23,9	171,7	-17,5	-55
Mining and quarrying	-737,2	-724,4	-157,3	68,2	238,5	24,9
Manufacturing	9331,4	15100,7	13740,9	13327,3	23304,5	19484,9
Electricity,Gas, Steam and Air Conditioning Supply	-418,7	239,7	-1185,1	-921,2	-1729,1	721,9
Water Supply; Sewerage, Waste Management and Remediation Activities	-179,3	-54,4	74,9	131,3	13,9	40,2
Construction	950,9	-460,4	131,7	2888,5	-197,7	1190,5
Wholesale and Retail Trade; Repair of Motor Vehicleas and Motorcycles	8599,1	4990	10707,5	9648,7	-3509,9	14415,5
Transportation and Storage	1968,1	-150	2148,7	776,1	1997,6	1734,9
Accomodation and Food Service Activities	38,3	91,3	252	418,7	421,3	592,4
Information and Communication	8513,5	8795,5	6888,1	4664,5	5857,4	503,3
Financial and Insurance Activities	-18469,1	2690,7	5385,8	3693,6	3607,8	3636,3
Real Estate Activities	1590,5	2543,2	2001,5	4696	4099,5	3735
Professional, Scientific and Technical Activities	-6214,7	4996,2	11197,8	9729,9	2388,1	3164,4
Administrative and Support Service Activities	2375,6	659,7	-376,8	-1338,8	549,5	73,7

Education	1,6	4,3	-20,4	5	-22,7	-0,2
Human Health and Social Work Activities	-45,2	92,7	288,1	136,6	101,1	1771,7
Arts, Entertainment and Recreation	19	99,6	-70,6	-117,8	-79,7	121,2
Other Service Activities	-20,3	17,7	48,3	36,6	88,8	45,3

Appendix E58

FPI inflows in million PLN million in Poland in 2018 broken down by countries.

FPI inflows were measured as a sum of net FPI concerning net debt instruments. Based on National Bank of Poland's data (*Cykliczne Materiały Analityczne NBP*, n.d.).

Country	**Net debt instruments in mln PLN**
Total World	**1 443,2**
Netherlands	14 081,5
Sweden	2 805,5
Luxembourg	1 952,1
Cyprus	1 698,6
Czech Republic	1 405,9
Italy	425,5
Portugal	421,8
Malta	413,4
Singapore	331,4
Japan	294,8
Slovakia	263,5
Belgium	263,3
China	259,6
Hungary	217,3
Russian Federation	108,7
Lithuania	98,3
Israel	91,8
Chinese Taipei	56,3
Denmark	48,7

Appendix E59

Unemployment rate in Poland, Hungary and the EU for 2008-2018 measured as a share of labour force that is not employed yet seeking employment. Based on data from World Bank (*Unemployment, Total (% of Total Labor Force) (National Estimate)*, n.d.).

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Poland	7,1%	8,2%	9,6%	9,6%	10,1%	10,3%	9,0%	7,5%	6,2%	4,9%	3,8%
Hungary	7,8%	10,0%	11,2%	11,0%	11,0%	10,2%	7,7%	6,8%	5,1%	4,2%	3,7%
European Union	7,2%	9,1%	9,8%	9,8%	10,8%	11,3%	10,8%	10,0%	9,1%	8,1%	7,3%

Appendix E60

Real wage growth in Poland between 2009-2019. Based on data from Statistics Poland (Statistics Poland, 2019d).

	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Real Wage Growth	2,1%	1,5%	1,2%	-0,1%	2,5%	3,4%	4,2%	4,2%	3,4%	5,3%	4,8%

Appendix E61

Trade in goods and services for Poland and Hungary 2010-2018, in million USD and as % of GDP based on the OECD database (OECD, 2020j)t

		2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	Export	367305	396181	414343	439545	468885	504961	549644	602008	644040
	Export (% of GDP)	40,1	42,6	44,4	46,3	47,6	49,5	52,2	54,3	55,5
	Import	376226	398081	396986	403660	444065	473407	509577	559432	602050
	Import (% of GDP)	42,1	44,5	44,9	44,4	46,1	46,4	48,2	50,2	52,0

	Net trade	-8921	-1900	17357	35885	24820	31554	40067	42576	41990
	Export	180905	192496	189217	196980	215098	230941	239726	256155	267238
	Export (% of GDP)	81,8	86,6	86,3	85,6	87,4	88,0	87,2	87,1	84,9
	Import	170069	177345	171187	178506	198071	209974	217096	234890	250835
	Import (% of GDP)	76,5	80,5	79,6	78,6	81,1	80,0	78,4	79,9	80,6
Hungary	Net trade	10836	15151	18030	18474	17027	20967	22630	21265	16403

Surrounding world

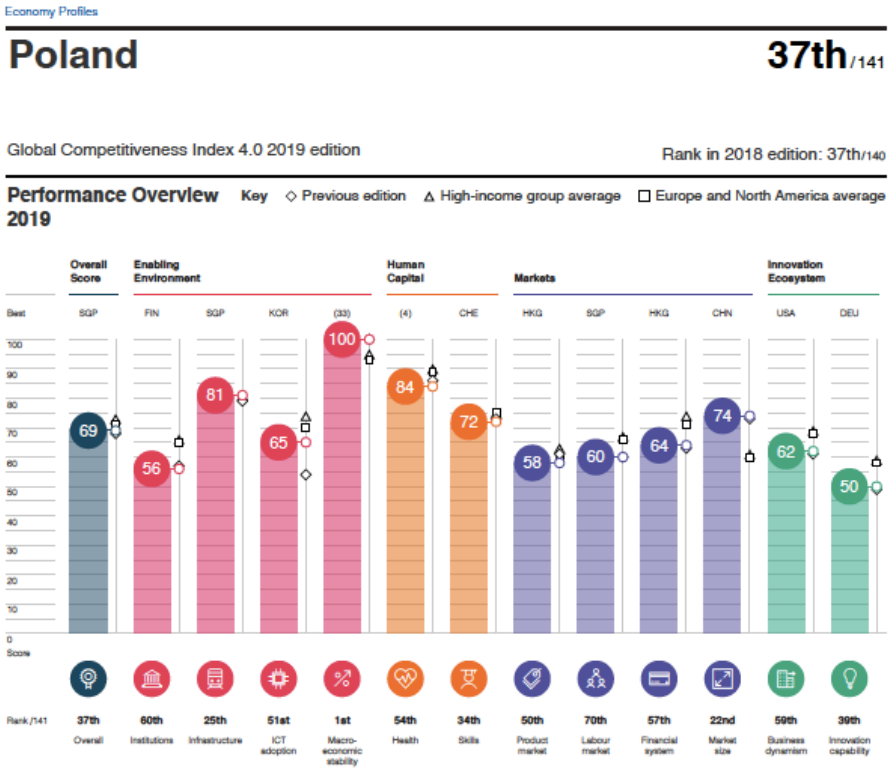
Appendix S1

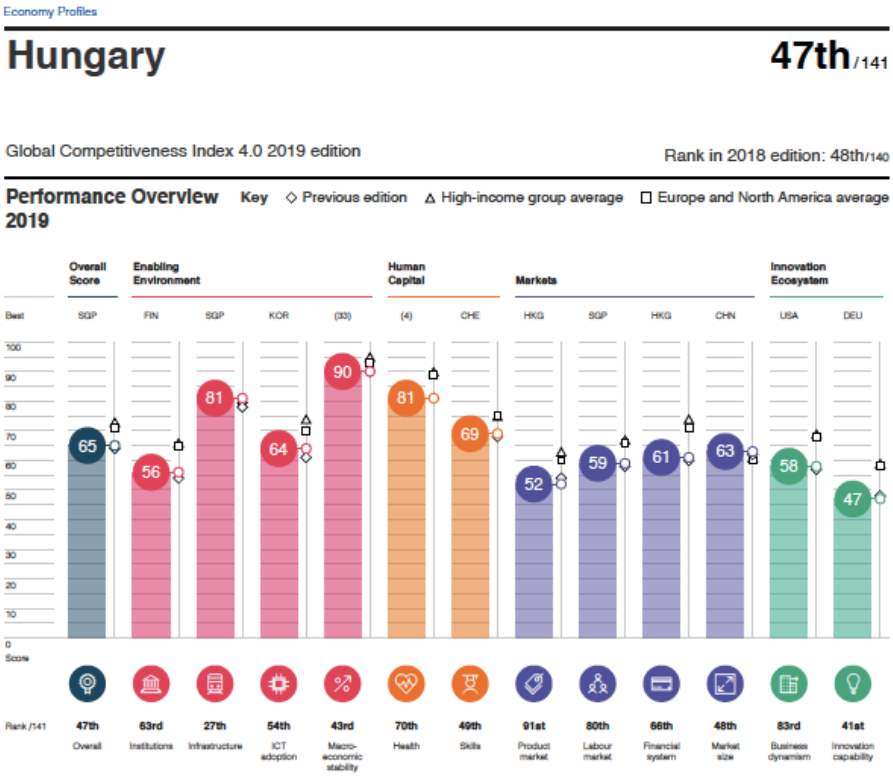
GCI ranks of Poland and Hungary between 2010-2019. Based on The Global Competitiveness Report 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018, 2019 provided by World Economic Forum: http://reports.weforum.org/.

	2010-2011	**2011-2012**	**2012-2013**	**2013-2014**	**2014-2015**	**2015-2016**	**2016-2017**	**2017-2018**	**2018**	**2019**
	out of 139	out of 139	out of 144	out of 148	out of 144	out of 140	out of 138	out of 137	out of 140	out of 141
Poland	39	41	41	42	43	41	36	39	37	37
Hungary	52	48	60	63	60	63	69	60	48	48

Appendix S2

Economy profiles of Poland and Hungary from the Global Competitiveness Report 2019 provided by World Economic Forum http://reports.weforum.org/





Appendix S3

Data on Poland's trade with EU between 2010-2018, based on Statistics Poland data:

(*Eksport Towarów i Usług Według Krajów*, n.d.-b; *Import Towarów i Usług Według Krajów*, n.d.-b)

	Poland: Value of merchandise import in thousand PLN		Poland: Value of services import in thousand PLN	
	from European Union	Total	from European Union	Total
2010	319236157,6	536220628,4	69015247,3	88996932,2
2011	372196486,5	623372742,3	73409914,6	94550154,8
2012	373093527,7	648127612,3	81926706,4	103622921,1
2013	383718774,3	656098222,4	83943681,7	108069175,6
2014	416011957	704567480,4	89044576,2	114623296,6
2015	444673227,1	740973268,8	94603285,2	119350129
2016	481625061,6	786470109,7	103356999	130469166,3
2017	531352740,3	880078413,9	110576315,1	139356391,7
2018	570275945,1	970830808,3	121705120,7	152836622,8

	Poland: Value of merchandise export in thousand PLN		Poland: Value of service export in thousand PLN	
	to European Union	Total	to European Union	Total
2010	381588640,5	481058163,6	69502308,2	97887064,1
2011	436545540,3	558738956,9	78451490,6	110144351,4
2012	459694638,6	603418636,9	70022826,2	95174213,6
2013	485389005	647878833,1	98832717,6	140725838,9
2014	536752664,9	693471647,1	106450679,1	150321923,4
2015	595735190	750835827	118255576,9	158081608,1
2016	641081485,6	803477806,8	136664701,9	182362358,3
2017	706183006,7	882619486,1	152316433,6	203087615,2
2018	766545646,3	951324183,2	174014131,2	231333542,1

2010	2011	2012	2013	2014	2015	2016	2017	2018	Mean 2010-2018

merchandise import from EU countries as % of total merchandise import	59,5%	59,7%	57,6%	58,5%	59,0%	60,0%	61,2%	60,4%	58,7%	59,4%
services import from EU countries as % of total service import	77,5%	77,6%	79,1%	77,7%	77,7%	79,3%	79,2%	79,3%	79,6%	78,6%
merchandise and service import from EU countries as % of total import	62,1%	62,1%	60,5%	61,2%	61,7%	62,7%	63,8%	63,0%	61,6%	62,1%
merchandise export to EU countries % of total merchandise export	79,3%	78,1%	76,2%	74,9%	77,4%	79,3%	79,8%	80,0%	80,6%	78,4%
service export to EU countries as % of total service export	71,0%	71,2%	73,6%	70,2%	70,8%	74,8%	74,9%	75,0%	75,2%	73,0%
merchandise and service export to EU countries as % of total export	77,9%	77,0%	75,8%	74,1%	76,2%	78,6%	78,9%	79,1%	79,5%	77,5%

	2018, in thousand PLN					
	Value of merchandise import	Value of services import	Value of merchandise export	Value of service export in	% of all import from EU	% of all export to EU
Austria	16554677,2	4779018	18948929,1	4749934	3,1%	2,5%
Belgium	24143425,6	3860013,9	22332488,4	6087186,1	4,0%	3,0%
Bulgaria	2780556,1	1067313,3	4590496,5	619574,5	0,6%	0,6%
Croatia	751793,8	nd	3634626,5	305156	0,1%	0,4%

Republic of Cyprus	457502,1	1756069,6	822467,4	939628,7	0,3%	0,2%
Czech Republic	33422729,3	7670527	60652959	7400083,7	5,9%	7,2%
Denmark	10783277,4	3228051,1	16626662,7	5934491,4	2,0%	2,4%
Estonia	1258036,7	612169,7	4641531,9	644341,5	0,3%	0,6%
Finland	7307915,1	1146786,6	8082846,8	3664461,7	1,2%	1,2%
France	35615573,7	8740916,7	53095766,7	9937664,7	6,4%	6,7%
Germany	218943051,6	33966595,8	268380685	56909962,9	36,5%	34,6%
Greece	2149353,4	nd	3727438,1	449853,3	0,3%	0,4%
Hungary	15724031,1	1790234,7	25355738	2512483,8	2,5%	3,0%
Ireland	6065976,6	7129389,2	4275641,4	6097559,8	1,9%	1,1%
Italy	49848762,6	6313453	43840263,6	5086061,7	8,1%	5,2%
Latvia	2255188,3	512557	5973885,2	941519,8	0,4%	0,7%
Lithuania	7982022,3	1726637,4	14300321,6	2708970,4	1,4%	1,8%
Luxembourg	1899281,2	1910781,2	1756771,6	4817506,6	0,6%	0,7%
Malta	204066,2	425822,4	266578,7	474198,1	0,1%	0,1%
Netherlands	35232341,3	8730803,7	42973060,6	17007199,5	6,4%	6,4%
Portugal	3832686,8	762241,2	4141955,8	628759,2	0,7%	0,5%
Romania	8808808	1262468,5	19352008,9	1590737	1,5%	2,2%
Slovakia	17507888,1	3281796,4	24643351,6	3729033,4	3,0%	3,0%
Slovenia	3561683	329230	3976269,5	406263,9	0,6%	0,5%
Spain	21818540,4	3741585,5	24300741,1	3111685,9	3,7%	2,9%
Sweden	17665693,4	4051034,2	26503882,7	8509453,1	3,1%	3,7%
Great Britain	23701083,8	12909624,6	59348277,9	18750360,5	5,3%	8,3%