THE RELATIONSHIP BETWEEN COMPETITION AND DEMOCRACY: COMPARATIVE ANALYSIS

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Abstract

There is no doubt that economic power and political power are linked per se. This paper examines the relationship between Antitrust Policy and Political Democracy. It is supposed that more diverse political landscapes translate to more economic freedom. Concentration of political power leads to concentration of economic power that has a bad effect on market competition. This paper focuses mainly on EU member states as these countries has similar cultural and economic characteristics, but still their level of democracy varies. The relationship between Competition and Democracy has been analyzed on panel data using OLS model and OLS with fixed effects. This paper finds that there is no significant positive effect of democracy on market competition. However, the results suggest that corruption as political variable influences negatively the level of competition. Nevertheless, there are still a lot of unobserved factors that can have an effect on the competitive environment in a country.

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I. Introduction

It is commonly accepted in the academic community that economic power and political power are intrinsically linked. Moreover, there is a link between Antitrust Policy and the promotion of democracy. The Sherman Act (1890) pointed out the relationship between competition and the promotion of democratic ideas (Stucke, 2013). It can be seen from the history that the institutional concentration gave rise to undemocratic regimes, such as fascism (Crane, 2018). Therefore, concentrated economic power can destroy both economic and political freedoms, since elite is powerful and wealthy enough to seize control of the state. Some scholars argue that the current structure of existing Antitrust Laws is designed to promote economic efficiency rather than to prevent economic concentration (Petersen, 2011). The adoption of an effective Antitrust Policy after the end of the Second World War has made a positive effect on democracy (Petersen, 2011). These aspects will be debated in the literature review chapter in details.

Nowadays there is a growing number of Antitrust critiques which are driven by concerns that are sometimes labeled as populist. The new movement has appeared and it is called "hipster antitrust", which can also be called as "New Progressive Antitrust Movement" (O'Sulliva, 2018). The central idea is that the current Antitrust Policy cannot protect the market and was the reason for the appearance of a huge market concentration, which led to an increase in income inequality. However, there are also a vast majority of papers that predict the inevitable fall of such return of populism in Antitrust enforcement (Wright et al., 2018).

Therefore, the Antitrust Policy can be important as a political institution. And nowadays the politicians and scholars are renewing their interest in Antitrust Policy. Some recent papers (for instance, Shapiro 2017) reveal the evidence of growing concentration in the U.S. economy and problem of decline in competition.

The question of the relationship between market competition and political democracy is raised in this paper. The current paper supposes that economic freedom translates to more diverse political landscapes (as it will be argued by several papers discussed later). The database for the research was collected for the period from 2007 to 2017 for 28 EU countries[1] and for the US. EU member countries are culturally and economically similar to each other, therefore it is a good ground for comparison. Despite similarities, EU countries still differ in the level of democracy, which makes them interesting for the empirical analysis. The US was added as a pioneer in the Antitrust Policy sphere. Moreover, this country has also similar economic patterns. One of the main arguments of the research is that the increase in democratic values causes the better quality of Antitrust institutions. As the empirical evidence on the effects of Democracy on Antitrust Policy is scarce, the present research contributes to the exploration of such effects and market efficiency. The research question is posed as follows: how does political democracy influence market competition?

Motivating stylised facts

It is with great interest to analyze developed countries that already introduced Antitrust regimes mostly back in the 20th century. Moreover, democratic institutions were started to be established even earlier. The table below shows the number of countries that introduced Antitrust Policy rules by years. As can be seen from the figure, for half of the century Competition Laws were established only in one country under the consideration (the US).

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[1] The **EU countries** are: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK.

Before the Second World War such legislation was only in the US and Canada. After the 1990s it was adopted in more than 120 countries[2].
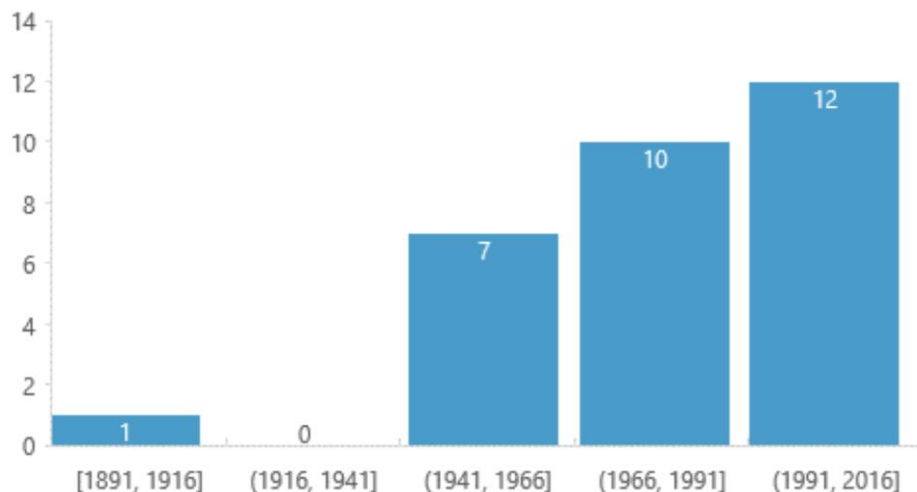

Figure 1. Introduction of Antitrust regime in EU countries and the US

Nowadays the quality of democracy is generally declining according to Bertelsmann Stiftung (2018). The quality is considering as robustness of democratic institutions and practices. The following tables reflect the change in index scores for quality of democracy from 2014 to 2018 (SGI, 2018). The countries can be divided into 3 groups: quality decreased, quality is the same, quality increased. The more detailed information about these measures will be discussed in the fourth chapter.

The current research is based on the assumption that there is a relationship between democracy and competition policy. The figure 1 below shows that there is a correlation between these two variables.

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[2]Competition Compliance (2017). Available at: https://gettingthedealthrough.com/area/97/article/29112/competition-compliance-2017-global-overview/ [Assessed 30 May 2019]
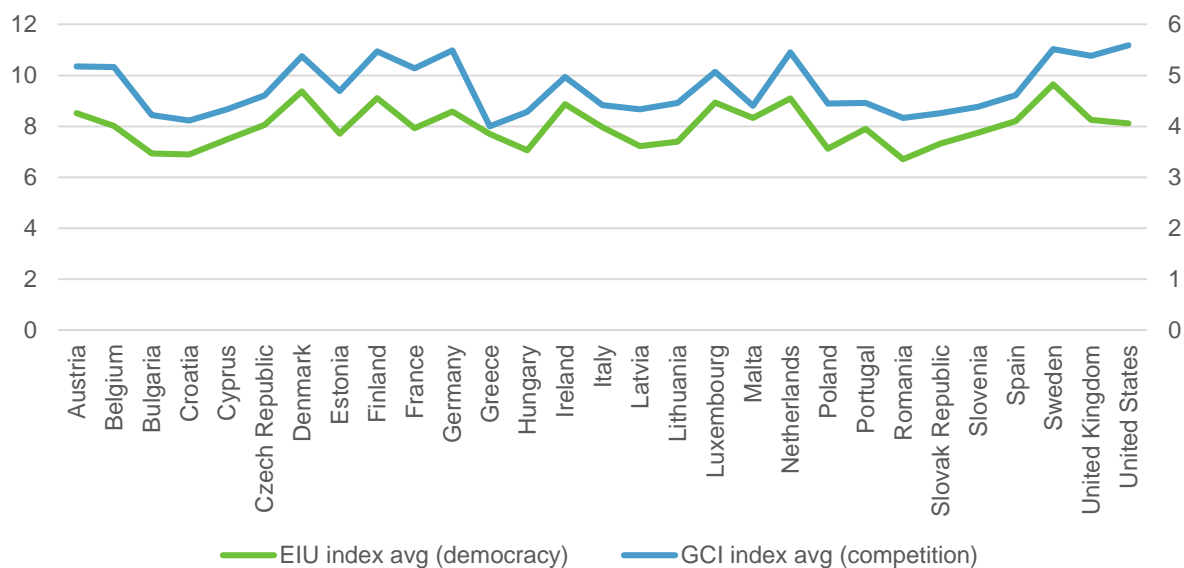
Figure 2. 10-year averages of democracy and competition indexes across the countries
Source : estimated based on data by EIU index and GCI index

If we aggregate across all countries averages for each year, we can see the negative correlation between the average level of democracy and competitiveness (Figure 3). The figure below shows that each increase in the average competitiveness score follows with a decrease in the average democracy score and vice versa.

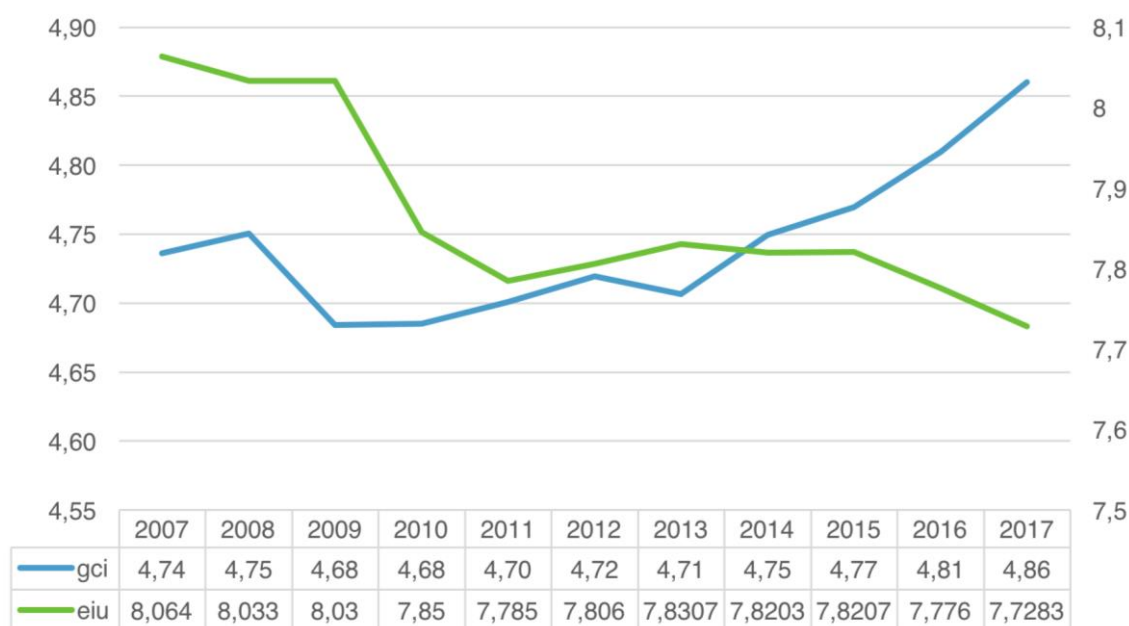|	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
gci	4,74	4,75	4,68	4,68	4,70	4,72	4,71	4,75	4,77	4,81	4,86
eiu	8,064	8,033	8,03	7,85	7,785	7,806	7,8307	7,8203	7,8207	7,776	7,7283

Figure 3. Trends in GCI and EIU indexes (averages for all countries)
Source : estimated based on data by EIU index and GCI index

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It is interesting to research this question since the relationship between variables is negative. Therefore, this paper was partly motivated by these statistics. There is a widespread idea that competition and democracy are moving in the same direction, however, according to the graph, the two variables are moving exactly in the opposite directions. This "reverse" issue is partly supported by the recent paper of Eleanor Fox (2017, p.2), as she stated: "Democracy requires markets. Markets do not require democracy". Therefore, probably, the markets can operate without any democratic environment and the competition is influenced by other factors than political. However, according to Fox (2017, p.2), "markets have two functions: service to democracy (rights) and service to economic efficiency". Spencer (2017, p.4) also states that "the promotion of democracy is one of the historical and contemporary values for competition law". According to Pitofsky (1979), concentration in economic power causes the concentration in political power. The academic community has agreed that Antitrust Policy is an important institution of democracy, not merely a tool for extracting lower prices for consumers (Waller, 2017). Moreover, democracy has an aim regarding to markets: "it is against autocratic power and privilege and control by the few for the few" (Fox, 2017, p.2).

The structure of the paper is the following: it is started with the literature review section which consists of a brief history of the Antitrust Policy in the US and EU and review of theory. The next section described the hypotheses of the research and propose a theory for that. It is followed by the chapter of empirical analysis, which consists of the research design, description of the data, empirical facts, results and discussions and limitations of the model with suggestions for the further studies. Conclusions and policy recommendations are shown in the last chapter of the paper.

II. Literature review

This chapter will summarize the contemporary debate about the relationship between democracy and competition. It will start with a brief summary of the main Competition Policies: US tradition as a cornerstone, and European Laws. Then it is following with theoretical review of the fundamental ideas and new movements (Hipster Antitrust).

2.1 History of Antitrust Policy

(This review builds on the summaries found in Erbach et al. (2014) and Fox (1997))

The pioneer in the sphere of antitrust was the United States that adopted the Sherman Act on the 2nd of July 1890 (The Sherman Antitrust Act). This act became a global reference point in state control over the monopolization of the market. In the late 19th-early 20th century large economic structures were formed and strengthened in the forms of trusts and cartels. This predetermined the need of creation of an effective mechanism to control and limit the processes of destruction of the competitive environment in the states and beyond. The Sherman Act of 1890 forbade any form of associations that could distort competition and free open trade within the country, i.e. it controls the process of market pricing, the evolution of SME, and any acts that are against the interests of consumers. This law was and remains fundamental in the regulation of monopolistic processes.

Another Act that established in 1914 was the Clayton Act which introduced clarifications in the practice of controlling monopolies. It was not aimed only at preventing the emergence of monopolistic structures but also at maintaining competition. This law allows to react and take preventive measures before the emergence of monopolies. Moreover, it brought a tightened control over the concentration of capital, which was of a large scale during that period of market development. According to the Federal Trade Commission Act of 1914, the special commission

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was created that monitors and evaluates all transactions and business activities that threaten competition in the United States.

The successful experience of the US in the application of legislation and the construction of effective competition policy has served as a basis for other countries of the world, faced with a similar "aggressive" tendency from big businesses. This particularly affected the European market. The EU countries have their own national approaches to antimonopoly control but they are subject to general EU measures in relation to competition and monopolization of the region's economy. Since the formation of the EU in 1957 the economic course was mainly to build an effective economy or/and a competitive market. Particular attention was paid to the innovations, as well as the development of entrepreneurship and compliance with the interests of the consumer. There are 4 main areas of competition protection in the EU law:

1) The Article 101[3] (ex Article 81 TEC) of the Treaty of Lisbon prohibits the practice of collusion, agreements and associations, which hampers trade between European countries and distorts competition of the regional market.

2) The Article 102[4] (ex Article 82 TEC) prohibits abuse of dominant market position. Dominant status is definitely gained by the companies with a market share of 50%, less often - 40%. Such companies may overcharge the sale price, as well as lower the purchase price, which is incomparable with the focus on the development of a competitive economy.

3) In some cases, mergers of enterprises may adversely affect the competitive environment of the EU internal market. Mergers control is carried out by the European Commission on the

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[3] European Comission. Competition rules applying to undertakings (Treaty on the Functioning of the European Union) [online] Available at:
http://ec.europa.eu/competition/antitrust/legislation/articles.html[Accessed 16 May 2019].
[4] Ibid.

basis of the EC Merger Regulation[5]. Mergers are defined as the union of two or more independent enterprises, as well as the establishment of control of one enterprise over another. 4) Articles 107, 108 and 109 of the Lisbon Treaty define the general rules for monitoring the implementation of state aid. There are special rules how the government can provide help[6].

Penalties for violation of these norms are the responsibility of national and supranational (regional) authorities. Special regulations are introduced to declare the principles in details and regulate the competitive environment within the EU. The violation of regulations does not entail any criminal punishment in most countries, but it is limited to fines. Since the inception of the EEC and signing of the Treaty of Rome in particular (March 25, 1957), competition policy of European countries aims to maintain healthy and fair competition, avoiding the power of monopolies. A single concept of fight against monopoly has been formed over the past decades:

1) control over the activities of dominant companies;

2) control over mergers and acquisitions of large companies;

3) restructuring of natural monopolies;

4) support of SME.

It is worth to mention the German tradition of Antitrust Policy. It was very influential in forming Competition Laws, especially in Central European countries. For instance, Hungarian Law and a lot of Slavic countries are basically mimicking the German way of thinking about competition. The German tradition focuses on 3 aspects: prohibition of cartels, prohibition of the abuse of a dominant position and control of mergers. One of the main tasks of the German Competition

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[5] EC Merger Regulation. Available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:024:0001:0022:EN:PDF [Assessed 20 May 2019]
[6] Rules concerning the provision of state assistance to small and medium enterprises. Available at: http://ec.europa.eu/competition/state_aid/studies_reports/sme_handbook.pdf [Assessed 20 May 2019]

Policy is to prevent collusion on pricing, volumes and market division. However, there is still a political influence in the control of mergers in Germany (Gronden, 2006).

EU and US traditions have slightly different approaches toward competition. Large corporations are not banned in the EU, but controlled. They are not regarded as destructive evil, but on the contrary, they act as providers of development for the European market and global players (Haufler, A. and Nielsen, S., 2007). Usually, US Antitrust is viewed as being more lenient towards large firms and industry in general, while the EU competition policy is mainly focused on SME. Even within the EU there are different approaches to Competition policy: the West-European model, as France and England have, is regulating the already existing monopolies, whereas in Germany, as in the American model, the prohibition practice and total control of the environment are applied to monopolies. However, all competition systems have the same goals: protect consumer welfare and competitive economic environment, provide free access to markets for competitors and freedom of choice for consumers (Fox, 1997).

2.2 Theoretical review of the relationship between competition and democracy

It is a well-known fact that competition is essential for a healthy economic environment. Competition is the basis of the modern economy of developed countries. As the European Commission points out in one of its reports[7], competition is the best driver of economic growth. There is no progress, development of production, or new technologies in the absence of competition in the market. Therefore, Antitrust Policy is aiming to promote economic freedom. However, it is not the only goal, some scholars believe that Antitrust serves in the promotion of political democracy (Petersen, 2011; Waller, 2017).

Some scholars believe that the concentration of economic power leads to serious dangers for preserving democracy (Wu, 2018). As Pitofsky stated in 1979, economic power that is concentrated may lead to concentration of political power (higher control from the government). Concentration can be dangerous in many aspects: it is threatening markets, economy, and democracy itself (Warren, 2016[8]). There is a consensus in the academic community that Competition Policy is an important democratic institution, but not just a tool of getting better prices for consumers (Crane, 2018). Some legal studies have also confirmed this fact that Antitrust positively influences democracy (Adams, 1979).

Historical examples suggest that there is a relationship between monopoly power and the rise of fascism in the middle of the 20th century (Crane, 2018). It is proved that concentration in the industrial sphere helped Hitler to grab political control. Thus, highly concentrated

pharmaceutical industry that was dominant by Farben company has made a significant effect of the growth of Nazism. Famous economist Milton Friedman (1962) stated that economic power should be dispersed playing a crucial role in preventing centralization in the government. Crane in his research declares that if antitrust system were created with a strong focus on prevention of dominance and consumer benefits, there would be no chance for appearance of such a destructive movement as fascism. Therefore, we can see that right after the WWII, governments of the US and Europe established new laws to strengthen antitrust policy. However, according to Becker (1957), it is better to "suffer" from possible effects of monopolies than to regulate them and "suffer" from the political imperfections. Some scholars have agreed that Competition Policy and democracy are complementary to each other. (Peterson, 2011; Waller, 2017).

What is necessary to build and maintain a democratic political regime? According to Eleanor Fox (2017), democracy is needed in markets; it cannot prosper without a healthy competitive environment. But markets themselves can operate without a democratic political system. Nevertheless, the link between them is "inextricable" (Fox, 2017). According to Sherman (1890), there is a tight connection between democracy in market and political democracy:

> *"If we will not endure a king as a political power we should not endure a king over the production, transportation, and sale of any of the necessaries of life"[9].*

And one of the aims of democracy is in line with the market aims: against autocracy and any control by minorities. The symbiosis of economic democracy and political democracy is very well captured by the European Treaties (Fox, 2017): the establishment of the community of

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[9] From the speech of John Sherman in 1890. Available at:
https://www.ftc.gov/system/files/documents/public_comments/2018/08/ftc-2018-0048-d-0092-155251.pdf [Assessed 1 May 2019]

nations for peace. However, EU Competition Policy is only slightly attempting to safeguard political democracy (Fox, 2017).

Moreover, economic development is a good indicator for the Competition Policy effectiveness. According to Przeworski (2000), economic development can stabilize already established democracy. The quality of democracy can be also increased with increase in economic growth (Lipset, 1959).

It worth to mention that Peterson (2011) has conducted similar research that was aimed to reveal the reverse relationship: meaning that democracy is driven by market competition. The author used the data for 154 countries both developed and developing for the period from 1960 to 2007. The main dependent variable was binary: introduction of Antitrust regime (0 - if it is not present and 1 - if it was introduced). Peterson used time lags to capture the long-term effects of the introduction of Competition laws on the political regime in the country. However, the results did not show any statistically significant effects of market competition on democracy.

2.3 Hipster Antitrust movement: does Antitrust really work for people?

Recently, Antitrust theories primarily focus on direct economic matters. However, now more and more researches believe that theory shall focus on something more societal, such as the structure of the market, rather than the effects on consumers. Therefore, the new concept called populist approach has appeared. It is also known as "hipster antitrust". According to Medvedovsky (2018), the main aim of it is an elementary consumer welfare standard for price theory analysis. Within this approach, one shall review and analyze how a "healthy" market structure shall be in order to protect the market as a whole rather than a single consumer.

However, opponents think that there are dozens of problems with this approach. For instance, the current regulation of clearance of companies has resulted in a decline in business dynamism and increased firm concentration. It is noteworthy that the consumer welfare standard is a more practical standard since it provides a predictable and impartial measure for how a healthy market looks like. In comparison, the hipster antitrust approach is inconsistent and unpredictable. Its underlying values vary from policy goals which, for example, means firms cannot predict which business models nebulous public interest standard can be manipulated by special interests, to the detriment of cons policy goals set out by its advocates. We should bear in mind that business models may change, and antitrust oversight should absolutely keep pace.

III: The main theory and hypotheses

Competition Policy is an important area for the country's decision-makers. The current research supposes that there is a potential for the positive effect of democracy on competition. Firstly, democracy is promoting political competition, which results in a more diverse political landscape. Therefore, vested interests can concentrate neither their political power, nor economic power. Secondly, deconcentration of recourses leads to a more competitive environment. In contrary, for the stability of the autocratic regime, political elite can concentrate its recourses by means of limiting competition within the country, since it is the only way to hold their power (Bueno de Mesquita et al., 2002).

According to Lipset (1959), economic growth has a positive effect on the quality of democracy in a given country. This can be interpreted as follows: the higher the economic growth, the higher the level of educated people, which leads to the demand in democratic institutions. We suppose that the higher level of growth in the country will cause the higher level of democracy, which in turn will increase the market competition within the country.

The following hypotheses are tested in the current research:

1) All else being equal, the level of competition is higher in those countries where the quality of democracy is higher.

2) All else being equal, there is a positive effect of democracy on competition. Does this effect is causal or is it just a correlation between these two variables?

3) All else being equal, the higher the level of growth in the country, the higher the level of democracy, and the better the competition.

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IV: Empirical Analysis

This chapter is revealing the empirical results of the relationship between Competition and Democracy. Firstly, the time period of study will be explained and the rationale behind it that is mostly driven by data. Then the model specification will be explained. The second subchapter is dedicated to the description of variables. Next will be presented some empirical facts regarding the research question. The forth subchapter is showing the empirical models and discussion of it. The limitations of the study and prospects for further research will be discussed in the last subchapter.

4.1 The research design and model specification

The relationship between Competition and Democracy has been analyzed through panel data estimates. The database was collected for the period from 2007 to 2017 for 28 EU countries[10] and for the US. The EU countries have similar cultural and economic characteristics. The US was a pioneer in the Antitrust Policy sphere and was added as a good variable for comparison. Moreover, the US has also similar economic patterns. The certain time period was chosen due to the availability of data. For one of the dependent variables of the research (competition), the data were collected only from 2007. Also, it is an interesting period, that is right after the economic crisis of 2007-2008 and the following recovery.

Several challenges are expected regarding causal identification. Due to the nature of the dataset, there might be unobserved third factors that can influence all main variables. Therefore, we consider a panel data model with two ways fix effects. This includes country fixed effect and

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[10] The **EU countries** are: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK.

time fixed effect. Fixed effects control for unobserved heterogeneity. Moreover, there might be an endogeneity problem. For example, the introduction of competition law may be due to democratization and economic growth in the country whereas economic growth and democratization may appear due to the introduction of competition law. Several control variables are added to check the robustness of the model.

The effect of democracy on competition will be measured through the following equation:

$$C_{it} = \beta_0 + \beta_1 D_{it} + \gamma X'_{it} + u_i + \varepsilon_{it}$$

where i and t corresponds to country and t indexes. C_{it} stands for competition, as the dependent variable (effectiveness of Antitrust Policy). D_{it} stands for the level of Democracy, as the main independent variable. Vector X'_{it} is all the control variables for the model; u_i corresponds to fixed effect for every country (unobserved country specific characteristics).

4.2 Data description

The current research is using a database prepared by the Quality of Government Institute[11]. This database is an open source and the latest update was done in January 2019. Moreover, different indexes were used in the research: Global Competitiveness Index (by World Economic Forum)[12], The Economist Intelligence Unit's index of democracy[13], HH Market concentration index[14].

CEU eTD Collection

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[11]Quality of Government dataset. Available at: https://qog.pol.gu.se/data [Assessed 1 May 2019]
[12]Global Competitiveness Index. Available at: http://reports.weforum.org/global-competitiveness-index-2017-2018/competitiveness- rankings/ [Assessed 1 May 2019]
[13] The Economist Intelligence Unit's index of democracy. Available at:
https://www.eiu.com/topic/democracy-index [Assessed 1 May 2019]
[14]Market Concentration Index. Available at:https://wits.worldbank.org/CountryProfile/en/Country/BY-COUNTRY/StartYear/2014/EndYear/2015/Indicator/HH-MKT-CNCNTRTN-NDX
[Assessed 1 May 2019]

Dependent variable: level of competition

How to measure the outcome of the introduction of a Competition Policy in the country? In this study, the level of competitiveness is used as an indicator of Competition Policy effectiveness (Antitrust Law). The following variable was used:

- *Global Competitiveness index (gci)*

The GCI is an extensive annual study that was introduced in 2007 by the World Economic Forum. It is based on a combination of publicly available statistics and a survey with executives. GCI is composed of 12 components of competitiveness, which describe in detail the competitiveness of countries at different levels of economic development. These components are the following: "The quality of institutions", "Infrastructure", "Macroeconomic stability", "Health and primary education", "Higher education and training", "Efficiency goods and services market", "Efficiency of the labor market", "Development of financial Market "," Technological Level "," Size of the Internal Market "," Competitiveness of Companies "and" Innovation Potential ". The index has covered 151 countries in total from 2007 to 2017. The index values are from 1 to 7, where 7 is the best score.

- **Global Competitiveness Index 4.0 (for 2017, 2018)*

This is a new index that was introduced by World Economic Forum. The data was collected from 2017. The index values are from 0 to 100, where 100 is the best score. The country which has better conditions for the competitive environment has a value close to 100. Index shows the landscape of competition in 140 countries. However, the data is available only for 2 years (2017, 2018), therefore it will not be included in the model.

Main *independent variable* is *democracy*. The level of democratization can be measured in two ways. The most widespread indicator in academic community is the weighted combined score of Freedom House and Polity indexes. Freedom House index divides countries into 3 categories,

according to the average of political rights and civil liberties in a country: free, partly free and not free. The Polity project covers all the major independent states in the world for the period since 1800. Project conclusions on the state of the political regime in the country are based on the evaluation of elections on the subject of competitiveness and openness, the nature of political participation in general and the degree of control of executive authorities. The second way to measure the level of democracy in the country is the Democracy Index developed by The Economist Intelligence Unit. Index is based on the 60 indicators. Countries are divided by 4 categories: full democracy, imperfect democracy, hybrid regimes and authoritarian.

- *Level of Democracy (fh_ipolity2)*

To measure the political regime of the country, data from two indexes are used: Freedom House and Polity. Each of the indexes has its drawbacks and deviations, and in order to align them, we take an average of them. The indices were standardized on a scale from 0 to 10, where 0 is the least democratic mode and 10 is the most democratic. According to the study of Hadenius & Teorell (2005), indeed, the combined index works better in terms of validity and reliability than each of it individually. However, this indicator has a little variance for the countries under consideration, therefore, it will not be used as a main independent variable.

- *The Economist Intelligence Unit's Democracy Index (eiu_demindex)*

The index collected information for 167 countries. The values range from 0 to 10. The main characteristics of the index are pluralism, civil liberties and political culture [15].

A large number of *control variables* are required to build a qualitative model. They can be grouped as economic, competition and political controls. The groups are the following:

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[15] The Economist Intelligence Unit's index of democracy. Available at: https://www.eiu.com/topic/democracy-index [Assessed 5 February 2019]

1) Economic controls

a) *GDP per capita*, PPP (wdi_gdpcappppcon2011)

The proxy variable for country's economic development can be GDP, calculated at purchasing power parity (This is a gross domestic product converted to U.S. dollars using purchasing power parity ratio divided by total population). The values of this variable were transformed into logarithm in order to respond towards the skewness.

b) *Population*, total (pop_log)

Variable "population" explains the size of the country and the size of the economy in particular. Therefore, the bigger the economy, the higher amount of resources available, which in turn increase the opportunities for market competition. This data is collected by the World Bank. The variable consists of total population of the country : all residents of it (irrespective of legal status or citizenship). The values of this variable were transformed into logarithm in order to respond towards the skewness.

c) *Uneven Economic Development* (ffp_ued)

The variable uneven economic development was taken from Fragile States Index and includes ethnic, religious, or regional disparities, the governed tend to be uneven in their commitment to the social contract.

d) *Economic Decline* (ffp_eco)

This indicator reflects the factors of economic decline of a country, such as unemployment rates, inflation, debt, poverty levels, business failures, etc. Part of the Fragile States Index that is designed to assess the inability of the authorities to monitor the integrity of the territory, as well as the demographic, political and economic situation in the country.

2) Competition controls

a) Economic Globalization (dr_eg)

The economic globalization variable considers trade and financial flows. The values range from 0 to 100, where the higher score corresponds to the higher level of globalization.

b) Market Concentration (hh_mci)

Hirschman Herfindahl Market Concentration index[16] measured variability of a trading value across an exporter's partners. The score can be from 0 to 1. Country with a diverse trade portfolio (export and import) have a score close to 0, while a country which trade is concentrated in a few markets has score close to 1.

3) Political controls

a) *Corruption* (bci_bci)

The level of corruption in the countries reflects by the Bayesian Corruption Indicator index. The index score is from 0-100, where 0 means that there is no corruption in the country. The increase in value of index corresponds to the increase in the corruption level.

b) *Quality of Democracy* (qd_edi)

This variable is a combined score of Effective Democracy Index and Quality of Democracy Index. The first one has available data from 1996 to 2006, the second one from 2007 to 2017. In this research, we assume that these two indexes have similar outputs, therefore, we created a single variable by taking the change from the value of a previous year. These indexes measure the degree of effectiveness/quality of a democratic political regime in a county. It is based on several criteria as the existence of democratic rights and to what extent the government makes it a reality, access to information, civil rights and political liberties, rule of law.

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[16] Market Concentration Index. Available at: https://tcdata360.worldbank.org/indicators/hh.mkt [Assessed 1 May 2019]

c) *Political competition* (van_comp)

This variable was taken from the "Measures of Democracy" dataset that was created by Tatu Vanhanen. Political Competition is calculated by subtracting from 100 the share (in %) of votes that the largest party got. It is supposed that this share should be not higher than 30 if the political competition is high in the given country.

The detailed descriptive statistics for the variables that are used in the models can be found in Appendix B.

4.3 Simple empirical facts

According to Bertelsmann Stiftung (2018), quality of democracy is declined in many developed countries. The detailed information can be found in Appendix A. The majority of the countries under consideration has experienced a decline in the quality of democracy or their status has
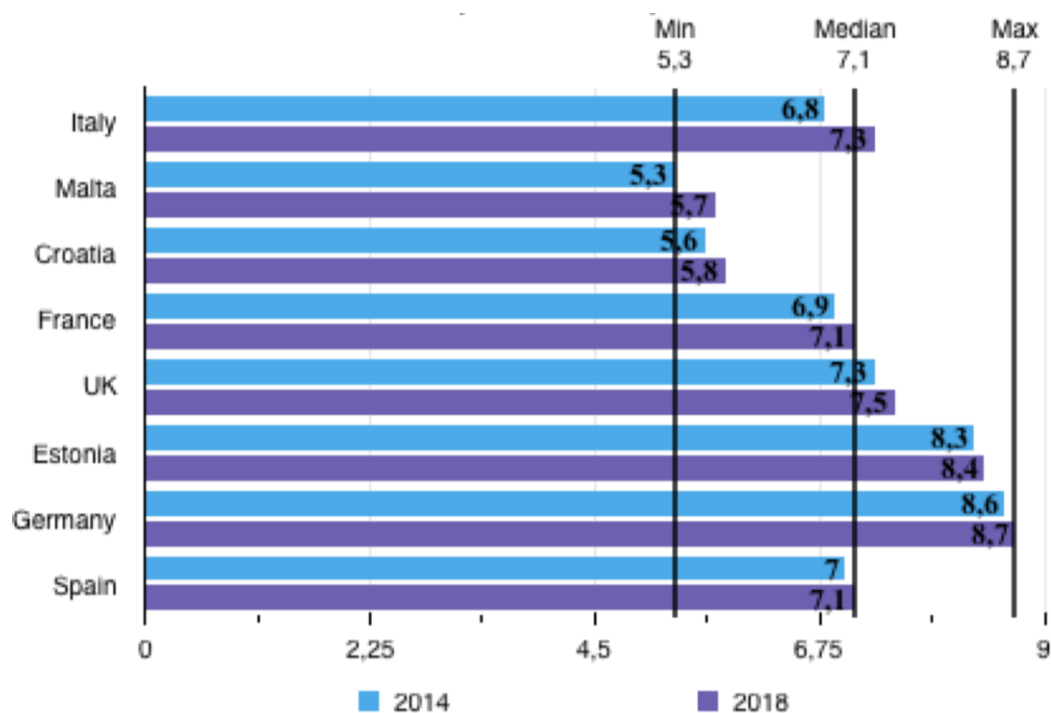
Figure 4. Quality of Democracy: increased.
Source: estimated based on Bertelsmann Stiftung, 2018

stayed the same (see Appendix A for more detailed information). The figures 4 and 5 show the countries with the increase and decrease in their democracy score respectively. Poland has the huge difference between the values from 2014 to 2018 with 3.1 change in the index score, the next one in Hungary with 1.5 change and the US with 1 point decrease. On the contrary, the maximum increase in the score values was for Italy with 0.5. Moreover, the median score for the quality of democracy is still around 7 (out of 10) for the EU countries. The best score has Sweden with 9.3.

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Figure 5. Quality of Democracy: decreased.
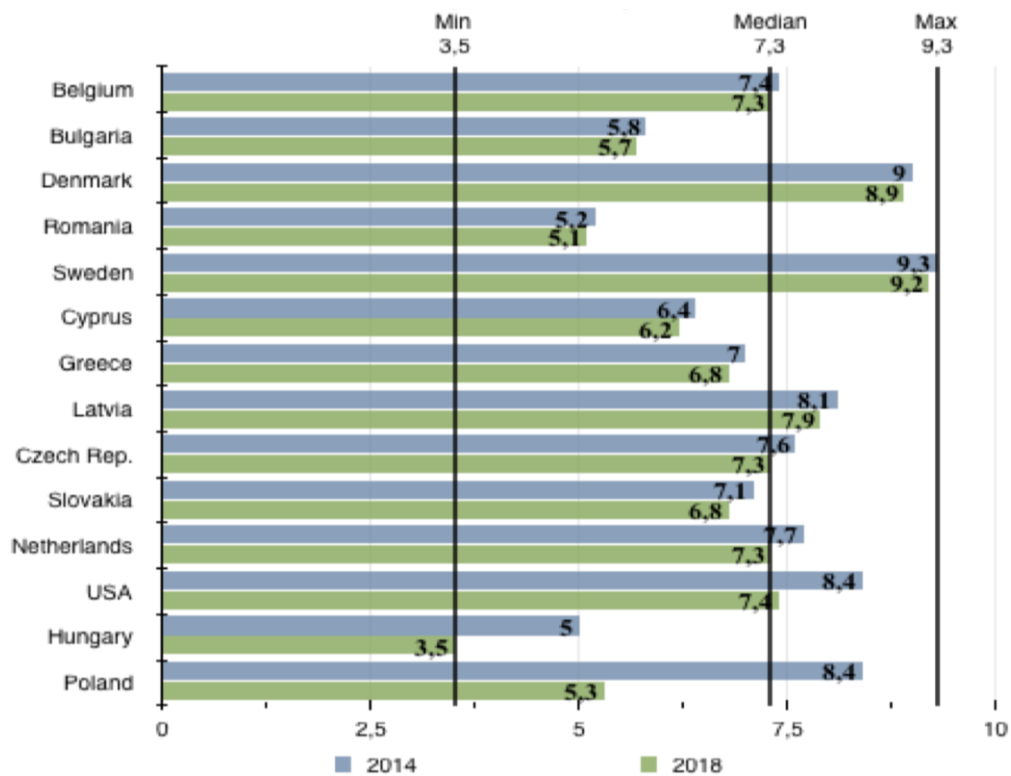*Source: estimated based on Bertelsmann Stiftung, 2018*

If we turn to the Market Concentration Index (Figure 6), for the majority of EU countries the rate is more or less flat over the 10 years. The range is between 0.03 to 0.125. The best score has Germany, while the Czech Republic has the worse (within the sample).
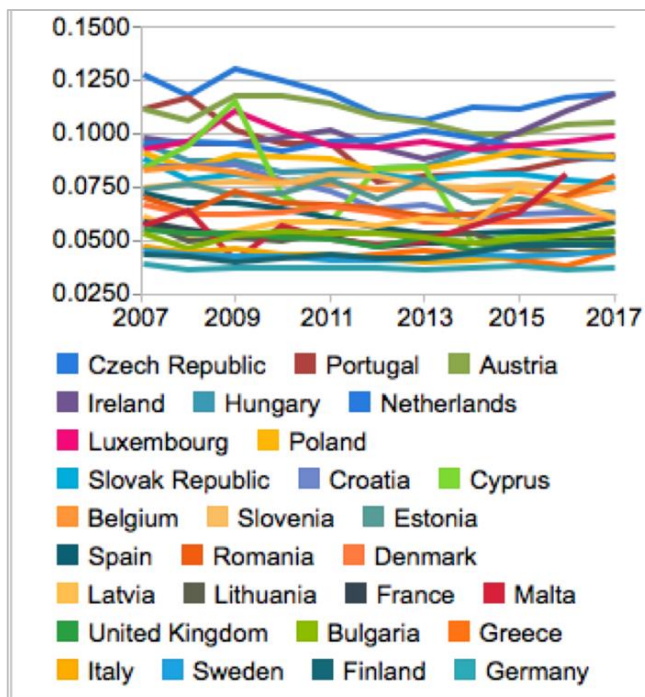

Figure 6. HH Market Concentration Index
Source: WITS

4.4 Empirical results and discussion

As a starting point for the analysis of the relationship between Competition and Democracy, simple OLS regressions were implemented. It can be seen from the table 1 below that there is a positive effect of democracy on competition in the majority of the specifications, which is statistically significant.

	Competition					
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy	0.308***	0.181***	0.186***	0.138***	0.051**	0.015
	(0.020)	(0.019)	(0.028)	(0.030)	(0.023)	(0.024)
GDP		1.655***	1.448***	0.765***	0.207*	0.282**
		(0.125)	(0.149)	(0.158)	(0.124)	(0.121)
Population		0.260***	0.268***	0.255***	0.251***	0.297***
		(0.022)	(0.027)	(0.024)	(0.018)	(0.020)
Quality of Democracy			1.734**	1.416**	0.694	1.061**
			(0.685)	(0.611)	(0.455)	(0.443)
Political Competition			0.009***	0.008***	0.004***	0.003**
			(0.002)	(0.002)	(0.001)	(0.001)
Uneven Ec. Development				-0.007	0.012	0.010
				(0.016)	(0.012)	(0.012)
Economic Decline				-0.151***	-0.082***	-0.093***
				(0.019)	(0.015)	(0.015)
Corruption					-0.019***	-0.017***
					(0.001)	(0.001)
Globalization						0.011***
						(0.002)
Market Concentration						-1.344***
						(0.506)
Constant	2.322***	-5.969***	-7.413***	-2.846***	1.619**	0.197
	(0.158)	(0.480)	(0.873)	(0.999)	(0.808)	(0.827)
Observations	330	330	232	232	232	232
R2	0.421	0.736	0.756	0.810	0.896	0.906
Adjusted R2	0.419	0.734	0.751	0.804	0.892	0.902
Note:					*p<0.1; **p<0.05; ***p<0.01	

Table 1. Simple OLS regression model

Several control variables (economic, political and competition) were added gradually to the model as a robustness check. GDP has a positive and strongly significant effect on the level of competition. As economic growth is increasing in the country, more favorable environment for competition appears ceteris paribus. Population variable is also significant in all the specifications with a positive sign. The population density positively influences market competition ceteris paribus, since this variable explains the size of a country and the size of the economy in particular. "Political controls" are statistically significant in the majority of the

specifications. The quality of democracy and political competition have a positive effect on market competition ceteris paribus. Corruption variable was added in the (5) model specification, which has a significant negative effect on the dependent variable. This can be explained as follows: the higher level of corruption, the lower the level of competition ceteris paribus, since political elite will try to enhance their power through concentration of economic recourses, which in turn corresponds to lower level of democracy. "Competition controls" were added in the last model specification (6). The significance of the main explanatory variable (democracy) disappears, which means that there are other factors that influence dependent variable. In turn, Economic Globalization and Market Concentration have significant effects on the dependent variable. The increase in global trading seems to have a positive effect on competition within the country. Market concentration has a significant negative effect on competition. Each increase by 1 unit of this index leads to a decrease in the competition by more than 1.3 points.

Two tests were used to choose the appropriate estimation technique. The Lagrange multiplier (Appendix C) test showed that the simple OLS regression is leading to biased results. The Hausman specification test was used to decide which effect to implement: random or fixed. The p-value was significant, which means that unique errors are correlated with the regressors. Therefore, fixed effects should be used to mitigate the heterogeneity problem (to account for country-specific characteristics).

The table 2 presents the results of OLS with 2-ways fixed effects. This model specification reveals that there is no significant positive effect of democracy on competition. As in the previous model the control variables were added gradually to the model. It turned out that only a few of them have a significant effect on competition.

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			Competition			
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy	-0.002	-0.045	-0.020	-0.035	-0.043	-0.034
	(0.029)	(0.028)	(0.040)	(0.041)	(0.037)	(0.038)
GDP		1.510***	1.578***	1.140***	0.694*	0.578
		(0.205)	(0.311)	(0.383)	(0.358)	(0.364)
Population		0.371	0.254	0.620	1.369**	1.697**
		(0.445)	(0.691)	(0.711)	(0.662)	(0.709)
Quality of Democracy			0.305	0.276	0.214	0.209
			(0.257)	(0.255)	(0.234)	(0.237)
Political Competition			-0.003*	-0.003**	-0.002*	-0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Uneven Ec. Development				-0.034	-0.047*	-0.046*
				(0.029)	(0.027)	(0.027)
Economic Decline				-0.027*	-0.021	-0.021
				(0.016)	(0.015)	(0.015)
Corruption					-0.018***	-0.017***
					(0.003)	(0.003)
Globalization						0.007
						(0.005)
Market Concentration						0.911
						(0.876)
Observations	330	330	232	232	232	232
R2	0.00002	0.160	0.154	0.173	0.310	0.320
Adjusted R2	-0.138	0.037	-0.029	-0.016	0.148	0.151
Note:				*p<0.1; **p<0.05; ***p<0.01		

Table 2. OLS model with 2-ways fixed effects.

GDP variable is strongly significant with a positive sign only in (2), (3), (4) specifications, which disappears completely in the last one (6). Population variable still has a positive effect on competition, which was discussed earlier. Situation with "political controls" differs from the previous model: quality of democracy has no effect on market competition ceteris paribus. "Competition controls" have no statistical significance with fixed effect.

The most significant variable in this model is Corruption which has a very strong negative effect on competition. This is not just a statistical significance, since while adding this variable to the model, the R2 raises from 0.173 to 0.310 even with fixed effects. Corruption might also influence democracy; the main independent variable is not significant, when either we include corruption or not in the model, but we think that it still could influence democracy. Therefore, we can conclude, that ceteris paribus corruption influence democracy and has a negative effect

on market competition. The last 2 model specifications (5 and 6) show that there are a lot of

unobserved factors that are only captured by the fixed effects.

4.5 Limitations of the model and suggestions for the further research

We can conclude that corruption as a political variable has an effect on competition. However, the main research independent variable – the level of Democracy – seems to have no influence on competition despite of correlation between them. Several explanations for such results can be stated. First of all, such results may be due to errors in measurement. Another proxy variable can be used for the dependent variable. Moreover, the level of democracy can be also taken from a different index. As it was mentioned earlier, the current research potentially can have an endogeneity problem. One way to mitigate it is to use an Instrumental Variable model. Democracy might influence competition through some other variable. Other limitations of the study are the sample and time period. The higher amount of countries under consideration and a longer time period may cause different results. Moreover, the larger sample will make it possible to use other model specifications, such as generalized method of moments (GMM), that can reveal completely different results also.

The reasons for such results can be also conceptual in nature. According to Shapiro (2006), the increase in democracy level may not always lead to disappearance of influence on making of political decisions from economic elites. The forms of such an influence can be simply changed. Those elites can influence political decisions through providing and selecting information, or financing of a campaign, etc. (Shapiro, 2006).

Thus, the current research has contributed to the exploration of the relationship between Competition and Democracy. However, there are many ways for further development of it.

V: Conclusions and Policy Recommendations

The majority of the studies regarding the relationship between competition and democracy are mostly theoretical. The theory suggests that there is a positive influence of democracy on market competition. The current research is contributed to the exploration of the topic from empirical prospective. The research was based on the analysis of the relationship between competition and democracy using the OLS and OLS with 2-ways fixed effects models on panel data. According to empirical results, it seems that there is no positive effect of democracy on competition. Analysis reveals that there is no direct effect between the main variables, which may be due to the existence of the other unobserved factors that may influence both of them. Some scholars believe that democracy does not have a strong positive effect for the growth of the economy at all (Barro, 1997). Nevertheless, according to Acemoglu (2014), it is a great tool in boosting economy. The hypotheses that were stated in the current research confirmed partly, since corruption has a statistically strong positive effect (meaning non-zero) on market competition. We suppose, that corruption might be correlated with democracy, therefore the higher is the level of democracy in the country, the lower is the corruption, and the higher is the market competition.

Several policy implications can be made due to the positive results of the research. As quality of democracy was decreased in many EU countries recently, the politicians should deal with corruption as one of the "anti-drivers" of democracy. For example, Hungary, which is considered as democratic, has the lowest quality of democracy score among EU members (see Appendix A). The level of corruption there is high compared to other EU countries as Germany, UK, etc.[17], which in turn might influence market competition in Hungary. Similar patterns can be found in the other CEE countries, especially post-communist. Therefore, the market

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[17] According to data from Bayesian Corruption Indicator index, which is used in the research.

competition, as well as economic growth, might be lower in the country, where the level of corruption (as an indicator of democracy) is higher.

There is supporting evidence that anti-corruption and "for-transparency" laws and agencies can make a positive effect on the democratic level and competition. For instance, Transparency International, which is a global organization that is aiming in fighting against corruption, proves that the worse is transparency in the country the weaker are the democratic institutions, which affect badly the economic situation. Several corruption cases have been revealed recently (such as Panama papers) that showed the "hidden side" of the activities of influential politicians and businessmen that had detrimental effect on the real sector of economy, economic growth and therefore, market competition.

One of the limitations of the study was the choice of model specification and the considered time-period. Moreover, the empirical analysis reveals that there are a lot of unobserved factors that can influence market competition in a country. Therefore, one of the directions for future research could be the use of other statistical methods and increase the number of countries under consideration, as well as time period.

Appendices

A. Quality of democracy index

Countries	2014	2018	change
Italy	6,80	7,30	+0,5
Malta	5,30	5,70	+0.4
Croatia	5,60	5,80	+0.2
France	6,90	7,10	+0.2
UK	7,30	7,50	+0.2
Estonia	8,30	8,40	+0.1
Germany	8,60	8,70	+0.1
Spain	7,00	7,10	+0.1
Austria	7,4	7,4	0
Finland	9,1	9,1	0
Ireland	8,3	8,3	0
Lithuania	8,1	8,1	0
Luxembourg	7,8	7,8	0
Portugal	7,5	7,5	0
Slovenia	7,5	7,5	0
Belgium	7,4	7,3	-0.1
Bulgaria	5,8	5,7	-0.1
Denmark	9	8,9	-0.1
Romania	5,2	5,1	-0.1
Sweden	9,3	9,2	-0.1
Cyprus	6,4	6,2	-0.2
Greece	7	6,8	-0.2
Latvia	8,1	7,9	-0.2
Czech Rep.	7,6	7,3	-0.3
Slovakia	7,1	6,8	-0.3
Netherlands	7,7	7,3	-0.4
USA	8,4	7,4	-1.0
Hungary	5	3,5	-1.5
Poland	8,4	5,3	-3.1

B. Descriptive statistics of TSCS data.

	Mean	Std Dev	Skewness	Min	Max	N of Obs
gci	4.742859	0.512742	0.333019	3.859568	5.852552	330
eiu_demindex	7.867515	1.079532	-1.50733	3.17	9.88	330
gdp_log	4.510861	0.158561	0.488074	4.160264	4.990624	330
pop_log	6.992526	0.68696	0.096959	5.6093	8.512843	330
bci_bci	35.10307	15.99434	-0.1248	7.067162	62.09168	330
dr_eg	76.38719	8.727023	-1.21291	43.86481	89.67472	270
ffp_ued	4.028788	1.456123	0.192757	1	8.1	330
hh_mci	0.067926	0.023043	0.553145	0.03	0.13	270
qd_edi	0.9969602	0.021076	-0.86479	0.88474	1.11716	330
ffp_eco	4.021515	1.259103	-0.16263	1.2	7	330
van_comp	60.367	9.343397	-0.74754	32.2	70	240
fh_ipolity2	9.587121	1.017268	-4.20475	3.916667	10	330

C. Tests for model specification

Testing for random effects
Lagrange Multiplier Test - (Breusch-Pagan)

data: competition ~ democracy + x1 + x2 …
chisq = 285.17, df = 1, p-value < 0.0000000000000002
alternative hypothesis: significant effects

Testing for Fixed or Random effects
Hausman Test

data: competition ~ democracy + x1 + x2 …
chisq = 78.766, df = 2, p-value < 0.0000000000000002
alternative hypothesis: one model is inconsistent

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