25 YEARS OF TRANSFORMATION – THE TRANSITION ECONOMIES IN TODAY'S EUROPE

By

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ABSTRACT

The aim of my thesis is to reevaluate the state of the East-West divide in Europe. I will also explore which factors related to the transition process played important roles in the economic development of the European transition economies over the last two decades. The relative country positions among the European countries are shown through a cluster analysis covering two time periods: 1992-2004 and 2005-2013. I also conduct a panel regression analysis on the 1992-2013 period. I use the EBRD transition indicators and measures of political and economic freedom to explain the economic growth in the European transition economies. This study finds that the East-West divide has not yet disappeared, however, some transition countries made considerable progress. I also show that some aspects of the transition process and the improvement in the scope of economic freedom influenced growth in the transition countries in the long run.

Keywords: transition economies, East-West divide, transition indicators, economic freedom, political freedom, economic development

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INTRODUCTION

Starting from the early 1990s, 28 countries[1] in Central and Eastern Europe and in Central-Asia were involved in the unique and unprecedented process of a political and economic transformation from socialist states into market economies. Although the models of communism differed greatly among the countries, there were some common features and distortions that all systems included. As Bokros (2013) summarizes, these economies were centralized, the bureaucracy was overwhelming, the countries were overindustrialized, consumer choices were limited and all the communist countries were closed economies and closed societies to a greater or lesser extent.

The transition that started more than 25 years ago aimed ultimately to correct these distortions in the economy and the society, and to reestablish democracy and the market rule in these countries. Under the term 'transition', in this thesis I mean the political and economic transformation of the former communist countries into market economies and democratic societies. This transformation is a long and difficult process and as Csaba (2011) and Bokros (2013) argue, the work is not yet completed. The transition considerably affected these economies and societies. The drop in GDP that followed the start of the transition and that was

[1] The formerly independent states: Albania, Bulgaria, Hungary, Poland, Romania
Countries created after the dissolution of Czechoslovakia: Czech Republic, Slovakia
Countries created after the dissolution of the Soviet Union: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan
Countries created after the dissolution of Yugoslavia: Croatia, Bosnia and Herzegovina, Kosovo, Former Yugoslav Republic of Macedonia (FYROM, henceforth Macedonia), Montenegro, Serbia, Slovenia

described as the transformation recession by Kornai (1994), was one of the most unique features of the transition economies and was puzzling both for academics and for politicians.

Several new issues emerged during the transformation and the transition gave rise to a whole new branch of economic studies (Ellman, 2009). The transition process also led to a constant evaluation and reevaluation of the progress and state of the post-socialist countries *vis-à-vis* the Western European democracies or the developing countries in other regions of the world. In this thesis, the focus is limited to the European transition economies, their development and relative position with regard to the Western European countries. Hence the 20 transition countries in my focus are Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia and Ukraine. As I am focusing on the evaluation of the East-West division of Europe, the Central-Asian and the Caucasian transition economies are left out from the analysis. Russia has a unique geographical location and as most of its territory does not lie in Europe, it is arguable that it should have been left out of the analysis. However, I include Russia in my analysis since it is a major player in the economic relations not only with the post-communist European countries, but with Europe as a whole. Kosovo, however, is left out from this analysis. Although it is a European post-communist country, it is excluded because it gained its independence only in 2008 and data would not have been available for the most part of the reference period of the analysis.

Until 25 years ago the Iron Curtain physically separated Eastern Europe from Western Europe but even after its fall, a division remained between the two parts of the continent, in terms of economic development. The gap in the economic development between the Eastern and Western European countries have been confirmed by several studies (Petrakos et al. 2000, Dunford and

Smith 2000, Roaf et al. 2014). Twenty-five years after the fall of the Iron Curtain and the beginning of the political and economic transformation of the socialist countries, it is time again to reevaluate the state of the East-West divide and the development of the post-socialist economies.

In my thesis I will explore the state of the East-West division by grouping the European countries according to their level of economic development. This thesis aims to show that some of the transition countries have indeed experienced considerable development during the past two decades, however, they are still below the development levels of their Western European neighbors. Through this new overview on the relative positions of the European countries, important policy conclusions can be drawn both regarding the future of the EU and the new EU member states and also regarding those transition economies which are candidate countries (Albania, Macedonia, Montenegro, Serbia) or potential candidates (Bosnia and Herzegovina and Kosovo) (European Union, n.d.).

Regarding the methodology for examining the relative country positions and determining the state of the East-West divide, I will carry out a cluster analysis covering two time periods: 1992-2004 and 2005-2013. By using these time periods, I will show how the clustering of the European countries was different in the period prior to the EU accession from that after the accession of several Central and Eastern European countries, which will also represent the relative country position after the recent global crisis.

Many studies (Neuhaus 2006, Grinberg 2011, Roaf et al. 2014) found that the transition economies today are more diverged in terms of their level of development than they were at the beginning of the transition. This claim, however, is difficult to verify. The statistical data from the communist period and arguably from the first few years of the transition were often either missing or unreliable. Nevertheless, it is important to analyze the different development paths of the

countries since the fall of the communist system. By examining a more than two decades, the biases from the distorted data from the early years of the transition can be overcome.

In my research I will examine the possible explanatory factors of the different growth experiences of the transition countries. The importance of the socialist past and the features of the transition process for the development of these economies have also been researched previously (Keren and Ofer 2008, Peev and Mueller 2012, Piatek et al. 2013), however, the research appears to be inconclusive. I will aim to find out to what extent was the economic development of the European post-socialist countries was affected by the course of the transition. Based on these results I will aim determine important policy lines regarding the continuation and the sustainability of the transition process.

The second half of the thesis will be devoted to determine the importance of the transition features (the progress of the transition reforms and the changes in political and economic freedom) for the development of the European post-socialist countries during the last two decades. I intend to show this relationship over a longer time period than it is currently discussed in the literature. The methodology in this part will be the Ordinary Least Square (OLS) regression techniques with country and time fixed effects on a panel data of 20 countries over 22 years, between 1992 and 2013.

My thesis is organized in the following way. Chapter 1 is a literature review in which I provide an overview of the relevant literature on the state of the East-West divide and on the research that analyzed the development of the transition economies. I focus on those studies that concentrated on the progress of the transition and the changes in economic and political freedom.

In the next chapter, I describe the variables used for the cluster analysis and the regression analysis, and I introduce the respective methodologies. The next two chapters are dedicated to the results from the empirical analysis. Chapter 3 present the results of the cluster analysis, and Chapter 4 is dedicated to the results obtained from explaining the economic growth in the European transition countries. In the last part, I draw some conclusions from the empirical analysis on the state of the East-West divide and the economic development of the transition countries. Finally, I reflect on some important policy priorities that would help the transition countries to improve and strengthen their positions in Europe.

1. LITERATURE REVIEW

In this chapter I review the existing literature on the transition countries and their development paths during the last few decades. The post-socialist countries have been a widely discussed topic in the literature ever since their transformation began. The focus of these studies is manifold, however, I concentrate on those that examine the possible division between the Eastern and Western European countries. I also review studies that investigate the effect of the transition process on growth and evaluate the relationship between growth and various features that are in connection to the transition process such as the increase in political and economic freedom.

One recurring question in the literature is how persistent the division between the Eastern and Western European countries is in terms of their political and economic development. Studies in this respect tend to point out that the decades after the political change have resulted in a more dispersed European region in terms of economic development. Petrakos et al. (2000) analyzed the geographic aspects of growth, development and welfare in the European countries and confirmed a lasting East-West divide. The macroeconomic performance among the transition economies has also shown great variation (Neuhaus 2006, Grinberg 2011). Many studies (Fischer and Sahay 2000, Keren and Ofer 2008, Campos and Coricelli 2013) found that the Central European region has performed better than other transition countries in South-East Europe or the former Soviet Union countries, the latter having been found as the worst performers.

Furthermore, Europe is not only divided between East and West, but both parts are heterogeneous within themselves. Petrakos et al. (2000) showed that the Western and the Eastern parts of the continent are characterized by a highly unequal regional development. The northern part of Western Europe is the most developed, and the southern transition economies are the least developed, placing the Mediterranean countries and Central Europe in the middle. Based on the productivity and the employment rates of the European countries, Dunford and Smith (2000) established four categories from the Western European and the Central and Eastern European countries. The categories they defined group together the countries of a similar pattern as Petrakos et al. (2000) did. A recent report of the International Monetary Fund (Roaf et al. 2014) provides a comprehensive overview on the macroeconomic development of the transition economies during the past 25 years. The study emphasizes the widening disparities among the different regions of Europe. According to their analysis, countries in the CEE region and the Baltics have advanced more rapidly and now are closer to the development level of the Western European countries than that of other transition economies in South-East Europe or the former Soviet Union countries.

Based on previous findings in the literature, the East-West dividing line may no longer merely separate the Western countries from the transition economies. Furthermore, it is also shown that the differences in the levels of development are now much bigger among the transition economies than at the beginning of the transition. I will aim to confirm these findings, and in doing so, the cluster analysis of Roaf et al. (2014) served as an inspiration for my analysis, however, I will use different variables to capture the state of the economic development.

The importance of the socialist past and that of the transition process are also frequent topics in the literature. Keren and Ofer (2008) used the Kutnets normality test to compare the post-socialist countries to an assumed normal path of development and thus determine the extent to which the socialist past (namely the prohibition of private capital ownership, overindustrialization, centralization and rampant corruption) of these countries is defining. They found that all the former socialist countries are below the normality curve, thus the socialist past is still an important feature defining the development of these countries. They also point out that there is a dividing line between the new EU member states and those who were members of the Soviet Union. The new EU member countries were more successful and are closer to the normality curve, while for the former Soviet Union member countries the burden of the socialist past is more dominant.

Many studies attempt at estimating the progress of the transition process by using the transition indicators of the European Bank for Reconstruction and Development (EBRD). These studies are also relevant for my research with regard to explaining the growth of the European transition countries. I will also use the transition indicators as explanatory variables in order to determine the relationship between the different components of the transition process and the economic development during the past more than 20 years. In the previous studies the time periods varied, but neither of the studies were conducted on a time period that covered more than two decades from the start of the transition. Therefore, my research will contribute to the literature by reviewing the relationship between economic growth and the transition process over the longest possible time period since the transformation has begun. Fidrmuc (2000) investigated the relationship between the economic and political progress during the transition. He composed a liberalization index from the average values of the EBRD transition indicators and found that economic liberalization has a positive effect on growth in general, however, in the early stage, the

effect is U-shaped. Fischer and Sahay (2000) also used the transition indicators to explain the growth performance in 25 transition countries. They showed that structural reforms are conducive to economic growth and furthermore, that among the transition indicators, price liberalization and small-scale privatization contributed to growth more than other variables. Havrylyshyn and Rooden (2002) explained the growth rate in 25 transition countries by measures of initial conditions, an index of structural reform (also based on the EBRD transition indicators) and inflation as a measure of macroeconomic stability. They included the lagged values of the structural reform index as well. The contemporaneous measure of the structural reforms was found to be negative, however, the lagged values were positive, thus the overall structural reforms are beneficial for economic growth.

A considerable part of the literature deals with questions regarding the importance of the changes in the economic and political freedom for economic development. The effect of political freedom on economic growth does not appear to be conclusive. Some studies find positive relationship between different measures of political freedom and growth (Rigobon and Rodrik 2005, Benyishay and Betancourt 2010). However, Helliwell (1994) showed that increased democracy is associated with a slowdown of growth. Similarly, Fidrmuc (2000) concluded that in the early phase of transition, democracy affects growth negatively and the relationship later becomes insignificant. The relationship between political freedom and economic performance was found to be U-shaped by Apolte (2011), meaning that an increase in political freedom from a moderate level results in lower economic growth, and only an increase from a minimal or a very high democracy level can be beneficial for growth.

The literature regarding the relationship between the economic freedom and economic growth is more unified. Several studies (Heckelman 2000, Ali and Crain 2002, Dawson 2003, Vega-Gordillo and Álvarez-Arce 2003, Weede 2006) have established a positive relationship between the level of economic freedom and the level or pace of economic growth. Regarding the direction of the relationship, some studies (Hanson 2000, Dawson 2003) point out that a higher level of economic development also has an impact on the level of economic freedom, therefore the line of causation may go in both directions.

Two recent studies in the field were those of Peev and Mueller (2012) and Piatek et al. (2013). Both groups of researchers investigated the possible causal link between political and economic freedom and the prospects of economic growth. Both studies found that a higher economic freedom has a positive impact on economic growth. On the other hand, regarding political freedom, the results of both studies suggested that political freedom does not seem to contribute to the economic growth of the countries. Peev and Mueller (2012) showed that the effect can be even negative, as more democratization results in a larger public sector and public deficit which represents an obstacle for growth. Piatek et al. (2013) argued that while the improvement in political freedom is neutral for economic transition, more economic growth leads to an increase in the political freedom in the post-socialist countries.

I will not aim to establish a causal relationship, however, I build on these studies in two ways. As both factors (economic freedom more evidently than political freedom) appear to be affecting economic development, I will analyze the role of these factors in the economic development of the post-socialist European countries over the last two decades. Furthermore, the variable choices in these studies helped me determine my variables of interest.

The literature on the development of the post-socialist countries during the decades following the political change is wide and covers many questions. Twenty-five years after the fall of the Iron Curtain, the reevaluation of the progress of the post-socialist countries became relevant again. The debate on the importance of the socialist past and the transition experience (improved economic and political freedom, structural and institutional reforms) is also evergreen. In explaining the development of the post-socialist countries over the past 25 years, it is important to further investigate this issue as it can be an important determinant for future policy decisions.

2. RESEARCH METHODOLOGY

This chapter introduces the research methodology used in this thesis. The first part of the chapter is devoted to the cluster analysis whereby I first introduce the data, then provide a methodological description of the clustering process. In the second half of the chapter, I describe the data used in the panel regressions to explain growth in the transition countries, which is followed by the introduction of the model specifications.

2.1. THE CLUSTER ANALYSIS

2.1.1. Description of the data

To capture the state of the economic development, six variables are used. The variables are shown in Table 1 below.

Table 1. Variables and data sources of the cluster analysis

Variable	Source
GDP per capita (constant 2005 US$)	World Development Indicators, World Bank
Life expectancy at birth, total (years)	World Development Indicators, World Bank
Employment in agriculture (% of total employment)	World Development Indicators, World Bank
Manufacturing value added (% of GDP)	World Development Indicators, World Bank
Total natural resource rents (% of GDP)	World Development Indicators, World Bank
Corruption Perception Index	Transparency International

The variables above were chosen to reflect different aspects in a country's economy that are connected to the state of development. The GDP per capita is an indicator for the income level of a country and is one of the most often used indicators to characterize a country's economic development and income level. As Acemoglu and Johnson (2006) showed, a higher life expectancy is associated with a higher level of overall economic development. Based on their argument, I use life expectancy as an indicator for the general state of the public health. The share of employment in agriculture, the manufacturing value added and the share of natural resource rents are intended to show the differences in the sectorial structure of the economies that are also closely related to the general level of development. According to Echevarria (1997), a high share of employment in the agriculture sector can be associated with a lower level of development. Furthermore, as it was shown by Ngai and Pissarides (2004), historically it appears so that there is a shift from the agricultural sector towards the manufacturing- and eventually the services sector as countries develop.

I built on these findings when I decided to include the share of employment in agriculture and the share of manufacturing value added in the analysis. In line with the previous findings I assume that a more developed country would have a lower agricultural employment and a higher share of manufacturing value added than a country at a lower development level. Even so, the most developed countries are expected to have a low share of manufacturing value added as well, since these economies would have a high emphasis on their service sectors. The availability of natural resources in a country is also often connected with the level of development. Based on the work of Sachs and Warner (2001), due to the resource curse, resource-rich countries often perform worse in terms of economic development than resource-poor countries. Some of the transition countries, the prime example being Russia, are resource-rich countries, which makes it even more justified to

include the variable for natural resource rents in the analysis as an indicator of the natural resource availability of the countries. Finally, the level of corruption is also an important indicator for the level of development. According to Shao et al. (2007), a higher level of corruption corresponding to a lower level of economic development. In the case of the Corruption Perception Index, due to a methodological change in the way of calculating the index that made the data from the consecutive years incomparable with the data of 2011 and before (Transparency International, 2012), the data was only used until the year 2011.

Based on the methodological advice of Mooi and Sarstedt (2011), before the cluster analysis, I verified that there is no extreme level of correlation between the variables. Thus they are sufficiently different from each other to be used for identifying clusters. The correlation tables for both time periods are shown in the Appendix.

2.1.2. Methodology of the cluster analysis

The goal of a cluster analysis is to identify groups among the observations in a way that the difference between the groups is maximized and is minimized within a group (Burns, R.P. and Burns, R., 2008). The cluster analysis in this thesis aims to determine the relative positions of the European countries based on their level of economic development. Two time periods are covered: 1992-2004 and 2005-2013. I conducted a hierarchical clustering by using average values of the variables over both time periods. As a distance measure, Euclidean distance was used and the clustering was conducted based on the Ward's minimum variance method. My dataset does not contain outliers and as Punj and Stewart (1983) showed; in such cases, the Ward method tends to perform better than other methods.

Initially 37 countries were intended to be included in the cluster analysis. 20 of these were countries with a communist heritage[2]. The rest are to be called Western European countries[3], that is to say, countries which did not experience communism. I found data availability overall satisfactory, however, there were problems with the missing values in the case of a few countries. In the case of Bosnia and Herzegovina, the values of the Corruption Perception Index were missing in both periods, and data for the share of employment in the agriculture sector was only available after 2006. Both for Bulgaria and for Spain, data on the manufacturing value added was unavailable, and this data was also missing in the case of Romania after 2000. Consequently in the period between 1992 and 2004, Bosnia and Herzegovina, Bulgaria and Spain were not categorized by the cluster analysis, while in the 2005-2013 period in addition to these, Romania was also left out. Thus eventually in the 1992-2004 period 34 countries were categorized, while in the 2005-2013 period 33 countries were included in the analysis.

2.2. GROWTH IN THE TRANSITION COUNTRIES

2.2.1. Description of the panel data

To explain the economic growth in the transition economies of Europe during the period of 1992-2013, I used variables that are connected to different aspects of the transition. First, I used the EBRD transition indicators as explanatory variables. The transition indicators aim to measure the progress of the transition process in six areas: large-scale privatization, small-scale

[2] Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Ukraine
[3] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom

privatization, governance and enterprise restructuring, price liberalization, trade & forex system and competition policy. As it is described on the EBRD website (EBRD (n.d.)), the indicators have values between 1 (little or no change) to 4+ (meaning that the country achieved the standards of a developed market economy).

The second set of explanatory variables were measures of the political and economic freedom. As measures for the change in political freedom, I used the Polity 2 index[4] of the Polity IV project and the political rights and civil liberties indices of the Freedom House Organization. To measure the scope of economic freedom, I used the Index of Economic Freedom from The Heritage Foundation. It is important to keep in mind the differences in the content of these indices, as their scales and the interpretation of a lower or higher score can be very different. The Polity 2 index can have values between -10 (meaning that the country is strongly authoritarian) and 10 (meaning that the country is strongly democratic). The values of the Political rights index and the Civil liberties index can range from 1 to 7, but in their case, a lower value represents more freedom. The Index of Economic Freedom grades countries on a 0 to 100 scale, where a higher score means more freedom.

In the analysis, I controlled for other possibly important determinants of economic growth, such as the openness to trade (trade as a percentage of GDP), FDI inflows to the country and inflation as an indicator of macroeconomic stability. The dependent variable in the analysis was the GDP per capita measured in constant 2005 US$, of which the natural logarithm is used. The source of the listed control variables and of the dependent variable is the World Development

[4] This version of the Polity variable is adjusted to be suitable for time-series analyses.

Indicators dataset of the World Bank. The list of the variables and the summary statistics are shown in Table 2.

Table 2. Variables and descriptive statistics of the panel regression analysis

	Number of observations	Mean	St. Dev.	Min	Max
Dependent variable:					
GDP per capita (constant 2005 US$)	421	6027.28	4336.59	570.10	20987.05
Variables of interest:					
Large scale privatization	399	2.87	0.91	1.00	4.00
Small scale privatization	399	3.64	0.80	1.00	4.33
Governance and enterprise restructuring	399	2.34	0.77	1.00	3.67
Price liberalization	399	3.91	0.60	1.00	4.33
Trade & Forex system	399	3.69	0.95	1.00	4.33
Competition Policy	399	2.25	0.75	1.00	3.67
Polity 2 political regime index (values from -10 to 10)	385	7.16	4.04	-7.00	10.00
Political rights index (1-7)	410	2.50	1.61	1.00	7.00
Civil liberties index (1-7)	410	2.70	1.37	1.00	6.00
Index of Economic Freedom. overall score	342	58.30	9.28	29.40	78.00
Control variables:					
Trade (% of GDP)	414	99.32	31.08	23.22	181.37
Foreign direct investment, net inflows (% of GDP)	400	4.52	5.51	-16.15	50.97
Inflation, consumer prices (annual % change)	394	55.49	295.99	-1.28	4734.91

2.2.2. Model specifications

To explain the change in the GDP per capita between 1992 and 2013, I conducted panel data regressions with country and time fixed effects in order to control for various country specific differences and for trends in economic growth unrelated to the explanatory variables. The analysis was conducted over 22 time periods and using 20 transition economies[5]. The panel is unbalanced, meaning that there are missing observations for some cross-sectional units. According to Wooldridge (2012), an unbalanced panel does not cause problems unless the reasons why some observations are missing is correlated with the idiosyncratic errors, u_{it}. In my case, the unbalanced nature of the dataset would be problematic if the reasons for missing values in some countries and in some years were correlated with the unobserved factors that can also affect the level of GDP per capita over time. I accept the assumption that the reasons for missing data is uncorrelated with such unobserved factors, therefore, using an unbalanced dataset is acceptable.

2.2.2.1. Growth and the progress of transition

I first looked at the relationship between the transition indicators from the EBRD and economic growth.

(1) $\ln GDP_{it} = \alpha_i + \beta_j EBRD_{it} + u_{it}$

In equation (1), no control variables were used. The EBRD variable stands for the six components of the transition indicators. These will be included in the regression one by one to make it possible to distinguish the differences in the effect of the components on GDP per capita.

[5] Unfortunately, the EBRD transition indicators were missing for the Czech Republic, therefore the regressions where the transition indicators are the explanatory variables, only 19 countries are included.

I continued by including other possible explanatory variables that can explain economic growth (equation (2)). The variables of trade, FDI and inflation were logarithmically transformed as their distribution was found to be lognormal.

(2) $\ln GDP_{it} = \alpha_i + \beta_j EBRD_{it} + \beta_7 \ln Trade_{it} + \beta_8 \ln FDI_{it} + \beta_9 \ln Inflation_{it} + u_{it}$

Equation (3) is a further extension of equation (2). I included the lagged value of the dependent variable on the right-hand side to check how much of the variation in the GDP per capita in a given year and in a given country can be explained by the GDP per capita values in the previous years. To decide upon the number of lags to be included, I carried out a regression of 6 lags on the LHS variable. The first 3 lags were significant in this regression, thus I decided to include 3 lags to control for the endogenous changes in GDP per capita.

(3) $\ln GDP_{it} = \alpha_i + \beta_j EBRD_{it} + \beta_7 \ln Trade_{it} + \beta_8 \ln FDI_{it} + \beta_9 \ln Inflation_{it} + \beta_{10} \ln GDP_{i,t-1} + \beta_{11} \ln GDP_{i,t-2} + \beta_{12} \ln GDP_{i,t-3} + u_{it}$

I reran equations (1) – (3) by including the first lags of the transition indicators as well, to check for a delayed effect of a change in any of the indicators.

2.2.2.2. Growth and the scope of political and economic freedom

To investigate the relationship between economic growth and the measures of political and economic freedom, I estimated similar models to those presented in the previous sub-section but this time, the explanatory variables were the Polity 2 index, the political rights (FH_PR in the equations below) and the civil liberties (FH_CL) index and the Index of Economic Freedom (IEF).

I estimated first a basic regression, without any control variables, then I proceeded by including the controls for trade, FDI and inflation, after which I expanded the model further with the lagged values of the dependent variable. The models estimated were the following:

(4) $\ln GDP_{it} = \alpha_i + \beta_1 Polity2_{it} + \beta_2 FH\_PR_{it} + \beta_3 FH\_CL_{it} + \beta_4 IEF_{it} + u_{it}$

(5) $\ln GDP_{it} = \alpha_i + \beta_1 Polity2_{it} + \beta_2 FH\_PR_{it} + \beta_3 FH\_CL_{it} + \beta_4 IEF_{it} + \beta_5 \ln Trade_{it} + \beta_6 \ln FDI_{it} + \beta_7 \ln Inflation_{it} + u_{it}$

(6) $\ln GDP_{it} = \alpha_i + \beta_1 Polity2_{it} + \beta_2 FH\_PR_{it} + \beta_3 FH\_CL_{it} + \beta_4 IEF_{it} + \beta_5 \ln Trade_{it} + \beta_6 \ln FDI_{it} + \beta_7 \ln Inflation_{it} + \beta_8 \ln GDP_{i,t-1} + \beta_9 \ln GDP_{i,t-2} + \beta_{10} \ln GDP_{i,t-3} + u_{it}$

I estimated equation (4) – (6) by additionally including the lagged values of the variables of political and economic freedom.

It is possible that other characteristics that are not included in the models would influence the level of GDP per capita. These characteristics could be manifold, from different productivity levels to differences in the quality of the human capital. Including fixed effects in the models is an effective way to control for unobserved heterogeneities for which no reliable data would be available, however, we have to be aware that the error terms may contain the effect of some of these omitted variables. In my analysis I do not aim to establish a causal relationship between the explanatory factors and the dependent variable, therefore, the results obtained from the above introduced models can only be interpreted as correlation between the variables.

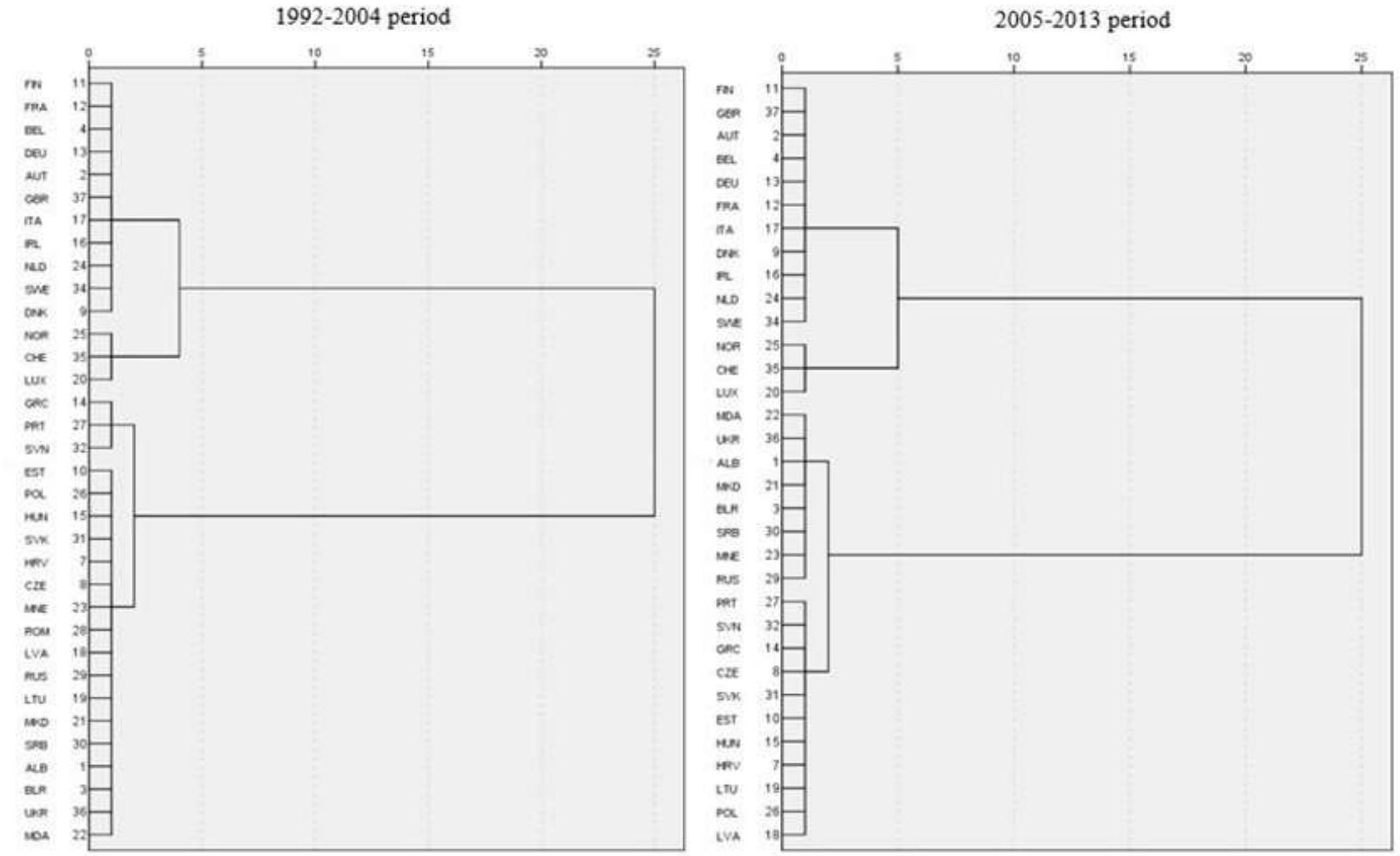
3. RESULTS FROM THE CLUSTER ANALYSIS

In this chapter I presents the results obtained from the cluster analysis that was conducted by using the data and based on the methodology described in the previous chapter. I present the results of the cluster analysis in the two time periods and I compare and interpret their meaning.

After conducting the cluster analysis, the first task is to decide upon the number of clusters. This decision may be rather subjective, however, the dendrogram can give some hint. Dendrograms are the most illustrative way of presenting results from a cluster analysis. As Burns, R. P. and Burns, R. (2008) explains, in the hierarchical clustering process, every country starts out as a separate cluster. The clusters are then formed by grouping together those countries that are the most similar based on the variables specified. The vertical lines on the dendrograms define which countries fall into the same cluster, while the horizontal lines represent the distance between the clusters. The countries form two very distinct groups overall, and each group can be further divided into two subgroups, therefore, it appears that four final clusters would be optimal and sensible in both time periods. The dendrograms for both time periods are shown on Figure 1 on the next page.

After the clustering was finished, I verified the distance between the clusters by a one-way ANOVA analysis. The ANOVA tables are shown in the Appendix. The variables of manufacturing value added and the share of natural resource rents appear to be problematic; for these variables, the significance of the F-value is higher than 0.05, which means that these are not reliable enough for distinguishing between the clusters. This is true for both time periods. However, I decided to use these variables, based on the theoretical argumentation that these variables can be important to determine the level of development of a country.

Figure 1. Cluster of the European countries[6]



[6] The numbers next to the country names are automatically generated by the SPSS software based on the original database. As the countries were entered in alphabetical order, the numbers correspond to the alphabetical order of the countries.

At a first glance at the clusters in the 1992-2004 period, it is clear that the transition economies form a distinct cluster. The only exception is Slovenia[7], which falls in the same cluster as Portugal and Greece. The length of the lines on the dendrograms represents the distance between the clusters. It is unambiguous that the cluster of Greece, Portugal and Slovenia, and thus their level of development, is closer to the cluster of the transition economies than to the other two clusters. Regarding the other countries of Europe, it is not surprising that most of the Western European countries are members of the same cluster and that Norway, Switzerland and Luxembourg form a distinct cluster. The difference between these two clusters is bigger compared to the distance between the clusters of the transition countries and that of Greece, Portugal and Slovenia. The distance between the two big groups of countries is enormous.

Comparing the clusters in the 1992-2004 period to those of the 2005-2013 period, it is salient that not much change has happened concerning the Western European countries. Cluster memberships remained the same, however, the distance between these clusters increased somewhat. On the other hand, many transition economies changed their cluster memberships and are now clustered together with Greece, Portugal and Slovenia. All of these countries are those who became EU members in 2004 or later (hereafter I will sometimes refer to them as new EU members or as NEU). The countries that remained members of Cluster 1 were all either members of the former Soviet Union or of Yugoslavia.

[7] However, Slovenia's membership in the same cluster as Greece and Portugal is primarily due to its level of GDP per capita. It cannot be argued unquestionably that its development level was indeed significantly higher than that of the other post-communist countries. The more we take into consideration the state of the democratic and institutional framework, the more similar Slovenia is to the other transition economies.

Table 3. Cluster characteristics

Cluster 1	***Cluster 2***
- Lowest GDP per capita - Lowest life expectancy - Highest employment in agriculture - Highest (Second lowest) share of manufacturing value added - Second highest (Highest) share of natural resource rents - Lowest corruption perception index	- Second lowest GDP per capita - Second lowest life expectancy - Second highest employment in agriculture - Second lowest (Highest) share of manufacturing value added - Lowest (Second lowest) share of natural resource rents - Second lowest corruption perception index
Cluster members, 1992-2004: Albania, Belarus, **Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania**, Macedonia, Moldova, Montenegro, **Poland**, Romania*, Russia, Serbia, **Slovakia**, Ukraine	*Cluster members, 1992-2004:* Greece, Portugal, Slovenia
Cluster members, 2005-2013: Albania, Belarus, Macedonia, Moldova, Montenegro, Russia, Serbia, Ukraine	*Cluster members, 2005-2013:* **Croatia, Czech Republic, Estonia**, Greece, **Hungary, Latvia, Lithuania, Poland,** Portugal, **Slovakia,** Slovenia
Cluster 3	***Cluster 4***
- Second highest GDP per capita - Second highest life expectancy - Second lowest employment in agriculture - Second highest share of manufacturing value added - Second lowest (Lowest) share of natural resource rents - Second highest corruption perception index	- Highest GDP per capita - Highest life expectancy - Lowest employment in agriculture - Lowest share of manufacturing value added - Highest (Second highest) share of natural resource rents - Highest corruption perception index
Cluster members, 1992-2004: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Sweden, United Kingdom	*Cluster members, 1992-2004:* Luxembourg, Norway, Switzerland
Cluster members, 2005-2013: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Sweden, United Kingdom	*Cluster members, 2005-2013:* Luxembourg, Norway, Switzerland

*Romania is dropped from the cluster analysis for the 2005-2013 period due to missing values.
Bolded: countries that changed membership between the two time periods.
Underlined: cluster characteristics that is different in the two time periods. Characteristic corresponding to the 2005-2013 period is in the brackets.

Considering the characteristics of the clusters, all four clusters are comparable in the two time periods. This means that although some countries may have changed their memberships, it is because the country characteristics have changed over time and not because the features clustering the countries are different in the two time periods. Only some minor changes were observed in the cluster characteristics, however, these are consistent with the changes in cluster membership of the countries. These changes will be discussed below. Table 3 above presents the characteristics of the clusters. I give the characteristics in relative terms by labeling them with the terms 'highest', 'second highest', second lowest' and 'lowest' to give a clear description of the positions of the clusters relative to each other. The table also contains the cluster membership in both time periods. Those countries which changed their membership are bolded. For those characteristics where a change occurred between the two periods, both are shown and underlined. The labels in the brackets corresponds to the 2005-2013 period.

Cluster 1 appears to have the grimmest attributes among all the other clusters. It has the lowest GDP, the lowest life expectancy, high employment share in agriculture, initially very high although in the second period the low share of manufacturing value added (a change on which I will later elaborate), the share of natural resource rents is high and the corruption perception index is low, indicating that the level of corruption is high. Overall it appears that the countries in Cluster 1 are at the lowest level of development in this comparison. In the 1992-2004 period, Cluster 1 encompasses the transition countries, with the exception of Slovenia. While the new EU member countries all moved away from Cluster 1 based on the analysis of the 2005-2013 time period, for the remaining transition economies in Cluster 1, a disturbing feature is that the average values for the cluster (see Appendix for the tables) have not changed considerably. Regarding the averages of the GDP per capita and of the Corruption Perception Index for Cluster 1, the figures had even

decreased. The average of the natural resource rents had increased considerably, but it has to be noted that the high share and the increase in the value between the two time periods are both caused by Russia. Overall it is highly alarming that these transition countries (which are all either former members of the Soviet Union or of Yugoslavia) not only have been unable to change their position relative to the other European countries, but have not experienced much economic development either.

Cluster 2 is the one that had Slovenia as a member already in the 1992-2004 period, and to which the new EU member transition economies moved after 2005. Cluster 2 is closer to Cluster 1 than to the other two clusters, thus the level of economic development of its member countries is considerably lower than that of those in Cluster 3 or 4. Concerning the average values of the variables for Cluster 3, there is no considerable change. However, the fact that eight transition economies managed to transfer from Cluster 1 to Cluster 2 signals that these countries experienced a significant improvement in their state of development.

Nevertheless, the lack of any considerable improvement in the average figures for Cluster 2 does not necessarily indicate a long-run lack of economic development. During the recent global financial crisis and even more the European sovereign crisis, the European countries had very different experiences. The countries in Cluster 2 were hit especially hard. Greece and Portugal were troubled as they neglected the fiscal discipline, which is essential for the functioning of the European Monetary Union (Pisani-Ferry, 2014). The new EU member states also had several features that made them vulnerable. The Central and Eastern European region depended highly on the state of the global markets (one notable illustration of this is that the share of foreign bank ownership was over 80% by 2009 (Epstein, 2013)), which contributed greatly to the vulnerability of these countries. This vulnerability was further exacerbated by their domestic policies, which

resulted in high external debt levels (for example in Estonia, Hungary[8] and Latvia) or inadequate international competitiveness (the Baltics states) (Marer, 2013). The recovery from the crisis has started, but it is slow and fragile in many countries (Roaf et al. 2014) and Greece's future is still unclear at the moment. All in all, the apparent stagnation in the development level of this cluster may be an outcome of the crisis experience. Verifying or rejecting this assumption, however, would need further investigation and most likely the analysis should be done on a time frame that includes more post-crisis years to make it possible to determine when the recovery period finished and from which point the countries resumed their development path.

Most Western European countries are members of Cluster 3, and the attributes of the cluster indicate a generally high level of economic development. Furthermore, in respect to all indicators, the cluster averages changed in a favorable way: the GDP per capita and the Corruption Perception Index had increased, while the share of employment in agriculture and the manufacturing value added had decreased, and the other two indicators (life expectancy and total natural resource rents) had not changed significantly. Thus these countries appear to be in a solid development position not only compared to other European countries but in absolute terms, as well.

Cluster 4 groups the countries with the highest development based on the chosen variables. However, it is important to remember that these countries are all economies where one sector of the economy dominates (the banking and financial sectors in Luxembourg and Switzerland, and the energy sector in Norway) and makes the countries achieve their very high GDP per capita values. This special feature of these countries might be the reason why they form a separate cluster, as the biggest difference between the average values of Cluster 3 and Cluster 4 is in the value of the GDP per capita. Nevertheless, these countries have the highest GDP per capita, the highest life

[8] Hungary also suffered from a very high debt-to-GDP ratio and a huge government budget deficit (Marer, 2013).

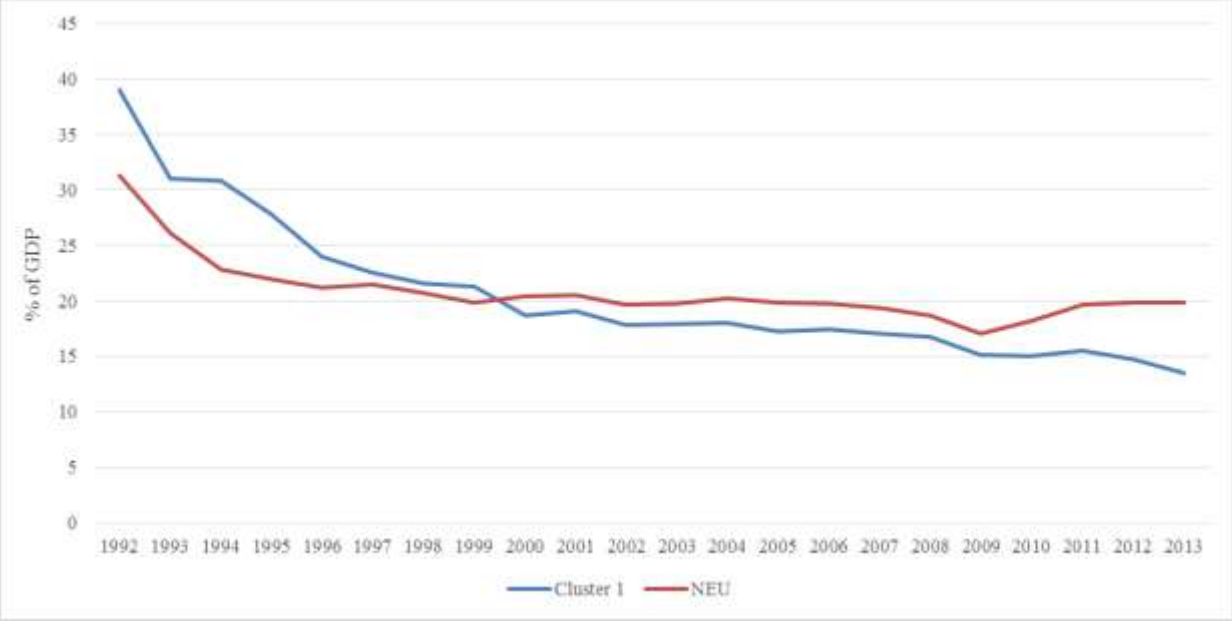
expectancy, the share of employment in agriculture and the value of manufacturing value added are low, the Corruption Perception Index is high. The only factor that seems to be out of place is the high share of natural resources. However, this result is produced entirely by Norway. While in both Luxembourg and Switzerland, the average for the natural resource rents stand at a 0.06 percentage of GDP, the same value is more than 14% for Norway. Norway is a resource-rich country that uses its resources efficiently, invests a lot into renewable energy sources and is capable of being self-sufficient in natural gas and oil found under the North Sea (the official site of Norway in the UK, (n.d.)). Thus for Norway, the high share of natural resource rents in GDP is definitely not hindering feature for development. In the case of Cluster 4 as well, all characteristics changed in a favorable direction. As I noted earlier, the distance between Cluster 3 and Cluster 4 has increased over time, meaning that the difference in the level of development has increased among these countries. The countries of Cluster 4 are by far the most highly developed countries of Europe.

There were some changes in the relative cluster characteristics between the two periods. The biggest change was concerning the manufacturing value added characteristic of Cluster 1 and Cluster 2. While between 1992 and 2004, Cluster 1 had the highest share of manufacturing value added, and Cluster 2 had the second lowest, between 2005 and 2013, Cluster 1 only had the second lowest share and Cluster 2 the highest share of manufacturing value added.

I examined the evolution of the manufacturing value added share in the GDP in the transition countries. It became clear that in the early years of the transition, the share of the manufacturing value added was very high in all countries, but was higher in the countries that remained members of Cluster 1 over the whole time period. With time, the share decreased in all

countries. One of the major distortions of the communist system was the overindustrialization of the economy, thus the initial very high share of manufacturing value added can be a sign of this. The consecutive decrease is caused in part by the correction of this distortion by decreasing the importance of the manufacturing industry sector, but it also signals a general change in the structure of the industry sector. The overwhelming emphasis of the communist system on the industrial production was accompanied with the negligence of the services sector. Therefore, an increase in the relative importance of the services sector in these economies was also contributing to the falling share of manufacturing value added. However, while in the case of the new EU member state countries the share stabilized around 20% of the GDP, in Albania, Belarus, Macedonia, Moldova, Montenegro, Russia, Serbia and Ukraine, the share of the manufacturing value added kept decreasing (hereafter Cluster 1 refers to these eight countries).

Figure 2. The share of manufacturing value added in Cluster 1 and NEU, 1992-2013



After the eight countries changed cluster membership, Cluster 1 also became the one with the highest share of natural resource rents. This change is entirely induced by Russia's presence. The share of natural resource rents in Russia was already high initially and increased further to reach a level around 33% of GDP for the early 2000s. The shares decreased somewhat after 2009, which can be explained by the oil price shock the country has experienced during the recent crisis. Nevertheless, Russia still has very high share of natural resource rents and is highly dependent on its natural resources.

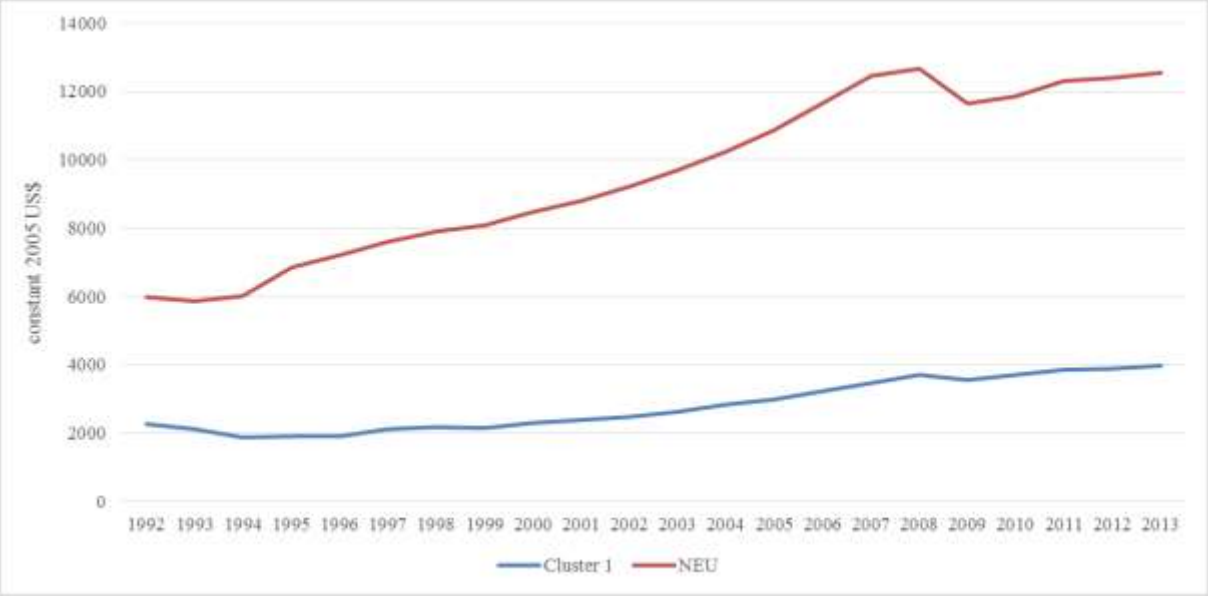
The major conclusion from the cluster analysis appears to be that Europe is indeed divided; however the division does not lie along an East-West line, but between the North-Western part of Europe (Cluster 3 and 4), and the Southern European countries and the transition economies in Europe (Cluster 1 and 2). Furthermore, this division appears to be quite stable. Only eight transition economies moved from Cluster 1 to Cluster 2, but neither of the countries in these clusters have moved to Cluster 3 or 4, which would mean a real stepping over the dividing line.

The transition economies clearly became more diverse in terms of their development. The EU membership may have played an important role in this. The EU is commonly accepted as being beneficial for the newly joined member states, due to its favorable influence on the countries' domestic policy formation (Fischer and Sahay 2000, Keren and Ofer 2008, Epstein 2014). It is most likely that the development the NEU countries have experienced is not unrelated to the fact that most of them were joining the Union in the early 2000s, with Croatia being the last to join in 2013. The harmonization process that precedes the accession has most certainly contributed significantly to the economic development of these countries. However, it has to be noted by Csaba (2009a) that the EU membership created only the possibility for domestic reforms, but not the

certainty for convergence and sustainable economic development. Therefore, in the future, the EU's positive influence is likely to be missing.

The two groups of transition countries (Cluster 1 and NEU) have experienced very different evolution in their GDP per capita. I highlight this variable as it is the most commonly used indicator to show economic development. The following graphs shows how the GDP per capita changed in the two groups of transition countries from 1992 until 2013.

Figure 3. GDP per capita in Cluster 1 and NEU, 1992-2013



While the NEU experienced a massive upswing in their GDP per capita over the years (note that the graph is plotted based on the yearly average values of GDP per capita in the groups, thus it masks the country specific differences), the increase in the income level of the Cluster 1 countries was mild at best. It is an important question to examine what a possible explanation could be for this difference. I chose to focus on the progress of the transition process and the changes in the scope of economic and political freedom. In doing so, the reasons were twofold. Firstly, as the models of communism varied greatly among the former communist countries, and so did the

manner and the pace of the transformation. Thus these differences may be, at least partially, helpful in explaining the long-lasting differences. Secondly, I observed a strong pattern, that the NEU countries performed better both regarding the EBRD transition indicators, and also any measure of political or economic freedom. The change in these indicators and the difference between the two country-groups are shown on the graphs below.

Figure 4. EBRD transition indicators and the scope of economic and political freedom in Cluster 1 and NEU, 1992-2013

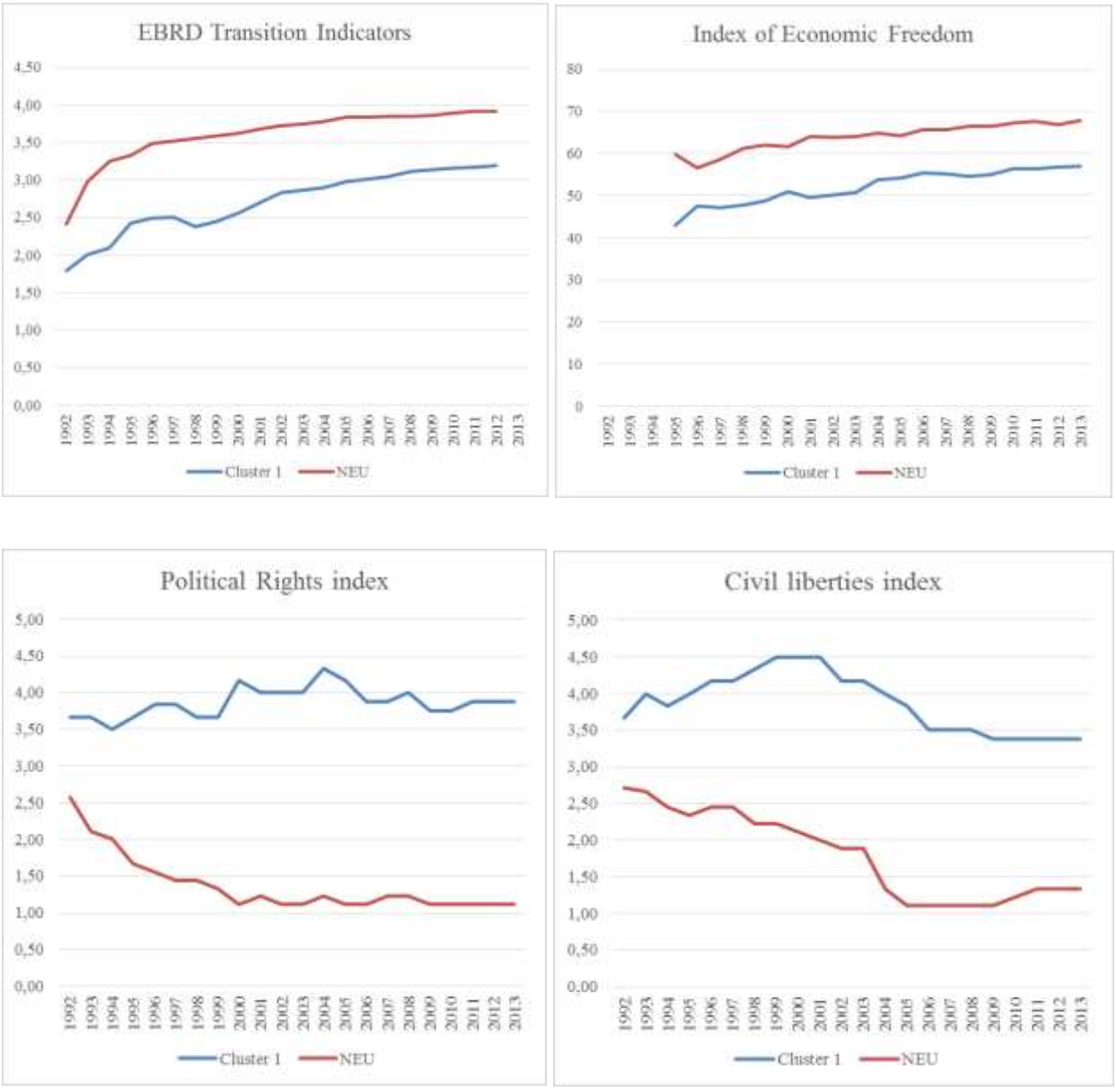
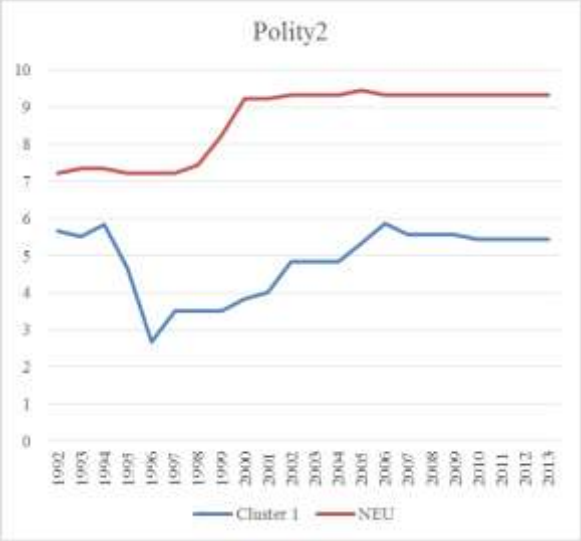


Figure 4. (cont'd)



Note, that in case of the political rights and civil liberties indices, a lower value means a freer country, thus a decrease in the figure is considered favorable. On this ground, I found it important to determine the importance of these transition and freedom variables in the economic development over the past two decades.

4. GROWTH IN THE TRANSITION ECONOMIES

This chapter presents the results obtained from the regression analysis on the panel of the transition economies, where the variables presented in Chapter 2 and also at the end of the previous chapter, serve as explanatory factors in the development of the GDP per capita in the European transition economies.

4.1. GROWTH AND THE PROGRESS OF TRANSITION

Table 4 on the next page presents the results of equation (1) – (3) from Chapter 2. Model (1) is the simplest regression including GDP per capita as a dependent variable and the EBRD transition indicators as explanatory variables.

The coefficients of the large-scale and small-scale privatization and that of the governance and enterprise restructuring are significant. Only the large scale privatization has a positive coefficient. According to these results, while the privatization of the large-scale enterprises is conducive to growth, the privatization of the small businesses, and the progress in the restructuring of the governance and the enterprise sector affects the contemporaneous growth negatively. The negative sign of the governance and enterprise restructuring variable may reflect that the disruption of the previous market relations and coordination was rather disadvantageous for economic growth, however, it was undoubtedly a necessary and inevitable part of the transition process.

Table 4. The relationship between the Transition Indicators and Economic growth

	(1)	(2)	(3)
constant	8.287*** (0.330)	9.087*** (0.382)	1.150*** (0.353)
Large scale privatization	0.087** (0.040)	0.120*** (0.045)	0.020* (0.010)
Small scale privatization	-0.152*** (0.053)	-0.110** (0.048)	0.006 (0.012)
Governance and enterprise restructuring	-0.072** (0.031)	-0.054 (0.034)	-0.023** (0.009)
Price liberalization	0.028 (0.105)	-0.090** (0.035)	-0.007 (0.013)
Trade & Forex system	0.016 (0.045)	0.019 (0.027)	-0.003 (0.007)
Competition Policy	-0.015 (0.053)	-0.034 (0.053)	-0.024*** (0.008)
log Trade		-0.160** (0.065)	-0.023 (0.011)
log FDI		-0.009 (0.014)	0.006 (0.0051)
log Inflation		0.000 (0.008)	-0.006** (0.003)
log of GDP per capita, 1st lag			1.023*** (0.089)
log of GDP per capita, 2nd lag			-0.097 (0.11)
log of GDP per capita, 3rd lag			-0.060 (0.064)
Time fixed effects	YES	YES	YES
Country fixed effects	YES	YES	YES
n	380	330	292
Adj. R^2	0.973	0.987	0.998

Dependent variable: log of GDP per capita (constant 2005 USD), Cluster-robust standard errors in parentheses
*** (**) [*] Statistically significant at 1%, (5%), [10%]

Privatization was one of the key steps in the transition process. The effects of the privatization process are different in the short and in the long run. Kornai (1994) argued that in the short run, privatization creates unemployment, decreases the aggregate demand and contributes to the contraction of the economy, and only in the long run it is conducive to growth by increasing efficiency. The negative sign of the small scale privatization indicator is in line with the short term effects of privatization. If we accept this argument, it appears that the two decades were not enough,

at least not for all countries, to achieve the beneficial long-term effects (based on the indicators, several former Soviet Union or Yugoslavia member countries have not completed sufficiently the privatization reforms). To find out in which countries would the correlation between the small scale privatization variable and growth be positive, a country-by-country analysis would be necessary. Regarding the positive sign of the large scale privatization variable, the dissolution and privatization of the large state owned enterprises appears to be beneficial for the growth of the economy. As Bokros (2013) emphasizes, the breaking up of the state monopolies and the privatization of the state enterprises was important for economic growth in a market economy, since it was the only way to make the large state enterprises able to undertake supply-side adjustments. It would be an exaggeration to simply say that privatization was harmful. Privatization was by all means necessary, however, the manner it happened is of great importance. Privatization in the transition countries was unique because it involved the whole economy (a feature which is important in explaining why privatization is often seen harmful in the transition countries, while it was beneficial for the economy in Western European countries, for example in the United Kingdom – pp.82 in Bokros, 2013). Furthermore, the methods of conducting privatization also differed greatly among the transition economies. The coupon privatization in Czechoslovakia, the issuing of compensation coupons in Hungary or the privatization of the workers' self-managed firms in Yugoslavia by corporatization had different consequences. Unfortunately, controlling for these differences is impossible and the EBRD indicators also mask them.

Continuing the investigation, in Model (2), I included the variables of trade openness, FDI inflows and inflation to differentiate the effect of these on growth from those of the progress of the transition. The coefficients of large-scale and small-scale privatization remained significant. Although, their magnitude have changed somewhat, the change is not tremendous. While the

coefficient of governance and enterprise restructuring lost its significance, price liberalization became significant at a 5% level. The negative sign of the price liberalization coefficient suggests that an increase in the scope of price liberalization corresponds to lower growth. However, as this coefficient is not significant in either of the other models, this result cannot be considered robust.

Finally, in Model (3), I also included the lagged values of the dependent variable. The coefficient of large-scale privatization is still significant, but this time only at a 10% level and its magnitude has decreased. The small-scale privatization variable lost significance and this time the coefficient of price liberalization is not significant either. The coefficient of the small-scale privatization variable is border-line insignificant, and it is important to point out that it has a positive sign, which is in line with the argument that the effects of privatization are different in the short and in the long run. The governance and enterprise restructuring variable is significant similarly to Model (1), however, its magnitude decreased. The coefficient of competition policy is significant, though as it was not significant in any of the previous models, I do not consider this results robust. Overall, only large-scale privatization appears to have a robust positive effect on growth. From Model (1), a one unit higher value in the scope of large-scale privatization corresponds to 8.6% higher GDP per capita.

As the effect of the progress of transition may not have been immediate, I rerun the previous models by including the lagged values of the EBRD transition indicators. Table 5 below presents the results. The contemporaneous value of large-scale privatization still remains robust in all specifications and has a positive coefficient. Its first lag is only significant in Model (6), with a negative coefficient, suggesting that an increase in the scope of large-scale privatization would have a negative effect on the economic growth in the following period. However, as this coefficient is significant only in one model, this result cannot be considered robust.

Table 5. The relationship between the Transition Indicators, their lagged values and Economic growth

	(4)	(5)	(6)
constant	9.170** (0.430)	10.150** (0.463)	1.026** (0.301)
Large scale privatization	0.101** (0.048)	0.117** (0.037)	0.046** (0.015)
Large scale privatization, 1st lag	-0.013 (0.031)	0.029 (0.020)	-0.035** (0.012)
Small scale privatization	-0.128** (0.042)	-0.060 (0.062)	0.013 (0.014)
Small scale privatization, 1st lag	-0.035 (0.038)	-0.082** (0.022)	0.006 (0.009)
Governance and enterprise restructuring	-0.08** (0.030)	-0.05 (0.038)	-0.044** (0.012)
Governance and enterprise restructuring, 1st lag	-0.028 (0.027)	-0.016 (0.021)	0.039** (0.014)
Price liberalization	-0.008 (0.078)	-0.108** (0.015)	-0.013 (0.009)
Price liberalization, 1st lag	0.065 (0.051)	-0.016 (0.026)	0.01 (0.006)
Trade & Forex system	0.037 (0.028)	0.036* (0.018)	0.004 (0.008)
Trade & Forex system, 1st lag	-0.029 (0.026)	-0.003 (0.023)	-0.010 (0.011)
Competition Policy	0.012 (0.043)	0.002 (0.040)	-0.03** (0.011)
Competition Policy, 1st lag	-0.047 (0.032)	-0.055** (0.024)	0.006 (0.014)
log Trade		-0.135** (0.061)	0.021* (0.011)
log FDI		-0.007 (0.014)	0.005 (0.004)
log Inflation		-0.0007 (0.007)	-0.004 (0.002)
log of GDP per capita, 1st lag			1.045** (0.075)
log of GDP per capita, 2nd lag			-0.146* (0.085)
log of GDP per capita, 3rd lag			-0.027 0.060)
Time fixed effects	YES	YES	YES
Country fixed effects	YES	YES	YES
n	367	324	292
Adj. R2	0.977	0.987	0.998

Dependent variable: log of GDP per capita (constant 2005 USD), Cluster-robust standard errors in parentheses
*** (**) [*] Statistically significant at 1%, (5%), [10%]

All the other variables have one or two significant coefficients appearing in one or the other specification, thus these are not robust results. The results regarding the variable of governance and enterprise restructuring are somewhat ambiguous. While its coefficients (both the contemporaneous and the lag) is insignificant in Model (5), the contemporaneous value is significant both in Model (4) and in Model (6). It has a negative sign both times and its magnitudes here are comparable to those in Model (1) and Model (3) from the previous set of results. Interestingly, when controlling for the effect of GDP in the previous years, the lagged value is also significant and has a positive sign. This can imply that the restructuring of the governance and the enterprise sector is beneficial for growth only in the long run. This would be in line with theory, but it should be confirmed by further research. Overall, only the contemporaneous value of large-scale privatization appears to be robust throughout all specifications. According to Model (4), a one unit higher value in the scope of large-scale privatization corresponds to 10.1% higher GDP per capita.

Between the different model specifications, the number of observations have dropped considerably. This is due to missing values in the control variables (and partially due to the inclusion of the lagged values of the dependent variable, but this part of the problem cannot be corrected). To find out to what extent this change in the number of observations biases the results, I ran Models (1) – (6) by dropping the two countries with the most missing values. These were Bosnia and Herzegovina, and Montenegro. I found that the results, neither the significance nor the magnitude of the coefficients, did not change considerably (the regression tables for these robustness checks are shown in the Appendix), therefore, the initial results are not too biased even though the number of observations changes.

4.2. GROWTH AND THE SCOPE OF POLITICAL AND ECONOMIC FREEDOM

In this section, I present the results from the models where the explanatory variables are different measures of political and economic freedom (equations (4) – (6) from Chapter 2 and the extension of these with the lagged values of the explanatory variables). The first set of results are shown in Table 6.

Table 6. The relationship between the political and economic freedom and Economic growth

	(6)	(7)	(8)
constant	8.291*** (0.21)	8.68*** (0.455)	0.98*** (0.269)
Polity 2	0.0048 (0.007)	0.003 (0.007)	0.000 (0.002)
Political rights index	0.075*** (0.021)	0.070*** (0.021)	0.008 (0.006)
Civil liberties index	-0.022 (0.02)	-0.017 (0.024)	0.010 (0.0084)
Index of Economic Freedom	0.006*** (0.002)	0.006*** (0.002)	0.000 (0.000)
log Trade		-0.084 (0.098)	0.025 (0.017)
log FDI		0.001 (0.010)	0.011*** (0.004)
log Inflation		0.014 (0.016)	-0.004 (0.002)
log of GDP per capita, 1st lag			1.069*** (0.079)
log of GDP per capita, 2nd lag			-0.14 (0.10)
log of GDP per capita, 3rd lag			-0.063 (0.060)
Time fixed effects	YES	YES	YES
Country fixed effects	YES	YES	YES
n	317	298	291
Adj. R2	0.990	0.990	0.998

Dependent variable: log of GDP per capita (constant 2005 USD), Cluster-robust standard errors in parentheses
*** (**) [*] Statistically significant at 1%, (5%), [10%]

The political rights index is significant in Model (7), and has a positive coefficient. As in the case of the political rights regime, a lower value represents more freedom; this result suggests that an increase in the scope of the political freedom corresponds to a lower GDP per capita. These results might be surprising at first. However, Schiffbauer et al. (2010) showed that below a certain level of development, non-democratic systems outperform democracies in term of economic growth. Thus in such less developed countries, a change to a democratic system can restrain growth. The negative effect of political freedom on growth in the transition countries could be explained by their line of argumentation.

The negative effect of political freedom on the economic growth of the transition countries is also understandable once we take into consideration that the increase in political freedom in the transition countries meant the establishment of new institutions and new types of relation throughout the economy. The market economy and the democratic system required a different type of behavior from all actors in the economy. This adjustment took a long time and the working of the new institutions were not always transparent nor they functioned efficiently (pp.77 in Bokros, 2013), thus the democratization process in the transition economies could have had a contractionary effect on the economy in the early transition years, as well. The civil liberties index and the Polity 2 index are insignificant. The coefficient of economic freedom is significant and has an expected positive sign, thus an increase in the scope of economic freedom is conducive to economic growth. From Model (6), a one unit higher level of economic freedom correlates with a 0.6% higher GDP per capita.

Including the control variables for trade, FDI inflows and inflation in Model 8 did not change the results. Both the significance levels and the magnitudes of the coefficients remain the same. However, in Model (9), when the lagged values of GDP per capita are also included in the

model, all coefficients of interest lose significance. This implies the effect of a contemporaneous changes in political and economic freedom are outweighed by the endogenous changes in GDP per capita.

To determine the longer term relationship between the changes in political and economic freedom and economic growth, I estimated the models from Table 6 together with the lagged values of the variables of interest. The results are presented in Table 7 on the next page.

In Model (9), both the contemporaneous and the lagged value of the political regime index are significant and both have a positive sign similarly to the results from Table 6. The contemporaneous coefficient of the civil liberties index became significant and have a negative sign, thus an increasing scope of civil liberties is conducive to growth. However, this result does not appear to be robust, as the coefficient of civil liberties was not significant in either of the previously estimated models. Overall, considering the relationship between the measures of political freedom and of economic growth, it appears that there is no significant relationship – in this respect, my findings are similar to that of the literature, which also found this relationship ambiguous.

Regarding the coefficient of economic freedom, both the contemporaneous and the lagged values are significant and have positive signs, as expected. Based on Model (9), a one unit higher level of economic freedom correlates with a 0.5% higher GDP per capita, while when and where the level of economic freedom was one unit higher in a year, GDP per capita is expected to be 0.3% higher in the next year.

Table 7. The relationship between the political and economic freedom, their lagged values and Economic growth

	(9)	(10)	(11)
constant	8.096*** (0.21)	8.43*** (0.1746)	1.10*** (0.33)
Polity 2	0.009 (0.009)	0.008 (0.009)	-0.002 (0.004)
Polity 2, 1st lag	0.000 (0.010)	-0.000 (0.011)	0.004 (0.005)
Political rights index	0.042** (0.02)	0.037* (0.021)	0.006 (0.009)
Political rights index, 1st lag	0.057*** (0.02)	0.055*** (0.021)	0.008 (0.007)
Civil liberties index	-0.057*** (0.016)	-0.046** (0.019)	0.009 (0.008)
Civil liberties index, 1st lag	0.023 (0.018)	0.018 (0.019)	-0.001 (0.006)
Index of Economic Freedom	0.005** (0.003)	0.005* (0.002)	-0.001 (0.000)
Index of Economic Freedom, 1st lag	0.003** (0.001)	0.003** (0.001)	0.002*** (0.000)
log Trade		-0.074 (0.094)	0.023 (0.024)
log FDI		0.015 (0.012)	0.009*** (0.003)
log Inflation		0.001 (0.009)	-0.000 (0.001)
log GDP per capita, 1st lag			1.073*** (0.071)
log GDP per capita, 2nd lag			-0.210*** (0.081)
log GDP per capita, 3rd lag			-0.002 (0.045)
Time fixed effects	YES	YES	YES
Country fixed effects	YES	YES	YES
n	299	280	276
Adj. R2	0.992	0.99	0.998

Dependent variable: log of GDP per capita (constant 2005 USD), Cluster-robust standard errors in parentheses
*** (**) [*] Statistically significant at 1%, (5%), [10%]

Including control variables in Model (10) does not change the results. The previously significant coefficients remain significant and their magnitude does not change considerably. However, when the lagged values of GDP per capita are included in Model (11), almost all coefficients lose their significance. The only exception is the lagged value of the economic freedom

variable, which remains significant at a 1% level, however, the magnitude of the coefficient is somewhat smaller than in the previous cases. Nevertheless, this implies that a change in the scope of economic freedom is conducive to growth, even when we take the endogenous changes in GDP per capita into consideration, which results from a change in economic growth in the previous years.

Summing up, the transition process and the scope of the political and economic freedom indeed have had some effect on the economic growth of the transition countries, even when two decades after the fall of communism are taken into consideration.

CONCLUSION

The aim of this thesis was to reevaluate the state of the division of the European countries in terms of their economic development. For this purpose, a cluster analysis was conducted over the two time periods of 1992-2004 and 2005-2013. The second half of the thesis was dedicated to a panel regression analysis on the 1992-2013 period to determine the relationship between economic growth and the progress of the transition reforms, and the scope of political and economic freedom in the European transition economies.

The cluster analysis showed that the East-West division has not yet disappeared. The level of economic development is still considerably different between the two parts of Europe. The North-Western countries are on one side with a considerably higher development level than the Southern European countries and the transition economies. Nevertheless, it is undeniable that some transition countries have made considerable progress. The group of the transition countries broke up into two distinct groups with significantly different economic development levels. The countries that achieved notable progress were those which became members of the European Union at some point during the past decade.

The lack of considerable development in the rest of the transition economies, which are all either former members of the Soviet Union or of Yugoslavia, may cause problems if they would ever to become EU member countries. Albania, Macedonia, Montenegro and Serbia are currently candidate countries, while Bosnia and Herzegovina and Kosovo are potential candidates. As Jean-Claude Juncker, the current president of the European Commission declared among his priorities (Juncker (n.d.)), no further enlargement of the EU is planned in the near future. Considering that the Union is already diverse in term of the economic development of its member countries, and

given that these countries have not managed to develop significantly, their involvement would mean trouble for the European integration process. Obviously it is an important aim of both the countries themselves and the EU to pursue some progress in economic development, but the way to do so is not so obvious.

My analysis on the determinants of economic growth in the transition economies has shown that some aspects of the reform process (primarily the large scale privatization) and the scope of economic freedom have influenced growth even when a time period of 22 years is taken into consideration. My analysis did not manage to establish a robust relationship between political freedom and economic growth. This, however, does not mean that the democratic processes could be neglected in the transition economies. On the contrary, democracy is a general good that is beneficial both for the economy and for the society, and as such, it should be promoted.

The new EU members did better both regarding the progress of the transition and in terms of political and economic freedom. It seems that the EU did have a role to play by promoting better domestic policies and the institutional development of these countries especially in the run-up to joining the Union (Fischer and Sahay 2000, Keren and Ofer 2008, Epstein 2014). I am not, by all means, arguing that the job is done in the new member state countries. The EU membership does not provide certainty for convergence and sustainable economic development (Csaba 2009a), and as many studies noted (Keren and Ofer 2008, Csaba 2009b, Epstein and Jacoby 2014) any influence the EU might have is likely to diminish after the accession.

It appears that the key to achieve development, and moreover, to ensure its sustainability is completing the structural reforms (with special care to their quality) that were started at the beginning of the transition process, and improving the institutional background that can strengthen these reforms and support their proper functioning. It is also important to emphasize that these by

themselves are not sufficient for sustainable growth, but are necessary preconditions. Since a one-size-fits-all solution does not seem feasible, further research and policy analysis should be dedicated to individual country studies to identify individual and tailored solutions.

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APPENDIX

CORRELATION TABLES OF THE CLUSTER ANALYSIS

1992-2004 period

		GDP per capita	Life expectancy	Employment in agriculture	Manufacturing value added	Total natural resources rents	Corruption
GDP per capita	Pearson Correlation	1	.789**	-.607**	-.257	-.135	.894**
	Sig. (2-tailed)		.000	.000	.136	.425	.000
	N	37	37	36	35	37	36
Life expectancy	Pearson Correlation	.789**	1	-.530**	-.309	-.456**	.747**
	Sig. (2-tailed)	.000		.001	.071	.005	.000
	N	37	37	36	35	37	36
Employment in agriculture	Pearson Correlation	-.607**	-.530**	1	-.028	.123	-.652**
	Sig. (2-tailed)	.000	.001		.875	.475	.000
	N	36	36	36	34	36	36
Manufacturing value added	Pearson Correlation	-.257	-.309	-.028	1	-.077	-.143
	Sig. (2-tailed)	.136	.071	.875		.662	.419
	N	35	35	34	35	35	34
Total natural resources rents	Pearson Correlation	-.135	-.456**	.123	-.077	1	-.223
	Sig. (2-tailed)	.425	.005	.475	.662		.190
	N	37	37	36	35	37	36
Corruption	Pearson Correlation	.894**	.747**	-.652**	-.143	-.223	1
	Sig. (2-tailed)	.000	.000	.000	.419	.190	
	N	36	36	36	34	36	36

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

2005-2013 period

		GDP per capita	Life expectancy	Employment in agriculture	Manufacturing value added	Total natural resources rents	Corruption
GDP per capita	Pearson Correlation	1	.775**	-.595**	-.192	-.083	.880**
	Sig. (2-tailed)		.000	.000	.276	.626	.000
	N	37	37	37	34	37	36
Life expectancy	Pearson Correlation	.775**	1	-.476**	-.172	-.370*	.790**
	Sig. (2-tailed)	.000		.003	.332	.024	.000
	N	37	37	37	34	37	36
Employment in agriculture	Pearson Correlation	-.595**	-.476**	1	-.176	.081	-.627**
	Sig. (2-tailed)	.000	.003		.320	.635	.000
	N	37	37	37	34	37	36
Manufacturing value added	Pearson Correlation	-.192	-.172	-.176	1	-.139	-.077
	Sig. (2-tailed)	.276	.332	.320		.431	.672
	N	34	34	34	34	34	33
Total natural resources rents	Pearson Correlation	-.083	-.370*	.081	-.139	1	-.230
	Sig. (2-tailed)	.626	.024	.635	.431		.177
	N	37	37	37	34	37	36
Corruption	Pearson Correlation	.880**	.790**	-.627**	-.077	-.230	1
	Sig. (2-tailed)	.000	.000	.000	.672	.177	
	N	36	36	36	33	36	36

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

DESCRIPTIVE TABLES OF CLUSTERS

1992-2004

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
GDP per capita	1	17	4739.0	2949.9	715.4	3222.3	6255.7	690.6	10554.2
	2	3	16637.5	1579.7	912.0	12713.1	20561.9	14926.5	18040.7
	3	11	34309.6	3770.8	1136.9	31776.4	36842.9	29552.8	43334.3
	4	3	57572.1	7553.9	4361.2	38807.0	76337.2	50406.2	65462.0
	Total	34	20017.6	18158.4	3114.1	13681.8	26353.4	690.6	65462.0
Life expectancy at birth. total (years)	1	17	70.9	2.6	.6	69.5	72.2	65.6	74.2
	2	3	76.2	1.5	0.9	72.3	80.2	74.9	78.0
	3	11	77.6	0.9	0.2	76.9	78.2	76.1	79.2
	4	3	78.2	1.0	.6	75.5	80.9	77.1	79.3
	Total	34	74.2	3.8	.6	72.8	75.5	65.6	79.3
Employment in agriculture (% of total employment)	1	17	21.3	15.7	3.8	13.2	29.4	5.6	66.9
	2	3	13.6	4.0	2.3	3.5	23.7	10.3	18.2
	3	11	4.3	2.0	0.6	3.0	5.7	1.7	7.8
	4	3	3.9	.9	.5	1.5	6.4	2.8	4.7
	Total	34	13.6	13.8	2.3	8.8	18.4	1.7	66.9
Manufacturing value added (% of GDP)	1	17	20.8	6.0	1.4	17.7	23.9	7.8	32.5
	2	3	17.5	7.4	4.3	-0.9	36.0	10.2	25.1
	3	11	19.8	3.5	1.0	17.4	22.2	15.5	25.5
	4	3	13.8	4.9	2.8	1.5	26.0	10.8	19.5
	Total	34	19.5	5.5	.9	17.6	21.5	7.8	32.5
Total natural resources rents (% of GDP)	1	17	3.6	5.5	1.3	.8	6.5	.0	24.0
	2	3	0.3	0.1	0.1	-0.1	0.7	0.0	0.4
	3	11	0.7	0.6	0.1	0.2	1.1	0.0	1.6
	4	3	4.3	7.3	4.2	-14.0	22.6	.0	12.8
	Total	34	2.4	4.5	.7	.8	4.0	.0	24.0
Corruption	1	17	3.4	1.0	.2	2.9	3.9	2.2714	5.6
	2	3	5.5	0.9	0.5	3.3	7.8	4.61	6.4
	3	11	7.9	1.5	0.4	6.8	8.9	4.614	9.6
	4	3	8.7	.0	.0	8.5	8.97	8.7	8.8
	Total	34	5.5	2.5	.4	4.6	6.4	2.2	9.6

2005-2013

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
GDP per capita	1	8	3596.6	1609.2	568.9	2251.3	4942.0	967.6	6335.3
	2	11	13558.7	4615.2	1391.5	10458.1	16659.3	8095.2	21809.3
	3	11	40761.6	5435.7	1638.9	37109.9	44413.4	31244.2	49026.4
	4	3	68419.6	12117.8	6996.2	38317.2	98522.1	57809.9	81625.0
	Total	33	25198.7	21148.4	3681.4	17699.7	32697.6	967.6	81625.0
Life expectancy at birth. total (years)	1	8	71.8	3.29	1.16	69.1	74.6	68.1	76.7
	2	11	75.8	2.6	0.7	74.1	77.6	72.3	79.9
	3	11	80.3	0.8	0.2	79.7	80.8	78.7	81.8
	4	3	81.0	.89	.51	78.7	83.2	80.2	82.0
	Total	33	76.8	4.12	.71	75.3	78.3	68.1	82.0
Employment in agriculture (% of total employment)	1	8	20.5	13.7	4.8	9.1	32.0	6.9	48.6
	2	11	8.7	4.1	1.2	6.0	11.5	3.3	14.4
	3	11	3.0	1.4	0.4	2.1	4.0	1.2	5.3
	4	3	2.5	1.0	.5	.0	5.1	1.4	3.5
	Total	33	9.1	9.8	1.7	5.7	12.6	1.2	48.6
Manufacturing value added (% of GDP)	1	8	15.8	6.6	2.3	10.3	21.4	6.7	29.1
	2	11	17.3	5.0	1.5	14.0	20.7	8.6	24.7
	3	11	16.6	4.0	1.2	13.8	19.3	10.5	22.2
	4	3	11.5	6.9	4.0	-5.7	28.7	6.9	19.5
	Total	33	16.2	5.3	.9	14.3	18.1	6.7	29.1
Total natural resources rents (% of GDP)	1	8	6.0	8.6	3.0	-1.1	13.2	.4	26.8
	2	11	1.1	0.7	0.2	0.6	1.5	0.2	2.1
	3	11	0.9	0.8	0.2	0.3	1.4	0.0	2.7
	4	3	5.5	9.4	5.4	-17.9	29.0	.0	16.4
	Total	33	2.6	5.2	.9	.7	4.5	.0	26.8
Corruption	1	8	2.9	.4	.1	2.4	3.3	2.2	3.5
	2	11	5.0	0.9	0.2	4.4	5.6	3.9	6.5
	3	11	7.9	1.3	0.4	7.0	8.8	4.5	9.3
	4	3	8.6	.2	.1	8.0	9.3	8.4	8.9
	Total	33	5.8	2.3	.4	4.9	6.6	2.2	9.3

ANOVA TABLES

1992-2004

		Sum of Squares	df	Mean Square	F	Sig.
GDP per capita	Between Groups	1.048E10	3	3.494E9	261.662	.000
	Within Groups	4.005E8	30	13351276.024		
	Total	1.088E10	33			
Life expectancy at birth. total (years)	Between Groups	374.987	3	124.996	29.911	.000
	Within Groups	125.367	30	4.179		
	Total	500.354	33			
Employment in agriculture (% of total employment)	Between Groups	2236.803	3	745.601	5.520	.004
	Within Groups	4052.428	30	135.081		
	Total	6289.232	33			
Manufacturing. value added (% of GDP)	Between Groups	139.399	3	46.466	1.605	.209
	Within Groups	868.731	30	28.958		
	Total	1008.130	33			
Total natural resources rents (% of GDP)	Between Groups	82.988	3	27.663	1.361	.273
	Within Groups	609.550	30	20.318		
	Total	692.537	33			
Corruption	Between Groups	166.424	3	55.475	39.801	.000
	Within Groups	41.814	30	1.394		
	Total	208.237	33			

2005-2013

		Sum of Squares	df	Mean Square	F	Sig.
GDP per capita	Between Groups	1.349E10	3	4.497E9	158.99	.000
	Within Groups	8.203E8	29	28286073.77		
	Total	1.431E10	32			
Life expectancy at birth. total (years)	Between Groups	390.095	3	130.032	24.393	.000
	Within Groups	154.592	29	5.331		
	Total	544.687	32			
Employment in agriculture (% of total employment)	Between Groups	1581.242	3	527.081	10.107	.000
	Within Groups	1512.304	29	52.148		
	Total	3093.546	32			
Manufacturing. value added (% of GDP)	Between Groups	83.808	3	27.936	.982	.415
	Within Groups	824.933	29	28.446		
	Total	908.741	32			
Total natural resources rents (% of GDP)	Between Groups	175.626	3	58.542	2.383	.090
	Within Groups	712.379	29	24.565		
	Total	888.005	32			
Corruption	Between Groups	149.270	3	49.757	49.157	.000
	Within Groups	29.354	29	1.012		
	Total	178.624	32			

THE RELATIONSHIP BETWEEN THE TRANSITION INDICATORS AND ECONOMIC GROWTH – ROBUSTNESS CHECKS

Dropped from sample: Bosnia and Herzegovina, Montenegro

	(1b)	(2b)	(3b)
constant	8.676** (0.206)	9.125** (0.389)	1.156** (0.354)
Large scale privatization	0.109** (0.038)	0.126** (0.045)	0.019* (0.011)
Small scale privatization	-0.136** (0.053)	-0.117** (0.049)	0.005 (0.011)
Governance and enterprise restructuring	-0.064** (0.022)	-0.054 (0.035)	-0.022** (0.009)
Price liberalization	-0.082 (0.060)	-0.091** (0.035)	-0.006 (0.012)
Trade & Forex system	-0.004 (0.042)	0.020 (0.026)	-0.003 (0.006)
Competition Policy	-0.007 (0.051)	-0.033 (0.053)	-0.023** (0.008)
log Trade		-0.162** (0.065)	0.0207* (0.011)
log FDI		-0.009 (0.014)	0.006 (0.005)
log Inflation		-0.000 (0.008)	-0.006** (0.003)
log of GDP per capita, 1st lag			1.023** (0.089)
log of GDP per capita, 2nd lag			-0.095 (0.111)
log of GDP per capita, 3rd lag			-0.061 (0.064)
Time fixed effects	YES	YES	YES
Country fixed effects	YES	YES	YES
n	345	318	280
Adj. R^2	0.9818	0.9866	0.9984

Dependent variable: log of GDP per capita (constant 2005 USD), Cluster-robust standard errors in parentheses
*** (**) [*] Statistically significant at 1%, (5%), [10%]

	(4b)	(5b)	(6b)
constant	9.685** (0.281)	10.190** (0.467)	1.019** (0.299)
Large scale privatization	0.134** (0.040)	0.118** (0.038)	0.047** (0.015)
Large scale privatization, 1st lag	0.000 (0.024)	0.0296 (0.020)	-0.037** (0.013)
Small scale privatization	-0.138** (0.054)	-0.060 (0.062)	0.012 (0.01442)
Small scale privatization, 1st lag	-0.023 (0.024)	-0.082** (0.02250)	0.006 (0.009)
Governance and enterprise restructuring	-0.074** (0.023)	-0.049 (0.039)	-0.043** (0.012)
Governance and enterprise restructuring, 1st lag	-0.004 (0.021)	-0.015 (0.021)	0.040** (0.014)
Price liberalization	-0.118** (0.027)	-0.108** (0.015)	-0.012 (0.010)
Price liberalization, 1st lag	0.012 (0.034)	-0.016 (0.026)	0.010 (0.006)
Trade & Forex system	0.013 (0.016)	0.037** (0.018)	0.004 (0.008)
Trade & Forex system, 1st lag	-0.001 (0.029)	-0.004 (0.023)	-0.0103 (0.011)
Competition Policy	0.000 (0.043)	0.001 (0.040)	-0.032** (0.012)
Competition Policy, 1st lag	-0.044 (0.027)	-0.054** (0.025)	0.008 (0.016)
log Trade		-0.136** (0.061)	0.018 (0.011)
log FDI		-0.007 (0.014)	0.005 (0.004)
log Inflation		-0.000 (0.007)	-0.004 (0.002)
log of GDP per capita, 1st lag			1.045** (0.075)
log of GDP per capita, 2nd lag			-0.144* (0.085)
log of GDP per capita, 3rd lag			-0.027 (0.061)
Time fixed effects	YES	YES	YES
Country fixed effects	YES	YES	YES
n	332	312	280
Adj. R2	0.986	0.987	0.998

Dependent variable: log of GDP per capita (constant 2005 USD), Cluster-robust standard errors in parentheses
*** (**) [*] Statistically significant at 1%, (5%), [10%]