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## WHAT DETERMINES THE INSTITUTIONAL CHANGE IN TRANSITION ECONOMIES?

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The aim of this study is to explain the determinants of the institutional change that has taken place in the countries of *Central-East* and *Southeast Europe* and the former USSR, which constituted quite a homogeneous group at the beginning of the transition period. The paper concentrates on the political and economic institutions in 24 post-communist economies in the period 1989-2014, using four groups of indices: the Freedom House's political freedom measure, the Index of Economic Freedom by the Heritage Foundation, the World Bank Governance Indicators (Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption) and the transition indicators published by the European Bank of Reconstruction and Development. The results indicate that the main drivers of institutional development in the transition countries included the cultural and historical proximity of these countries to Western Europe and the application for membership in international organisations (EU, NATO, WTO), which established certain requirements concerning democracy and a market economy.

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### 1. INTRODUCTION

At the turn of the 1980s and the 1990s the countries of Central-East and Southeast Europe and the Soviet Union started a radical transformation which changed the political map of this part of the world. The people in these countries rejected the communist system, chose sovereignty and organised their states anew (see: Judt 2005). This experiment was initiated almost simultaneously, within a similar worldwide environment. The post-communist countries also constituted quite a homogeneous group from the perspective of their political and economic systems (Kitschelt 2003). The distance between the countries and the democratic market economies was

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enormous. The societies in the above-mentioned countries were highly deficient in experience and knowledge of democracy, and the rule of law and human rights, which characterise modern capitalist societies. They inherited a low efficiency of law enforcement and governance, not to mention a high level of corruption. Therefore, this group of countries shares, as many authors claim, a “unique historic experience” (Kornai 2006) or a “quasi-natural experiment” (Acemoglu, Johnson and Robinson 2005).

With the passage of time, however, this group of countries was becoming more and more diverse<sup>1</sup>. As a result, after almost 25 years of transition these countries are very heterogeneous with respect to the political and economic institutions and the level of economic welfare. In Central Europe and the Baltic states (CEBS), and Southeast Europe (SEE) countries, in most cases both political and economic freedom increased during 1994-2013 (see: Figure 1a, the shift towards the right, upper corner). On the other side, the situation in Central Asia (CA) and Eastern Europe and the Caucasus (EEC) countries differs considerably (Figure 1b). In most of these countries, the

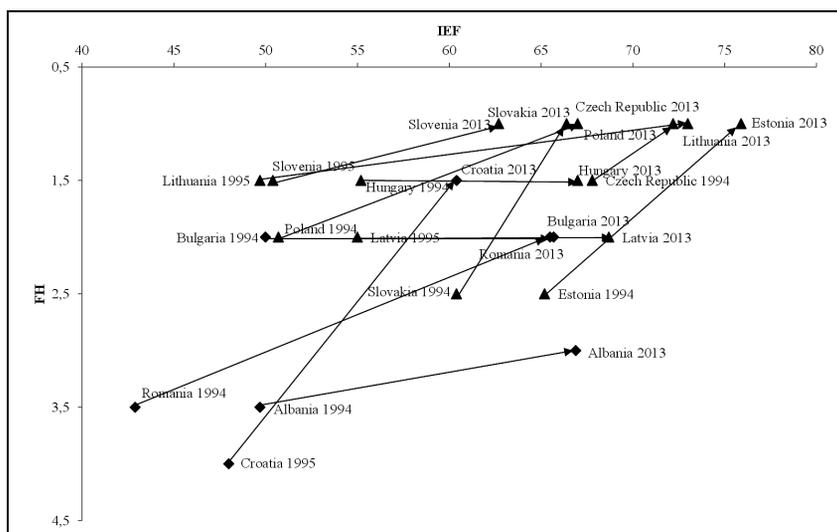
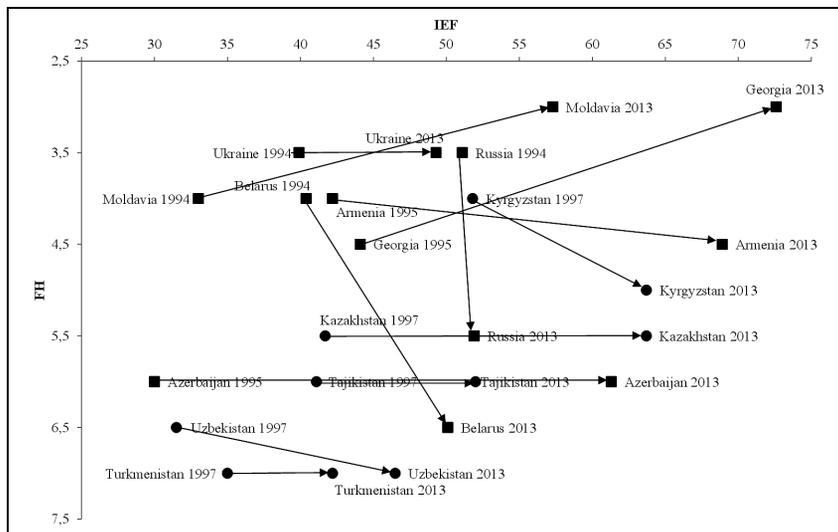


Fig. 1a. Political and economic freedom in CEBS and SEE countries (1994-2013)

Source: own elaboration based on data from the Heritage Foundation and the Freedom House.

<sup>1</sup> Although the heritage of communism is still visible – there are: low level of trust, lack of respect for private property and low level of moral norms in the post-communist countries (Lissowska 2004, p. 11).



Note: FH is an average of the Political Rights and Civil Liberties indices published by Freedom House, while IEF is the Heritage Foundation's Index of Economic Freedom.

Fig. 1b. Political and economic freedom in CA and EEC countries (1994-2013)

Source: own elaboration based on data from the Heritage Foundation and the Freedom House.

increase in economic freedom was combined with a lack of changes or a deterioration in political freedom (particularly in Belarus and Russia).

Substantial differences according to institutional quality<sup>2</sup> in 2013 are also easily noticed in the dendrogram presented in Figure 2.

The dendrogram allows to identify four basic groups of countries (using the Caliński and Harabasz (1974) pseudo-F index). The first group includes the majority of those countries which entered the EU (CEBS and Croatia) and which are more similar to democratic market economies than the rest of the post-socialist countries. The second group consists of the following countries: Albania, Bulgaria, Georgia, Moldova, Romania and Ukraine, with

<sup>2</sup> We take into account the following factors: political freedom (the Political Rights and Civil Liberties indices average from Freedom in the World, published by Freedom House), economic freedom (overall score of the Economic Freedom from the Index of Economic Freedom, published by the Heritage Foundation), quality of governance (the average level of Regulatory Quality, Rule of Law, Government Effectiveness and Control of Corruption indices from The Worldwide Governance Indicators, published by the World Bank) and the progress in transition (average level of all transition indicators, published by the European Bank for Reconstruction and Development).

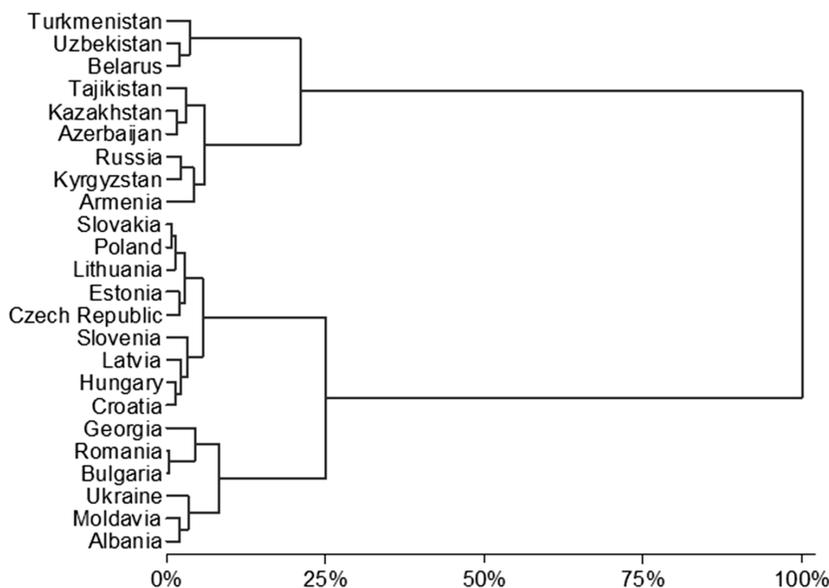


Fig. 2. Dendrogram of the transition countries in terms of institutions in 2013

Source: own elaboration based on data from Freedom House, the Heritage Foundation, the World Bank, and the European Bank for Reconstruction and Development.

their worse institutions. These countries, such as Bulgaria and Romania, are either already members of the EU, or are aspiring to join the EU. The third group comprises of countries with a low institutional quality, i.e.: Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Russia and Tajikistan, which are not attempting to join the EU. The last group includes autocratic countries with repressed economies and stalled progress in transition. There are three countries in this group: Belarus, Turkmenistan and Uzbekistan.

The great divide observed among the transition countries in terms of their institutional quality leads to the following question: what factors have caused the different institutional development of these countries: the initial conditions, path dependence or the international organisations establishing the rules to be adhered to? Our aim is to identify and explain these factors.

Thus, our paper continues the still small strand of literature on the empirical identification of the drivers of institutional change in transition countries<sup>3</sup>. Beck and Laeven (2006), using the World Bank Governance

<sup>3</sup> Post-communist transition was first of all an institutional change (Godłów-Legiędź 2005, p. 31; Hockuba 1995, p. 55).

Indicators (WBGI) as measures of institutional change, have identified the dependence on natural resources and the historical experience during communism as major determinants of institution building during the transition. The research by Di Tommaso, Raiser and Weeks (2007), based on EBRD indicators, has suggested that institutional change is not only significantly path dependent, but also relies on political and economic liberalisation and an external anchor, such as EU accession. Dimitrova-Grajzl (2007) focused on the countries of Southeast and Central-East Europe and using the WBGI and Property Right Index (component of the Index of Economic Freedom) has confirmed the significance of the Ottoman-Habsburg legacies in explaining the divide in institutional quality – while the Ottoman legacy has a significant negative effect, the effect of the Habsburg legacy is positive. Schweickert et al. (2011) quantified the impact of incentives related to potential NATO and EU membership on the institutional change and confirmed that this matters for institutional development in transition countries. BenYishay and Grosjean (2014) found that the empire<sup>4</sup> legacies and the concentration of the natural resources and mining sector at the start of the transition explains to a large part the variation in the success of economic and political reforms. Surprisingly, EU membership is not found to have had a significant effect in their research.

We contribute to the literature by applying a broader set of indicators of institutional change. We are not only interested in the operational rules, as Davis and North (1971) call them, but also in the constitutional ground rules. Therefore, we have used EBRD indicators to capture relatively quick changes in operational rules and the Freedom House's political freedom measure, the Index of Economic Freedom by the Heritage Foundation, and the four WBGI measures (Regulatory Quality, Government Effectiveness, Rule of Law and Control of Corruption) to capture changes in constitutional rules. Although the WBGI are to a large extent perception-based measures rather than objective measures of institutional quality, we decided to use these measures as they are widely applied in the literature on drivers of institutional change in transition countries. Moreover, we agree with Schweickert et al. (2011) that the WBGI is one of the most comprehensive measures of institutional development that is available for international comparison. We refer to Acemoglu, Johnson and Robinson's (2005) scheme

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<sup>4</sup> Transition countries before the First World War were in the boundaries of pre-WWI empires: Habsburg, Ottoman, Prussian and Russian respectively.

of institutional change and modify it to answer the question about the factors which have caused different institutional development in the post-communist countries. Starting with the typology proposed by La Porta et al. (1999), we applied three categories of determinants of institutional changes: cultural, political and economic. Within the cultural changes there are the “legacy” of the centrally-managed economy, dominant religion and religious and ethnic diversification. In the case of the political factors, we assumed that the planning and successful implementation of the post-communist reforms were determined by the ability and willingness of the national political elites to implement these reforms. Therefore, we treat membership in the international organisations (such as the EU and NATO) as an act of exogenous political will and as decisions made by the elites. These organisations are perceived as “external anchors” of the political and economic reforms. Moreover, we have analysed political opposition before transition, state independence before 1989, being a part of the USSR, wars or civil conflicts. The economic factors include: economic welfare, natural resources, education and urbanisation. Our analysis concerns 24 transition countries<sup>5</sup> of *Central-East* and *Southeast Europe* and the former USSR in the period of 1989-2014.

Our results indicate a strong path dependency. The main drivers of institutional development in the transition countries were their cultural and historical proximity to Western Europe, and application for membership in international organisations (the EU, NATO, the WTO) which had established certain requirements concerning democracy and a market economy. These drivers contributed to the enormous divide between the mostly democratic Central Europe and the Baltic states (CEBS) and Southeast Europe (SEE) on one side, and the largely autocratic countries in Central Asia (CA) and Eastern Europe and the Caucasus (EEC) on the other side.

In Section 2 we discuss the institutional change in the transition countries from the theoretical perspective. Section 3 presents the results of the econometric analysis conducted separately for each analysed indicator of institutional quality. Finally, the last section concludes the study.

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<sup>5</sup> The analysis was conducted for the following countries: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldavia, Poland, Romania, Russia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

## 2. THE INSTITUTIONAL CHANGE IN TRANSITION COUNTRIES – A THEORETICAL FRAMEWORK

We modified Acemoglu, Johnson and Robinson's (2005) scheme of institutional change by incorporating three categories of determinants mentioned in the relevant literature (La Porta et al. 1999; see also: Mijiyawa 2013) in order to illustrate the general mechanism of transitional reforms (Figure 3). These determinants are cultural, political and economic, but the boundaries between them are rather vague. We are interested in their influence on the institutional change and do not analyse the interrelations between the political and economic institutions which were studied elsewhere (Piątek, Szarzec and Pilc 2013).

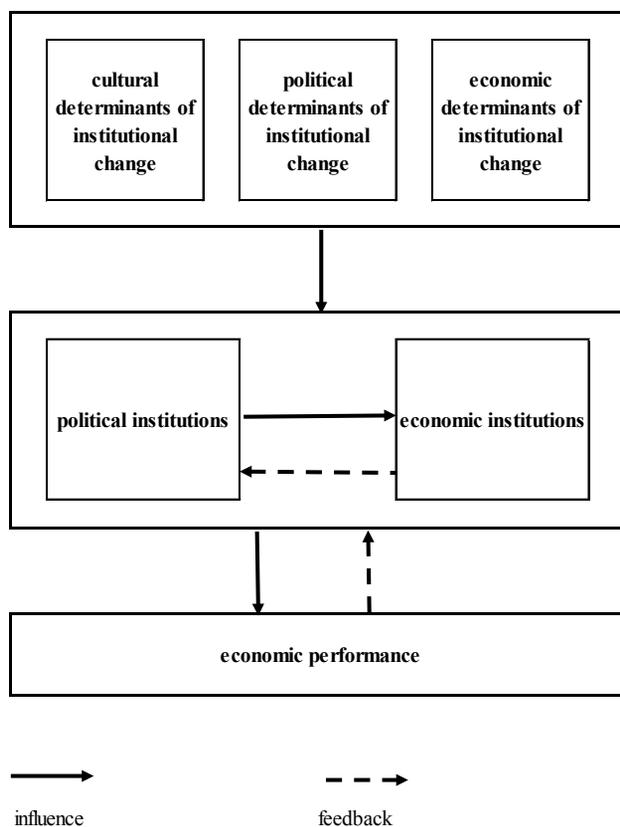


Fig. 3. Determinants of institutional change

Source: own elaboration.

As far as the cultural determinants of institutions are concerned, it is emphasized in the literature that a society's culture, i.e. its attitudes, beliefs and moral norms, shape the formal "rules of play" and has an impact on the economy and its results. As Landes (2000, p. 2) explained: "if we learn anything from the history of economic development, it is that culture makes almost all the difference". Culture alters slowly and exercises an influence on formal institutions that are changing more rapidly (Roland 2004). It is particularly emphasized that culture influences democracy (Inglehart 2000). Democracy works well when citizens accept this form of solving conflicts, which requires specific norms and beliefs, i.e. culture (Glaeser et al. 2004).

Cultural factors naturally had a significant impact on the transition's course. The communist regime changed the mentality of individuals and their social behaviour. This led to the formation of the so-called "homo sovieticus". Turowicz (1993) writes that "homo sovieticus is enslaved, incapacitated, deprived of the spirit of initiative, unable to think critically. (...) [It] is a person who expects and claims everything from the state, who does not want and cannot take his/her fate into his/her own hands". The longer the period of communism, the more powerful the aforementioned cultural legacy of the centrally-managed economy and its negative impact on the memory of the market economy, and subsequently on the course of transition. On one hand, transition societies were hostile and distrustful towards the state, but on the other hand – they expected and demanded a lot from it. This sort of attitude was called by Wilczyński (2005, p. 138) a "hostile welfare state syndrome". Therefore the "legacy" of a centrally-managed economy was not conducive to the transition to a democratic market economy in which initiative and entrepreneurship matter<sup>6</sup> (Mickiewicz 2010). The societies of the post-communist countries were characterized by their lack of work ethic, low level of social trust, high level of corruption perceived as a tool necessary in doing business, double standards – on the one hand official and declared, on the other private and observed – and finally collective and egalitarian attitudes (Pejovich 1994; Winiecki 1999; Inglehart 2000; Lipset and Lenz 2000; Ratajczak 2009).

The lack of cohesion between the introduced formal rules of a market economy and the informal institutions inherited from the centrally-managed

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<sup>6</sup> The situation of countries such as Hungary and Poland, in which certain market reforms were introduced even before the transition (in the period of centrally-managed economy) was slightly better, as the reforms increased the knowledge of the market in those societies (Kołodko 2004, p. 43).

economy had a significant and negative impact on the transition's results. In this context Pejovich (1999, 2003) presents his thesis about the interaction between formal and informal institutions (*interaction thesis*). If the change of formal institutions increases their compatibility with the dominant informal institutions, the interaction between formal and informal rules will result in lower transition costs<sup>7</sup>. The saved resources could be used for production. The incompatibility of the formal and informal "rules of play" dominant in a given society leads to an increase in transition costs and limits the size of production. In the post-communist transition, conflict between the introduced formal institutions and the dominant ethic inherited from the previous era was inevitable. It caused a dichotomy between the formal and informal rules, which led to – as Tridico (2011) describes it – the very slow implementation of formal rules and an increase in uncertainty, which put the whole transition process at risk (*dichotomy thesis*). The increase in the sense of uncertainty and the lack of stability of economic relations was conducive to the emergence of various illegal or half-legal interest groups (oligarchs), which attempted to influence the "rules of play". Moreover, as indicated by Pejovich (1999), the sense of uncertainty also strengthened the position of the post-communist and populist parties that aimed at maintaining a significant role of the state in the economy and at conducting a discretionary policy which was not based on rules. In some countries this situation led to the establishment of autocratic, sometimes even dictatorial governments, or governments which are democratic only formally, i.e. elections are held, but the scope of political rights is limited and no rule of law exists.

Among the cultural factors which had a long-term impact on the political and economic institutions in the transition countries, there were also ethno-linguistic diversification and religion. More ethno-linguistic diversification leads to a weaker sense of community, and strong and longer political frictions (Easterly and Levine 1997; Alesina et. al. 2003; Montalvo and Reynal-Querol 2010). The persistence of ethnic diversity, if combined with intolerance, can be exploited by anti-democratic politicians and even lead to political violence. It can also delay democratisation, contribute to the destabilisation of the economic situation and to social underdevelopment, as in the case of the former Yugoslavia (Pop-Eleches 2007). Hodgson (2006) concludes that in transition countries the negative effects of democracy

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<sup>7</sup> Also North (1984) emphasized the impact of formal and informal relations on transaction costs.

outweigh the positive ones: powerful interest groups appear in these countries that manipulate the political process and significant ethnic fractionalisation contributed to the use of power in order to improve the situation of the ethnic group of the authorities. In such societies, competition prevails over cooperation and public goods are not available. All this leads to weaker political and economic institutions.

In the case of religion, the literature shows that it has an impact on the efficiency of the government (government performance) (La Porta et al. 1997), and on the tolerance of other opinions, ideas and beliefs (Landes 1998). In countries where Protestantism is the dominant religion, the government's performance is better than in those dominated by Catholics, Orthodox Christians or Muslims, and people on average are more tolerant. The Protestant religion ethos is also more conducive to norm-adhering behaviour (Lipset and Lenz 2000), while the strong vertical bonds of authority in the Catholic Church had adverse effects on trust (Putnam 1993). Historically, there were positive relationships between democracy and Protestantism while Orthodox Christianity, Catholicism and Islam were negatively linked with democracy (Lipset 1994).

With respect to the political determinants of institutions, North (1981) points out that institutions are shaped by those in power. Therefore, the ability and willingness of a country's political elite to make the right decisions about post-socialist reforms appeared to be an important factor (Petrovic 2008). Beck and Laeven (2006) point out that the socialist elite remained a powerful political interest group during the initial phase of the transition process in most of the transition countries, but its authority varied across countries depending on their entrenchment in power. If the socialist elite in a given country was weak and there was a political opposition, the new members of the government could be derived from the former opposition activists. If, however, the opposition was weak or non-existent and the incumbent socialist elite was strong, then the system itself could more or less change, but the new government and the legislators designing the new institutional and legal order remained the same. This was particularly the case with the former Soviet republics. For example in Armenia, Kazakhstan, Moldova, Uzbekistan and Turkmenistan, the first presidents elected in free elections held when independence was re-established, were all former communists (in Uzbekistan Islom Karimov remained president until his death in 2016). Opposition activists who became politicians enjoyed more social trust than former members of the communist parties and it was easier for them to convince society to accept difficult

economic reforms<sup>8</sup>. Therefore, the greater the activity of the opposition before the transition, the faster the pace of transition changes (Bruszt et al. 2012). Cameron (2007) points out that in countries where opposition was strong, the opposition won the first free election and decided about the directions of economic and foreign policies, including aspirations to join the EU.

Bearing this in mind, we treat membership in international organisations (such as the EU and NATO) as an act of exogenous political will and as a decision made by the elites. Affiliation with international organisations has a significant impact on the direction and implementation of the political and economic reforms in the transition countries. The choice of organisations is influenced by the political and economic attraction and the cultural proximity of two major centres, Western Europe or Russia.

In the case of countries gravitating towards Western Europe, the governments applied for admission to the North Atlantic Treaty Organization (NATO), the European Union (EU) and the Organization for Economic Cooperation and Development (OECD). All these organisations require their members to comply with the standards of democracy and civil liberties; in the case of the EU and the OECD – the promotion of a market economy is an additional condition. All these organisations and requirements they represent are perceived as “external anchors” (Di Tommaso, Raiser and Weeks 2007) or “safe havens for market reforms” (Havrylyshyn 2006, p. 203). This means that the organisations impose the direction of planned changes and determine the actions of governments from the very moment when they express their country’s will to join the organisation.

Among these organisations, accession to the EU is indicated in the literature as a crucial factor (Roland 2000, p. 184; Grzymala-Busse and Innes 2003; Vachudova 2005, 2010; Cameron 2007; Way and Levitsky 2007; Mungiu-Pippidi 2010). The process of the *acquis communautaire* adoption by the candidate countries contributed to the development of a market economy<sup>9</sup>, had a positive impact on the political changes and

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<sup>8</sup> For instance as Balicki (1996, pp. 198-199) points out, Poland was rewarded for “Solidarity” when activists originating from this oppositional movement won the first partly-free election. As a result of this victory, they could form the first non-communist government since 1939. Because this government initially enjoyed enormous social support, it was able to conduct very difficult shock reforms (however as quickly as in 1993 the new election was won by the post-communist parties).

<sup>9</sup> However, Staehr (2011) argues that the impact of integration on market reforms is not unequivocal, as the governments have abandoned further reforms after implementing the required adjustments.

constituted the basis for their catching-up with the then EU-15 countries (Di Tommaso, Raiser and Weeks 2007; Piazzolo 1999; Schweickert et al. 2011).

After the collapse of the USSR, the war in the former Yugoslavia and the peaceful dissolution of Czechoslovakia, new countries emerged. These entities were organised around the idea of the nation dominant in a given territory, the borders of Soviet republics or the traditions of these countries as they were before World War II. Many of them had no experience of independence and sovereignty and had to start building institutions from scratch, while at the same time confronting economic changes (de Melo et al. 2001). Moreover, these countries usually had little tradition of statehood to refer to (North 1997), therefore it seems that it was easier to introduce institutional changes in those countries which were independent before 1989. It should also be noted that countries belonging to the USSR (probably with the sole exception of the Baltic states) are treated by Russia as its zone of influence and this (destabilising) effect of Russia on the changes taking place in these countries should not be overlooked (Tolstrup 2009; Cameron and Orenstein 2012). A characteristic example of this sort of action are the problems with the territorial integrity of countries such as Georgia, Moldova and Ukraine<sup>10</sup>. Wars and civil conflicts could also have a strong, separate impact, because they increase uncertainty and decrease the trust of the population in institutions (Collier 2009).

The third category of institutional change determinants is the economic factor. Here it is emphasized that the existing institutional environment is to a large extent shaped by economic factors and that institutions develop when their benefits are greater than the costs of development (Davis and North 1971; North and Thomas 1973). Economic determinants in particular have an impact on political freedom (democracy). Lipset (1959) makes the hypothesis – deriving it from Aristotle – that a necessary condition of the proper functioning of democracy is a certain level of welfare. Poor societies are prone to follow the voices of demagogues, and in such conditions democracy cannot survive. This was commonly understood as an indication that the transition to democracy is the result of the increase in welfare (*modernisation theory*), which was treated as one of the few certainties in the social sciences (Burkhart and Lewis-Beck 1994; Acemoglu et al. 2008). As Diamond (1992, p. 110) puts it, it is “one of the most powerful and robust

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<sup>10</sup> In Georgia it is manifested in the problems with the separatist South Ossetia and Abkhazia, in Moldova – in the problems with Transdnistria, and in Ukraine – in the conflict with the separatists of Donetsk and Luhansk and the annexation of Crimea.

relationships". Also, the follow-up research conducted by Barro (1996) showed that such interdependency does exist.

The economic determinants of institutional changes include: the GDP per capita at the beginning of the transition, urbanisation, the GDP per capita growth, the school enrolment rate and resource reserves. The GDP per capita growth has a positive impact on institutional development because when the basic needs of the people are satisfied, the population starts to appreciate the political and economic freedom. Urbanisation is another proxy for the level of development. Its cross-country distribution closely mirrors that of the income levels, with lower income countries being on average more rural (de Melo et al. 2001). A high GER (school enrolment rate to secondary and tertiary schools meaning a higher human capital) has a positive impact on institutional development. More educated societies elect better politicians, which leads to better policies and institutions. Countries rich in resource reserves, whose institutions are not at a certain high level, are more prone to the 'resource curse' (Horváth and Zeynalov 2014). This causes rent-seeking conflicts which could lead to political destabilisation and even to violence and wars (Auty 1997, 2001; Sala-i-Martin and Subramanian 2003; Collier and Hoeffler 2004; Brollo et al. 2013; Rus 2014). Oil and mineral wealth also tends to make states more authoritarian, particularly in poor countries (Ross 2001); while a relatively strong government, which can control resources effectively, tends to invest less in public goods (Sarr and Wick 2010). Sachs and Warner (2001) demonstrate that countries rich in natural resources generally have weak institutions. They are more likely to suffer from a higher level of corruption and state capture by interest groups (Leite and Weidmann 1999; Beck and Laeven 2006).

The literature suggests that all the above mentioned determinants are significant, but the question is which determinants have the highest explanatory power if they are included in one model of institutional change. The answer to this question is the goal of the next section.

### **3. MODEL ESTIMATION**

#### **3.1. Data**

An econometric analysis was conducted for all 24 post-communist countries in 1989-2014. The sources and descriptions of variables are presented in Table 1. As dependent variables, we used the institutional indicators that were discussed in the introduction. These indicators are: the

Index of Economic Freedom by the Heritage Foundation, the Freedom House's political freedom measure, the average of the EBRD indicators, and the average of four World Bank Governance Indicators<sup>11</sup>. The quality of these measures is not free from controversy (Kurtz and Schrank 2007; Donchev and Ujhelyi 2014; Skaaning et al. 2015), however we expect that by including all of them in the empirical analysis the risk of measuring institutional quality inaccurately is substantially limited.

These explanatory variables were chosen in order to represent the three identified groups of the institutional change determinants, i.e. the cultural, political and economic determinants. The cultural set of factors was represented firstly by the number of years in which the economies of the particular countries were managed by central planning. We also employed the distance (in thousands of kilometres) between the capitals of particular countries and Brussels in order to capture their proximity to the Western European countries that form the EU. The choice of this variable is inspired by the gravity models of bilateral trade, which indicate that the exchange of goods, services, ideas and technology should be inversely proportional to the distance between particular countries (Head and Mayer 2014). Additionally, we also included dummy variables that control for the dominant religion in the particular countries. We grouped countries into four broad groups: those predominantly Catholic, those predominantly Protestant, those predominantly Orthodox Christian and those predominantly Muslim. These groups largely reflect the long-standing historical divisions separating Christians from Muslims on the one hand, and the regions of the Holy Roman Empire (predominantly Protestant and Catholic) from Eastern Christianity on the other<sup>12</sup>. Moreover, we employed the level of ethnic and religious diversity. For this purpose, it was decided to use the indices estimated by Alesina et al. (2003), because for most of the analysed countries these indices reflect the level of diversity in the early 1990s. These indices measure the probability that two individuals randomly selected from a population belong to different ethnic or religious groups (Alesina et al. 2003, p. 158).

As political determinants, we first collected a set of dummy variables that reflect the stages in accessing the European Union. During the preliminary

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<sup>11</sup> In the period of 1996-2002 the World Bank Governance Indicators were estimated every two years. Thus, in order to facilitate the empirical analysis, the missing values for the 1997, 1999 and 2001 were filled by linear interpolation. These indicators were also rescaled to in order to make the logarithmic transformation possible.

<sup>12</sup> We do not use the empires legacies variable proposed by BenYishay and Grosjean (2014) because it is highly correlated with the dominant religion in the particular countries.

estimations it quickly became clear that the variable reflecting whether the particular countries had signed an Association Agreement (*EUAA*) generally had a higher explanatory power than the variable indicating the fact of submitting an application to join the EU (*EUAP*) and the variable reflecting EU membership (*EUM*). Moreover, the important advantage of the *EUAA* variable is the fact that signing an association agreement can be seen as an act of exogenous political decision-making (that is not necessarily conditional on the already conducted institutional reforms), therefore it was decided to employ only this variable in the final models.

In order to measure other political factors, the dummy variables indicating membership in the WTO and NATO were also collected. An additional dummy variable was used to indicate the periods of armed conflict experienced by a given country during the transition. The next variable indicated whether the analysed countries were formally independent states before 1989<sup>13</sup> (it was decided to treat the Czech Republic and Russia as independent as well, since their capitals were the capitals of Czechoslovakia and the USSR). North (1997, p. 26) pointed out that successful transition reforms depend on the heritage of informal norms from the pre-communist era. Therefore, we also employed the average level of the Polity2 index in the interwar period<sup>14</sup> – published by the Center for Systemic Peace – that measures whether the political regime in the particular countries was more similar to democracy or autocracy. Finally, the data collected by Bruszt et al. (2012) were used to construct the measure of intensity of dissident activities during the years immediately preceding the collapse of communism<sup>15</sup>.

The economic set of determinants is represented firstly by the index measuring the level of natural resources at the beginning of the transformation, taken from the work of De Melo et al. (2001). Moreover, we used three

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<sup>13</sup> It should be added that the preliminary analysis included one more indicator – the dummy variable denoting whether a particular country was a part of the USSR. However, it was decided to remove it due to the significant multicollinearity with many other factors.

<sup>14</sup> By the interwar period we understand the years 1918-1938 (the period had to be shortened for some countries due to the data accessibility). The Polity2 index for Czechoslovakia dropped substantially in 1939 due to the Nazi occupation, therefore it was decided to remove that year from the calculations. The values for Yugoslavia were used to denote the interwar regime in Croatia and Slovenia, the values for Czechoslovakia were copied for the Czech Republic and Slovakia, the values of Romania were used also for Moldova, while the values for the USSR were used to denote the regime in Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

<sup>15</sup> The index reflects the average yearly number of dissident activities motivated by violations of human rights, economic concerns or demands for political change in 1985-89 (1987-91 for the former Soviet Union countries) per 10 million population.

Table 1  
Variables and sources

Variable	Short description	Source	Obs.
<b>Dependent variables:</b>			
<i>IEF</i>	Overall score of the Economic Freedom (scale 0-100)	<i>Index of Economic Freedom</i> , Heritage Foundation	482
<i>FH</i>	Political Rights and Civil Liberties indices average, measured from 7 to 1 (highest)	<i>Freedom in the World</i> , Freedom House	590
<i>EBRD</i>	Average level of all transition indicators	European Bank for Reconstruction and Development	624
<i>WBG</i>	Average level of Regulatory Quality, Rule of Law, Government Effectiveness and Control of Corruption indices (rescaled to the range from 0 to 5)	<i>The Worldwide Governance Indicators</i> , World Bank	432
<b>Explanatory variables:</b>			
<i>Cultural factors:</i>			
<i>YearsComm</i>	Years under central planning	De Melo et al. (2001)	24
<i>BrussDist</i>	The distance between countries' capitals and Brussels (this. km)	Internet sources	24
<i>Catholic</i>	A dummy variable indicating dominant religion. Armenia was associated with Orthodox countries.	Encyclopedia Britannica, Froese (2004)	24
<i>Muslim</i>			
<i>Orthodox</i>			
<i>Protestant</i>	Indices of the ethnic and religious diversity (scale 0-1)	Alesina et al. (2003)	24
<i>EthnicDiff</i>			
<i>ReligionDiff</i>			24
<i>Political factors:</i>			
<i>EUMv</i>	Dummy variables that equal 1 starting in the year of: EU accession (EUM), applying for membership (EUAP), signing an Association Agreement (EUA) respectively	European Commission (2001), European Commission web page, European External Action Service (2015)	624
<i>EUAPv</i>			624
<i>EUAAv</i>			624
<i>WTOv</i>	Dummy variables that equal 1 starting in the year of WTO or NATO accession respectively	WTO and NATO web pages	624
<i>NATOv</i>			624

<i>WARv</i>	Dummy variable that equal 1 in years when a country experienced an armed conflict	<i>State Fragility Index and War List</i> , Center for Systemic Peace	624
<i>EUMc</i>	Dummy variables that equal 1	European Commission (2001), European Commission	24
<i>EUAPc</i>	if the country joined the EU (EUM), applied for membership (EUAP)	web page, European External Action Service (2015)	24
<i>EUAAc</i>	or signed an Association Agreement (EUAA)		24
<i>WTOc</i>	Dummy variables that equal 1 if the country joined the WTO or	WTO and NATO web pages	24
<i>NATOc</i>	NATO respectively		24
<i>WARc</i>	Dummy variable that equals 1 if a country experienced an armed conflict	<i>State Fragility Index and War List</i> , Center for Systemic Peace	24
<i>State</i>	Dummy indicating whether a country was independent before 1989. The Czech Republic and Russia were also marked as independent.	Encyclopaedia Britannica	24
<i>Inter-Reg</i>	The Polity2 indicator for the interwar period (rescaled to the range from 0 – strongly autocratic to 20 – strongly democratic).	<i>Polity Project</i> , Center for Systemic Peace	24
<i>DissAct</i>	Average number of dissident activities in years 1985-89 (1987-91 for former USSR countries) per 10 m population.	Bruszt et al. (2012)	24
<b>Economic factors:</b>			
<i>Resources</i>	Variable that takes 3 values depending on the level of natural resources in 1989: 2 – rich, 1 – moderate, 0 – poor.	De Melo et al. (2001)	24
<i>GNP1989</i>	GNP per capita PPP in US\$1989 (in thousands)	De Melo et al. (2001)	24
<i>TertiaryEnrol</i>	Total tertiary education enrolment in 1989 as a % of the population of the age group that officially corresponds to the tertiary level of education	<i>World Development Indicators</i> , World Bank	24
<i>Urban</i>	Urbanisation as a % of the population in 1990	De Melo et al. (2001)	24
<b>Control variables:</b>			
<i>GDPgrowth</i>	Growth of the GDP per capita, geometric average over past 3 years	Own estimates based on the <i>World Development Indicators</i> , World Bank	584
<i>FDI</i>	Foreign direct investment, net inflows (% of GDP), average over past 3 years	Own estimates based on the <i>World Development Indicators</i> , World Bank	524

Source: own elaboration.

measures of the socio-economic development level in 1989, which are: the GNP *per capita* PPP, the tertiary education enrolment rate<sup>16</sup> and the level of urbanisation.

Finally, the theoretical framework presented in the second section (Figure 3) also includes indicators of the current economic situation as potential determinants of institutional change. However, including such variables in the econometric model has clear limitations due to the severe endogeneity problem – the relevant literature unequivocally indicates that the level of economic freedom and the quality of governance affect the economic performance (Vega-Gordillo and Álvarez-Arce 2003; Doucouliagos and Ulubasoglu 2006; Mickiewicz 2009; Próchniak 2011). Therefore, we have augmented the dataset by two indicators of current economic performance that are treated only as control variables. We do not derive any conclusions concerning their potential influence on the institutional change, we only assess whether the relationships among the previously listed variables are significant when these two indicators are added to the model. These indicators are the level of economic growth – measured as the geometric average of the GDP *per capita* dynamics over the period of three years, and the level of foreign direct investments that was captured by the average of the FDI net inflows (as a share of the GDP) over the same period.

### 3.2. Methodological issues

The relevant literature indicates that the transition from a centrally planned economy to a market-oriented one was a process where changes in the level of economic and political freedom, governance quality and economic performance, took place complementarily (Piątek, Szarzec and Pilc 2013). Thus, the analysis of the determinants of the institutional change in the transition countries faces the problem of the endogeneity of many possible explanatory variables (Schweickert et al. 2011). To address this problem, we focused mainly on the initial conditions in our analysis, which by definition remained constant during 1989-2014. The focus on the broad set of initial conditions also distinguishes our analysis from many other works presented in the recent literature which concentrated on the consequences of the accession to international organisations (like the EU or NATO) for institutional change (Cameron 2007; Schweickert et al. 2011; Staehr 2011).

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<sup>16</sup> Due to missing observations, values for Croatia are for 1990, for Georgia are for 1991 and for the Slovak Republic are the same as for the Czech Republic.

However, the use of constant factors that represent the initial conditions in a regression analysis excludes the possibility to estimate the typical panel data models, especially the fixed-effects (FE) models (Schweickert et al. 2011, p. 679). We addressed this problem in three different ways. Firstly, we regressed the three 5-year means (for the periods 2000-2004, 2005-2009 and 2010-2014, respectively) of each explanatory variable separately. As a result, we obtained a set of 12 cross-section models which allow us to derive some preliminary conclusions. Secondly, we assumed that the process of institutional change followed a time trend (including the quadratic time term) common for all countries, whilst the initial conditions caused only deviations from this trend in the particular countries. Thus, we interacted the initial conditions with the time trend and obtained, as a result, a complete set of time-varying explanatory variables which allow to estimate the pooled panel model (by the OLS estimator). Formally, this model can be written as follows<sup>17</sup>:

$$y_{it} = \alpha_0 + \alpha_1 t + \alpha_2 t^2 + \sum_{j=1}^p \beta_j X_{jit} + \sum_{k=1}^q \gamma_k t Z_{ki} + \varepsilon_{it}, \quad (1)$$

where  $i$  represents countries,  $t$  denotes time and  $\varepsilon$  is a white noise disturbance.  $X_1, \dots, X_p$  is a vector of time-varying variables (like *NATOV*, *WTOV*) and  $Z_1, \dots, Z_q$  is a vector of the constant initial conditions. Therefore, the parameters  $\gamma_1, \dots, \gamma_q$  measure deviations from the trend of the institutional change that were caused by the initial conditions of the particular countries.

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<sup>17</sup> We have decided to omit the raw values of the initial conditions  $Z_1, \dots, Z_q$  in Equation (1) predominantly due to the severe problems with multicollinearity. The omission of these variables means that we assume that they had not any significant influence on the analysed dependent indicators in the initial year of the analysis (i.e. for  $t = 0$ ). Although such an assumption is usually considered as a strong one in the empirical literature (cf. Brambor, Clark and Golder 2006, pp. 66-70) we believe that in our case this is justified because the analysed countries had very similar formal institutions in the beginning of the transition period.

In the preliminary analysis interactions with the quadratic time term were also included, however due to the problems with multicollinearity they were removed from the final models. The interacted initial conditions were also used to estimate the dynamic panel models by the system GMM estimator (Blundell and Bond 1998). The obtained results showed that adding the lagged values of the dependent variables to the model caused other explanatory variables to be insignificant (however, it should be underlined that the signs of the parameters were the same as in the presented pooled models). Such results are not surprising since the institutional variables are characterized by a strong path dependence and a low short-term volatility. It was decided not to present these results, because they did not help to identify which initial conditions have a significant impact on the future institutional change.

Although a broad set of explanatory variables were used in the estimations, it is still possible that there are some overlooked individual effects in the model, which may affect the results obtained with the pooled specification (Wooldridge 2002, pp. 256-257). Therefore, as a third method we employed the Hausman-Taylor (HT) instrumental variable estimator (Hausman and Taylor 1981), which allows to include the time-invariant factors in the model and can correct the bias caused by the endogenous explanatory variables. The estimation is based on the following equation:

$$y_{it} = \mathbf{X}_{1it}\boldsymbol{\beta}_1 + \mathbf{X}_{2it}\boldsymbol{\beta}_2 + \mathbf{Z}_{1i}\boldsymbol{\delta}_1 + \mathbf{Z}_{2i}\boldsymbol{\delta}_2 + \mu_i + \varepsilon_{it} \quad (2)$$

where  $\mathbf{X}_{1it}$  is a vector of observations on the exogenous, time-varying variables assumed to be uncorrelated with  $\mu_i$  and  $\varepsilon_{it}$ ,  $\mathbf{X}_{2it}$  is a vector of the observations on endogenous, time-varying variables assumed to be correlated with  $\mu_i$  but uncorrelated with  $\varepsilon_{it}$ . Correspondingly,  $\mathbf{Z}_{1i}$  represents the exogenous, time-invariant vector of observations, and  $\mathbf{Z}_{2i}$  is the endogenous, time-invariant vector. Additionally,  $\mu_i$  is the unobserved, country-level random effect that is assumed to have a zero mean and a finite variance - determined by the IID(0,  $\sigma_\mu^2$ ) process - and  $\varepsilon_{it}$  is a white noise disturbance.

Due to its properties, the HT model was used to derive the final research conclusions, whereas the cross-section and pooled regression results were analysed for the sake of comparison. In the presented HT models, the explanatory variables were assigned to the categories listed above in the following way:

time-varying exogenous variables -  $\mathbf{X}_{1it}$  : *EUAAv*, *WARv*;

time-varying endogenous variables -  $\mathbf{X}_{2it}$  : *WTOv*, *NATOv*, *GDPgrowth*, *FDI*;

time-invariant exogenous variables -  $\mathbf{Z}_{1it}$  : *YearsComm*, *BrussDist*, *Catholic*, *Muslim*, *Orthodox*, *Protestant*, *EthnicDiff*, *ReligionDiff*, *State*, *InterReg*, *DissAct*, *Resources*, *GNP1989*, *TertiaryEnrol*, *Urban*.

The decision to treat *EUAAv* and *WARv* as exogenous is not indisputable, therefore, the HT models were estimated also with the assumption that they are endogenous. In this additional analysis the changes in the parameter estimates were minimal (see the Appendix for details) and did not affect the derived conclusions.

Most of the initial conditions are significantly correlated, therefore, the multicollinearity occurred to be a substantial problem during the estimation. Hence, in the cross-section and pooled models a method analogous to the

forward stepwise regression was used. This model was initially estimated only with the constant term (and time variables in the pooled specification). Then, the model was re-estimated with every other independent variable included separately, and it was checked whether the value of the variance inflation factor does not exceed the level of 10. Among the included variables that did not cause any significant problems with multicollinearity, a variable which led to the highest increase in the adjusted coefficient of determination was chosen. Once this variable was included in the model, the whole procedure was repeated for all other independent variables until no more variables could be added due to the overly high value of the variance inflation factor.

However, this procedure resulted in the presence of many insignificant variables in the final model, especially in the pooled specification. Therefore, in order to specify which explanatory variables were the most important determinants of the institutional change, we eliminated the insignificant variables (those with  $p$ -value lower than 0.1) from the pooled models sequentially until all the remaining variables were significant. Afterwards, the Wald test was performed in order to verify whether the decision to omit some variables was justified (particular variables were reintroduced to the model if the Wald test indicated this).

In the case of the HT estimation, a different procedure was applied. First, the HT model was estimated for the same set of variables that were left as the final ones in the pooled model and afterwards, the insignificant variable with the highest  $p$ -value was removed and the model was re-estimated. This operation was repeated until all the variables were significant at least at the 10% level. Subsequently, all the other (omitted) variables were sequentially added to the model and it was checked whether they are statistically significant. If neither of the added variables occurred to be significant, the model was considered as the final one, otherwise, the whole procedure (of removing insignificant variables and sequentially adding the omitted factors) was repeated until the final model was obtained.

In all the presented models the variables were not transformed logarithmically, which is a common tendency in the case of institutional variables (Lehmann and Muravyev 2012, p. 249). However, it should be added that all the models were re-estimated with the logarithmically transformed variables, which led to the same conclusions as for the untransformed ones.

### 3.3. Empirical results

The aim of the applied estimation procedure was to identify the set of factors that could most significantly explain the heterogeneity of the conducted institutional changes in the post-communist countries. Therefore, dropping particular variables from the final models does not mean that they were not correlated with the institutional changes (in fact, almost all the analysed factors, analysed separately, were correlated with institutional indicators – see Table A1 in the Appendix for details). It only means that compared to other factors, they have smaller explanatory power.

The results unequivocally show that among all the analysed variables only two regressors – *EUAA* and *WTO* – had a sufficiently high explanatory power to be included in all the estimated models (see Table 2 for the cross-section results, Table 3 for the pooled results, and Table 4 for the HT estimates). Moreover, *EUAA* occurred to be both significant when treated as an exogenous factor and when analysed as the endogenous one (see Table A2 in the Appendix). The HT estimates also indicated that membership of NATO is an important factor for the institutional change – it was significant for all the employed institutional indicators.

Therefore the results, in contrast to BenYishay and Grosjean (2014), confirm the conclusions derived by other authors (Di Tommaso, Raiser and Weeks 2007; Schweickert et al. 2011; Staehr 2011) concerning the significance of membership in the international organisations (the EU, the WTO and NATO) for institutional change. Moreover, in contrast to Staehr (2011), our results confirm that the prospect of membership in the EU has a positive effect on market reforms (measured by *EBRD*).

Our results show that other political factors were less important for institutional change. Although *WAR* occurred to be a significant regressor in the HT models (Table 4) for the index of political freedom (*FH*) and for the *EBRD* measure of market reforms, the pooled and cross-section models (Tables 2 and 3) do not confirm this result. Quite surprisingly, formal independence before 1989 (measured by the *State* variable) and political regime in the interwar period (*InterReg*) did not occur to be relevant predictors of future institutional reforms (with the sole exception of the significant correlation between *InterReg* and economic freedom measured by *IEF*). Thus, the latter result does not confirm North's (1997) opinion concerning the importance of the heritage of a market economy and democracy for the transformation's success. Moreover, dissident activity in the years immediately preceding the collapse of communism also did not

Table 2a  
Results of the cross-section regression

Dependent variable:	IEF			FH		
	2000-2004	2005-2009	2010-2014	2000-2004	2005-2009	2010-2014
Period:						
<i>Intercept</i>	-3.199 (20.297)	4.024 (13.592)	8.066 (18.661)	2.555* (1.372)	3.225 (2.552)	3.701* (2.017)
<i>YearsComm</i>	0.447 (0.277)	0.193 (0.246)	0.109 (0.319)	0.086*** (0.019)	0.078** (0.035)	0.068** (0.028)
<i>BrussDist</i>		6.076** (2.283)	6.148** (2.329)			
<i>Orthodox</i>	-6.607* (3.717)	-0.059 (2.906)	-1.139 (3.033)			
<i>EthnicDiff</i>		-14.059 (12.06)	-16.032 (12.96)			
<i>ReligionDiff</i>	12.366 (11.324)					
<i>EUAAc</i>	8.214 (6.486)	17.088*** (4.664)	19.419** (7.128)	-0.503 (0.441)	-0.532 (0.820)	-1.186* (0.648)
<i>WTOc</i>	9.651** (4.409)	3.663 (4.199)	2.881 (4.547)	-1.336*** (0.257)	-1.843*** (0.477)	-1.607*** (0.377)
<i>State</i>				0.667** (0.276)	0.976* (0.514)	1.053** (0.406)
<i>InterReg</i>	0.327 (0.486)	0.686** (0.298)	0.411 (0.283)	-0.028 (0.028)	-0.063 (0.053)	-0.041 (0.042)
<i>DissAct</i>				-0.003 (0.006)	-0.009 (0.011)	-0.011 (0.009)
<i>Resources</i>	-0.671 (2.233)	-3.291 (2.444)	-2.395 (2.524)			
<i>GNP1989</i>	-0.804 (1.293)			0.065 (0.106)	0.186 (0.197)	0.178 (0.156)
<i>TertiaryEnrol</i>	-0.275 (0.177)					
<i>Urban</i>	0.493** (0.215)	0.362* (0.194)	0.415* (0.202)	-0.053*** (0.014)	-0.060** (0.027)	-0.055** (0.021)
Observations	24	24	24	24	24	24
R <sup>2</sup>	0.77	0.787	0.754	0.974	0.926	0.953
Adjusted R <sup>2</sup>	0.592	0.65	0.596	0.96	0.887	0.929
Max. value of VIF	9.695	9.858	9.858	9.453	9.453	9.453
P-value of the Breusch-Pagan test	0.832	0.064	0.022	0.495	0.589	0.687

Standard errors in parentheses. Asterisks denote significance levels: \*\*\* – 0.01, \*\* – 0.05 and \* – 0.1. In models where the *p*-value of the Breusch-Pagan test was lower than 0.1, the Cribari-Neto (2004) estimator was used to derive standard errors of parameters. Some variables were not included in the model due to the problem of multicollinearity (details about the procedure can be found in the text).

Source: self-research based on collected data.

Table 2b  
Results of the cross-section regression

Dependent variable:	EBRD			WBGI		
	2000-2004	2005-2009	2010-2014	2000-2004	2005-2009	2010-2014
Period:						
<i>Intercept</i>	1.428 (2.349)	1.111 (2.081)	1.239 (1.396)	1.058 (0.793)	0.215 (0.935)	-0.513 (0.931)
<i>YearsComm</i>	-0.001 (0.034)	0.005 (0.03)	0.004 (0.02)	-0.015 (0.011)	-0.001 (0.013)	0.011 (0.013)
<i>Catholic</i>				0.179 (0.182)	0.114 (0.215)	0.149 (0.214)
<i>Orthodox</i>	-0.417** (0.174)	-0.347* (0.181)	-0.299** (0.129)	-0.468** (0.163)	-0.405* (0.192)	-0.355* (0.191)
<i>EUAAC</i>	0.257 (0.872)	0.316 (0.77)	0.312 (0.502)	0.025 (0.242)	0.645** (0.285)	0.999*** (0.284)
<i>WTOc</i>	0.980*** (0.258)	0.920*** (0.293)	0.907*** (0.186)	0.566** (0.200)	0.332 (0.236)	0.314 (0.235)
<i>WARc</i>				-0.178 (0.156)	0.040 (0.184)	0.012 (0.183)
<i>InterReg</i>	0.011 (0.016)	0.026 (0.015)	0.028** (0.013)	0.004 (0.018)	0.019 (0.021)	0.020 (0.021)
<i>DissAct</i>	-0.000 (0.004)	0.002 (0.004)	0.004 (0.004)	0.001 (0.003)	0.000 (0.004)	-0.000 (0.004)
<i>Resources</i>	0.079 (0.144)	0.029 (0.156)	0.035 (0.108)	-0.076 (0.083)	-0.064 (0.098)	-0.049 (0.097)
<i>GNP1989</i>	-0.055 (0.049)	-0.100* (0.052)	-0.101** (0.038)			
<i>Urban</i>	0.021 (0.001)	0.027** (0.01)	0.025*** (0.007)	0.030*** (0.006)	0.028*** (0.007)	0.025*** (0.007)
Observations	24	24	24	24	24	24
R <sup>2</sup>	0.821	0.834	0.892	0.95	0.935	0.934
Adjusted R <sup>2</sup>	0.706	0.727	0.823	0.912	0.885	0.884
Max. value of VIF	9.54	9.54	9.54	9.703	9.703	9.703
<i>p</i> -value of the Breusch-Pagan test	0.000	0.000	0.000	0.455	0.914	0.361

Standard errors in parentheses. Asterisks denote significance levels: \*\*\* – 0.01, \*\* – 0.05 and \* – 0.1. In models where the *p*-value of the Breusch-Pagan test was lower than 0.1, the Cribari-Neto (2004) estimator was used to derive standard errors of parameters. Some variables were not included in the model due to the problem of multicollinearity (details about the procedure can be found in the text).

Source: self-research based on collected data.

Table 3

Final results of the pooled panel models estimation (with interaction between time trend and initial conditions included)

<b>Dependent variable:</b>	<b>IEF</b>	<b>FH</b>	<b>EBRD</b>	<b>WBG1</b>
<i>Intercept</i>	12.440* (7.267)	3.491*** (0.428)	1.078*** (0.099)	0.797* (0.431)
<i>t</i>	-0.402* (0.227)	0.093 (0.069)	0.173*** (0.026)	-0.103*** (0.027)
<i>t</i> <sup>2</sup>		-0.003** (0.002)	-0.006*** (0.001)	0.002*** (0.001)
<i>t · BrussDist</i>	0.074* (0.040)	0.019** (0.009)		
<i>t · Catholic</i>			0.023*** (0.006)	0.034*** (0.004)
<i>t · Muslim</i>		0.073*** (0.018)		-0.015*** (0.006)
<i>t · Orthodox</i>		0.040*** (0.013)		
<i>t · Protestant</i>			0.026*** (0.009)	0.038*** (0.010)
<i>t · EthnicDiff</i>		-0.068** (0.030)		
<i>t · ReligionDiff</i>	0.859*** (0.309)		0.058** (0.029)	0.029* (0.016)
<i>EUAAv</i>	6.384** (2.871)	-1.562*** (0.224)	0.359*** (0.135)	0.568*** (0.074)
<i>WTOv</i>	5.422*** (1.869)	-0.999*** (0.303)	0.351** (0.147)	0.309*** (0.087)
<i>t · State</i>			0.012** (0.006)	
<i>t · InterReg</i>	0.032** (0.013)			
<i>GDPgrowth</i>	31.931*** (7.579)			1.593*** (0.429)
<i>FDI</i>		-0.031*** (0.011)		
Observations	479	524	624	431
R <sup>2</sup>	0.636	0.842	0.797	0.881
Adjusted R <sup>2</sup>	0.625	0.826	0.786	0.861

Standard errors are reported in parentheses. Asterisks denote significance levels: \*\*\* – 0.01, \*\* – 0.05 and \* – 0.1. It was decided to use the estimator of the covariance matrix proposed by Arellano (1987). The initial models – without significant multicollinearity, but with insignificant variables included – were not presented for the sake of clarity.

Source: self-research based on collected data.

Table 4  
Results of the Hausman-Taylor estimation

Dependent variable:	IEF		FH		EBRD		WBG1	
	initial	Final	initial	final	initial	final	initial	final
<i>Intercept</i>	-1.01 (6.04)	2.70 (4.86)	2.47*** (0.41)	1.97*** (0.69)	1.89*** (0.2)	0.96*** (0.34)	1.41*** (0.25)	1.61*** (0.18)
<b>time-varying exogenous</b>								
<i>EUAAv</i>	5.71*** (1.35)	3.27*** (1.22)	-1.02*** (0.11)	-1.13*** (0.11)	0.72*** (0.08)	0.61*** (0.08)	0.36*** (0.06)	0.29*** (0.06)
<i>WARv</i>				0.29** (0.13)		-0.41*** (0.11)		
<b>time-varying endogenous</b>								
<i>WTOv</i>	4.64*** (0.71)	2.94*** (0.66)	-0.13** (0.07)	-0.14* (0.08)	0.91*** (0.07)	0.71*** (0.06)	0.15*** (0.03)	0.12*** (0.03)
<i>NATOv</i>		5.99*** (0.58)		-0.39*** (0.09)		0.20*** (0.06)		0.15*** (0.02)
<i>GDPgrowth</i>	38.66*** (3.79)	39.57*** (3.42)				1.04*** (0.31)	0.23 (0.16)	0.25* (0.15)
<i>FDI</i>			-0.01** (0.01)					
<b>time-invariant exogenous</b>								
<i>YearsComm</i>				0.04*** (0.01)				
<i>BrussDist</i>	1.09 (0.83)		0.51** (0.20)					
<i>Catholic</i>					0.05 (0.13)		0.81*** (0.12)	0.77*** (0.12)
<i>Muslim</i>			1.74** (0.68)	1.87*** (0.40)			-0.34*** (0.12)	-0.40*** (0.12)
<i>Orthodox</i>			1.07*** (0.39)	0.80** (0.34)				
<i>Protestant</i>					-0.00 (0.21)		0.87*** (0.18)	0.87*** (0.18)
<i>EthnicDiff</i>			-1.39 (1.03)					
<i>ReligionDiff</i>	15.11** (6.61)	14.35** (6.88)		-1.60* (0.86)	0.66 (0.49)		0.41 (0.33)	
<i>State</i>					-0.08 (0.13)			
<i>InterReg</i>	0.62*** (0.23)	0.41* (0.21)						
<i>TertiaryEnrol</i>						0.01*** (0.00)		
Observations	479	479	524	590	624	584	431	431
$\sigma_{\mu}$	4.62	4.6	0.68	0.54	0.25	0.28	0.21	0.22
$\sigma_{\varepsilon}$	4.53	4.08	0.47	0.61	0.53	0.45	0.16	0.16
$\sigma_{\varepsilon} / \sigma_{\mu}$	0.98	0.89	0.69	1.13	2.12	1.61	0.76	0.73

Standard errors are reported in parentheses. Asterisks denote significance levels: \*\*\* – 0.01, \*\* – 0.05 and \* – 0.1. Models called “initial” are based on the pooled panel data models presented in Table 3. Models called “final” were obtained by the procedure of the sequential removing of insignificant variables from the models presented in the left column (details about the procedure can be found in the text).

Source: self-research based on collected data.

appear to be an important predictor when other explanatory variables were included in the model.

One may ask what decided that some countries chose to join the international organisations soon after 1989, while others did not? The results suggest that much can be explained by the cultural factors. The dendrogram presented in the introduction (Figure 2) revealed that the group of the most advanced countries in the institutional reforms comprises only of Catholic and Protestant countries. The HT estimates (Table 4) show that the dominant religion is a meaningful regressor for political liberty (FH) and quality of governance (WBGI).

Thus, the results confirmed that the Catholic and Protestant countries had improved their institutions to a much greater extent than those states where Orthodox Christianity or Islam is the dominant religion, which confirms the conclusions derived by Di Tommaso, Raiser and Weeks (2007). This is in contrast with the research which indicated that Catholicism should be equated to Orthodox Christianity and Islam in terms of hindering the development of the social capital, and in consequence also the quality of governance (La Porta et al. 1997). However, the collected data do not allow to interpret this outcome as a result of the differences between these religions, especially because the period of communist rule caused a substantial drop in the religious adherence in many of the analysed countries (Froese 2004). We interpreted the dominant religion variable rather as a measure of the close or distant historical ties with the catholic and protestant countries of Western and Northern Europe. The importance of the cultural factors also confirms that the process of institutional change is path-dependent (Di Tommaso, Raiser and Weeks 2007), however, this dependence has much deeper roots than the political traditions of the twentieth century alone (see: Dimitrova-Grajzl 2007).

The results showed that geographical distance from the country capitals to Brussels and ethnic diversity are not meaningful factors when other variables are included in the model<sup>18</sup>. An unexpected outcome is the positive and significant relationship between religious diversity and the level of economic and political freedom (Table 4). However, such a result is less surprising once it is noticed that high levels of religious diversity in the early 1990s were observed in the Czech Republic and Georgia, whereas low levels were reported for such countries as Tajikistan, Turkmenistan or Uzbekistan.

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<sup>18</sup> We find quite surprising the positive correlation between the *BrussDist* and *IEF* that was found in the cross-section and pooled regressions. We suspect that this non-robust relationship may be a consequence of the relatively high level of economic freedom in such countries as Armenia or Georgia.

Finally, the results revealed that the initial economic conditions were not as important for future institutional changes as the political or cultural factors described above. In the HT regression (Table 4), only the significant relationship between *TertiaryEnrol* and *EBRD* was identified. The cross-section estimation (Table 2) showed that the level of urbanisation in the beginning of the transition could also be an important factor – the higher the urbanisation, the greater the institutional changes. Quite surprisingly, the negative relationship between the abundance of natural resources (the *Resources* variable) and the institutional change in the transition countries – which is broadly described in the literature (for instance Beck and Laeven 2006; BenYishay and Grosjean 2014 among others) – was not confirmed by any of the estimated models. Although the *Resources* variable is negatively correlated with all the analysed institutional indicators when examined separately (see Table A1 in the Appendix), it seems that the ‘resource curse’ loses its explanatory power when other factors are included in the model.

## CONCLUDING REMARKS

The conducted research brings us to the following conclusions:

1. In the group of 24 analysed transition countries it is possible to identify two basic groups: the mostly democratic Central Europe and Baltic states (CEBS) and Southeast Europe (SEE) on one side, and the largely autocratic countries in Central Asia (CA) and Eastern Europe and the Caucasus (EEC) on the other.
2. The initial conditions had a significant impact on the scale of the institutional change in the post-communist countries during the transition period. In particular, the dominant religion turned out to be an important driver, which we interpret as a measure of the close or distant cultural and historical ties with Western Europe.
3. The determination of the political elites to integrate with international organisations, especially the EU, was a crucial factor. It imposed the direction of the planned institutional changes and determined the actions of the governments from the very moment when they expressed their country’s will to affiliate.
4. Although the possession of natural resources is negatively correlated with institutional quality, it appeared to be an insignificant factor when cultural and political determinants were included into the estimates.

In the analysis we divided the determinants of institutional changes into three broad categories: cultural, political, and economic, to which we attributed selected variables. However, the results suggest it would be possible to apply a division into two categories which exercise a long-term influence on political and economic institutions, i.e. those describing: (1) the initial conditions related to the historical and cultural heritage of a given country and (2) the membership in international organisations which required fulfilling specific conditions to provide democracy and market economy. If this division was applied, it would indicate that the institutional development of the transition countries is path dependent and is determined by the requirements imposed by the international organisations. This means that already at the very beginning of the transition it could have been “guessed” what the direction of the institutional and economic development in particular countries would be. It appears that countries which recorded political and economic development owe this to the factors that were shaped before the communist period, and by the decision to join NATO and the EU as soon as possible.

Therefore, if politicians dedicated to integrating their countries with international organisations and able to convince the voters that this is the best direction had been elected in the beginning of the transition period, the potential negative impact of initial conditions might have been limited substantially. The examples of Georgia, Moldova and Ukraine show the significance of political decisions, but also the dependence on geopolitics.

Among the variables taken into account in the study, the affiliation with NATO, the WTO and the EU are the only variables describing internal policy, which leads us to the following question: how else can we combine the impact of internal policy on the development of institutional and legal order? The second question is: to what extent are the political decisions dependent on the historic and cultural legacy of the particular countries? This indicates a possible direction for further research into institutional changes in the transition countries.

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## Appendix

Table 1  
Variables and sources

Variable	Short description	Source	Obs.
<b>Dependent variables:</b>			
<i>IEF</i>	Overall score of the Economic Freedom (scale 0-100)	<i>Index of Economic Freedom</i> , Heritage Foundation	482
<i>FH</i>	Political Rights and Civil Liberties indices average, measured from 7 to 1 (highest)	<i>Freedom in the World</i> , Freedom House	590
<i>EBRD</i>	Average level of all transition indicators	European Bank for Reconstruction and Development	624
<i>WBI</i>	Average level of Regulatory Quality, Rule of Law, Government Effectiveness and Control of Corruption indices (rescaled to the range from 0 to 5)	<i>The Worldwide Governance Indicators</i> , World Bank	432
<b>Explanatory variables:</b>			
<b>Cultural factors:</b>			
<i>YearsComm</i>	Years under central planning	De Melo et al. (2001)	24
<i>BrussDist</i>	The distance between countries' capitals and Brussels (ths. km)	Internet sources	24
<i>Catholic</i>	A dummy variable indicating dominant religion. Armenia was associated with Orthodox countries.	Encyclopedia Britannica, Froese (2004)	24
<i>Muslim</i>			
<i>Orthodox</i>			
<i>Protestant</i>			
<i>EthnicDiff</i>	Indices of the ethnic and religious diversity (scale 0-1)	Alesina et al. (2003)	24
<i>ReligionDiff</i>			24
<b>Political factors:</b>			
<i>EUMv</i>	Dummy variables that equal 1 starting in the year of: EU accession (EUM), applying for membership (EUAP), signing an Association Agreement (EUAA) respectively	European Commission (2001), European Commission web page, European External Action Service (2015)	624
<i>EUAPv</i>			624
<i>EUAAv</i>			624
<i>WTOv</i>	Dummy variables that equal 1 starting in the year of WTO or NATO accession respectively	WTO and NATO web pages	624
<i>NATov</i>			624

<i>WARv</i>	Dummy variable that equals 1 in years when a country experienced an armed conflict	<i>State Fragility Index and War List</i> , Center for Systemic Peace	624
<i>EUMc</i>	Dummy variables that equal 1 if the country joined the EU (EUM), applied for membership (EUAP) or signed an Association Agreement (EUAA)	European Commission (2001), European Commission web page, European External Action Service (2015)	24
<i>EUAPc</i>			24
<i>EUAAc</i>			24
<i>WTOc</i>	Dummy variables that equal 1 if the country joined the WTO or NATO respectively	WTO and NATO web pages	24
<i>NATOc</i>			24
<i>WARc</i>	Dummy variable that equals 1 if a country experienced an armed conflict	<i>State Fragility Index and War List</i> , Center for Systemic Peace	24
<i>State</i>	Dummy indicating whether a country was independent before 1989. The Czech Republic and Russia were also marked as independent.	Encyclopaedia Britannica	24
<i>InterReg</i>	The Polity2 indicator for the interwar period (rescaled to the range from 0 – strongly autocratic to 20 – strongly democratic).	<i>Polity Project</i> , Center for Systemic Peace	24
<i>DissAct</i>	Average number of dissident activities in years 1985-89 (1987-91 for former USSR countries) per 10 m population.	Bruszt et al. (2012)	24
<b>Economic factors:</b>			
<i>Resources</i>	Variable that takes 3 values depending on the level of natural resources in 1989: 2-rich, 1-moderate, 0-poor.	De Melo et al. (2001)	24
<i>GNP1989</i>	GNP per capita PPP in US\$1989 (in thousands)	De Melo et al. (2001)	24
<i>TertiaryEnrol</i>	Total tertiary education enrolment in 1989 as a % of the population of the age group that officially corresponds to the tertiary level of education	<i>World Development Indicators</i> , World Bank	24
<i>Urban</i>	Urbanisation as a % of the population in 1990	De Melo et al. (2001)	24
<b>Control variables:</b>			
<i>GDPgrowth</i>	Growth of the GDP per capita, geometric average over past 3 years	Own estimates based on the <i>World Development Indicators</i> , World Bank	584
<i>FDI</i>	Foreign direct investment, net inflows (% of GDP), average over past 3 years	Own estimates based on the <i>World Development Indicators</i> , World Bank	524

Source: own elaboration.

Table A2

Results of the Hausman-Taylor regression where all the time-varying variables were treated as endogenous

<b>Dependent variable:</b>	<b>IEF</b>	<b>FH</b>	<b>EBRD</b>	<b>WBG1</b>
<i>Intercept</i>	2.66 (4.86)	1.96*** (0.69)	0.98*** (0.34)	1.62*** (0.18)
<b>time-varying endogenous</b>				
<i>EUAAv</i>	3.43*** (1.28)	-1.12*** (0.11)	0.59*** (0.09)	0.27*** (0.06)
<i>NATov</i>	5.99*** (0.58)	-0.39*** (0.09)	0.20*** (0.06)	0.15*** (0.02)
<i>WTOv</i>	2.95*** (0.66)	-0.14* (0.08)	0.71*** (0.06)	0.12*** (0.03)
<i>WARv</i>		0.29** (0.13)	-0.44*** (0.11)	
<i>GDPgrowth</i>	39.55*** (3.42)		1.03*** (0.31)	0.25 (0.15)
<b>time-invariant exogenous</b>				
<i>YearsComm</i>		0.04*** (0.01)		
<i>Catholic</i>				0.78*** (0.12)
<i>Muslim</i>		1.87*** (0.40)		-0.41*** (0.12)
<i>Orthodox Christian</i>		0.80** (0.34)		
<i>Protestant</i>				0.89*** (0.18)
<i>ReligionDiff</i>	14.47** (6.88)	-1.60* (0.86)		
<i>InterReg</i>	0.40* (0.21)			
<i>TertiaryEnrol</i>			0.01** (0.01)	
Observations	479	590	584	431
$\sigma_u$	4.6	0.54	0.28	0.22
$\sigma_e$	4.1	0.61	0.45	0.16
$\sigma_e\sigma_u$	0.89	1.13	1.61	0.73

Standard errors are reported in parentheses. Asterisks denote significance levels: \*\*\* – 0.01, \*\* – 0.05 and \* – 0.1. The models have the same set of variables as in Table 4.

Source: self-research based on collected data.