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**Working Paper**

## Which membership matters? External vs. internal determinants of institutional change in transition countries

Kiel Working Paper, No. 1421

**Provided in Cooperation with:**

Kiel Institute for the World Economy – Leibniz Center for Research on Global Economic Challenges

*Suggested Citation:* Drautzberg, Thorsten; Melnykovska, Inna; Schweickert, Rainer (2008) : Which membership matters? External vs. internal determinants of institutional change in transition countries, Kiel Working Paper, No. 1421, Kiel Institute for the World Economy (IfW), Kiel

This Version is available at:

<https://hdl.handle.net/10419/4291>

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# Working Papers

Kiel Institute  
for the World Economy



## **Which Membership Matters?**

### **External vs. Internal Determinants of Institutional Change in Transition Countries**

by

Thorsten Drautzburg, Inna Melnykovska, and  
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No. 1421 | May 2008

Web: [www.ifw-kiel.de](http://www.ifw-kiel.de)

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## **Which Membership Matters? External vs. Internal Determinants of Institutional Change in Transition Countries\***

Thorsten Drautzburg, Inna Melnykovska, and Rainer Schweickert

Abstract:

This paper analyses potential internal and external determinants of institutional change as measured by the World Bank Governance Indicators (WBGI) based on a panel of 25 transition countries for the period from 1996 to 2005. We show that natural resources and capital inflows exert an insignificant or negative influence and that economic policy allows to break path-dependency. Most importantly, however, we are able to show that incentives provided by NATO membership are important for institutional development and even more robust than variables measuring the integration into the EU. This allows for some optimism about the effectiveness of ENP policies and supports the argument that NATO, offering regional security, may provide significant additional incentives for good governance.

Keywords: EU, NATO, Transition Economies, Institutional Change, Governance

JEL-Classification: F15, F20, F50, P20, P30, O19

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\* This paper is an output from the ENEPO project on EU Eastern Neighbourhood: Economic Potential and Future Development financed by the EU in the Sixth Framework Programme. The authors thank the participants of the second ENEPO workshop in Warsaw on April, 11 – 12, 2007 for helpful comments. We would also like to thank Hanno Heitmann for his technical assistance.

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## 1. Introduction

The concept of Europeanization, i.e. the adoption of EU rules by transition countries, is possibly “the most massive international rule transfer in recent history” (Schimmelpfennig and Sedelmaier 2005). The Copenhagen criteria for accession to the EU demand the fulfillment of a series of political, legal and economic criteria known as “Copenhagen Criteria”. So far, the EU has indeed been successful in promoting democracy and economic development by fostering institution building in most central and eastern European transition countries (Roland 2006).

However, after the Eastern enlargement has been completed with the recent accession of Bulgaria and Romania in 2007, the “carrot” of membership for pushing institutional development in transition countries is at present exclusively reserved for the Western Balkan states. For CIS as well as for Mediterranean countries, European Neighborhood Policy (ENP) foresees support from the EU conditional on performance according to governance criteria. Nevertheless, compared to the big carrot of membership, ENP incentives may be too limited in order support internal drivers of institutional reform (Vinhas de Souza et al. 2006).

So far, the empirical evidence on external drivers of institutional change in transition countries is rather limited. Recent papers focus mainly on internal economic, political, and cultural factors (Di Tommaso, Raiser, and Weeks 2007; Beck and Laeven 2006) treating an EU influence rather as a control variable than as a main determinant of institutional change. Hence, this paper fills an empirical gap by focusing on external influences and analyzing the influence of different international organizations European transition country may join. These organizations often provide positive incentives for improving institutions. While papers analyzing the impact of trade relations include WTO membership (see, e.g., Bacchetta and Drabek 2004) and also the impact of the EU has received extensive attention, the accession to NATO as a determinant of institutional change has not. NATO membership has been mostly analyzed with respect to economic aspects of regional security (e.g. Sandler and Hartley 1999).

We show in this paper, that for our panel sample of transition countries, incentives provided by NATO membership are important for institutional development and more robust than variables measuring the integration into the EU. Section 2 gives a short overview of the existing literature which presents our theoretical arguments and serves to identify control variables for the subsequent empirical analysis. We proceed by outlining the empirical strategy and operationalisation of the theoretical concepts into measurable variables in section 3. Section 4 presents the empirical findings and section 5 concludes.

## 2. External and Internal Determinants of Institutional Change

The case of European transition countries is clearly different from other developing and emerging market economies. Compared to developed countries, all of them show a backlog in terms of institutional development. However, the reunification of Europe after the breakdown of communist regimes has provided a strong pull effect in favor of good institutions. Looking at the various clubs which European transition countries may join, one could argue that EBRD, World Bank and IMF are important players providing incentives for reforms. Nevertheless, there is no exclusive accession process which would demand institutional preconditions. The impact of these institutions seems therefore to be rather program specific. This is different for the EU but also for the NATO and the WTO (see Table 1 for the chronology of accession).

Concerning the impact of the EU on institutional change, there is little doubt that membership matters. Way and Levitsky (2007) explain the institutional divide between the democratic Central and Southeastern Europe and the autocratic CIS by potential membership in the EU. Similarly, Pop-Eleches (2007) argues that post-communist democratization has been faster and less prone to reversals in the countries where for geographic, historical, cultural, and economic reasons the promise of deep integration with Western Europe was the strongest at the outset of the transition. According to Haughton (2007), the EU's 'transformative power' is strongest when deciding to open accession negotiations. The EU's influence is also shown to be stronger in some areas, especially in economic aspects necessary to establish the single market, while it is clearly weaker in other areas like minority protection. Schimmelpfennig (2007) argues that only the credible conditional promise of membership has had the potential to produce compliance with liberal-democratic norms in norm violating transformation countries. According to case studies on Latvia, Slovakia and Turkey, EU democratic conditionality is shown to work through a strategy of "reinforcement by reward" through intergovernmental bargaining. These arguments are confirmed by Beck and Leaven (2006) who show that a dummy variable for EU membership provides an additional positive effect on institutional change in European transition countries. They measure institutional change using the World Bank Governance Indicators (WBI). However, the cross country approach adopted by Beck and Leaven only allows to include control variables like EU membership one-by-one which creates serious problems of misspecification.

In contrast, only a few studies analyze the impact of the EU on institutional change by means of agreements below a membership perspective. Positive effects of links to the EU may be reached via a variety of channels: promotion of democratic attitudes among citizens, political incentives for elites (in government and in the opposition), domestic power balance shifts in favor of democratic politicians, and promotion of better democratic governance through incentives for public administration reform (Pop-Eleches 2007). Hence, democracy is promoted by a combination of political conditionality with significant political and economic incentives. Di Tommaso, Raiser, and Weeks (2007) confirm the positive impact of basic agreements between the EU and transition countries which are open to all transition countries. While this finding would allow for some optimism regarding weak incentives provided by ENP, the paper uses indicators from the EBRD for measuring institutional change in terms of economic institutions only. However, the Europeanization strategy of the EU is not restricted to a narrow concept of economic institutions but targets political and legal institutions as well. Therefore, there is scope for checking the robustness of the result by estimating the impact of basic EU agreements on a broad concept of institutional development as measured by the WBI.

While this process of EU enlargement figured prominently in the transition literature, NATO membership and enlargement is almost exclusively discussed in terms of economic aspects of regional security (see, e.g., Sandler and Hartley 1999; Andrei and Teodorescu 2005). Interestingly, the NATO also has developed a concept for enlargement. As a procedure for nations wishing to join the NATO, a mechanism called Membership Action Plan (MAP) was approved at NATO's Washington Summit of 1999. A country's participation in MAP entails the annual presentation of reports concerning its progress on five different measures. Four measures on organization, resources, safeguards, and compatibility – like the *acquis* in the case of the EU - focus on the potential of (military) cooperation between the accession country and NATO. The fifth and possibly the most important measure demands the willingness to settle international, ethnic or external territorial disputes by peaceful means and to commit to the rule of law and human rights, and democratic control of the armed forces. Hence, NATO accession requires a minimum of institutional standards. The "carrot" in this

case is regional security rather than economic cooperation. Hence, it can be argued that NATO accession could have a positive effect which might be comparable to the impact of EU accession.

In addition to the EU and the NATO, the WTO also provides major incentives for institution building. Beyond its direct impact on import liberalization and macroeconomic policies, WTO membership helps to reduce incentives for corruption by providing countries with powerful institutional checks and balances in the international economic sphere. To become a WTO member, a set of institutions and policies has to be implemented. Consequently, these WTO-conform institutions and policies contribute to the openness of the economy, enhance the transparency and promote the rule of law (Bachetta and Drabek 2004). The institutional quality is even affected long before the actual accession to the WTO in the process of the preparation and separate negotiations between countries. However, as reported in Busse et al. (2007) empirical studies largely fail to show a significant impact once trade flows are controlled for.

In addition to membership in international institutions, proximity (to the West) can be assumed to matter in various dimensions (Way and Levitsky 2007; Vinhas de Souza et al. 2006).

- Proximity to the West in terms of cultural norms is be assumed to provide a significant path-dependency concerning institutional development (Di Tommasso, Raiser, and Weeks 2007; Kitschelt 2001; La Porta, Shleifer, and Vishny 1999). A society's culture adapts rather slowly to changing economic circumstances because of a high persistence of cultural norms and human belief systems. At the same time, religious affiliation, like belonging to the community based on western Christianity, can be thought of as a proxy for a complex set of initial conditions.
- Trade and capital flows may impact on the preconditions for institutional change through closer interaction with the outside world. Concerning trade flows, Busse et al. (2007) argue that any analysis on the relative impact of trade on income and growth suffers from a lack of relevant control variables, if important determinants of a successful trade liberalization, such as institutional quality affecting the reallocation of resources, are not included. Their results confirmed earlier work showing that more open economies tend to have better institutions (see, e.g. Wei 2002; Islam and Montenegro 2002; IMF 2005). For the CIS context, Havrylyshyn (2006) claims that openness and sweeping reforms have reduced social pain in Central Europe and the Baltic states. He suggests that liberalization and openness ensure economic recovery and democratic institutions.
- Arguably, foreign direct investment (FDI) inflows may also help promote good governance in CIS countries. However, focusing on corruption, Hellmann, Jones, and Kaufmann (2002) show that foreign firms are more likely than domestic firms to pay kickbacks for public procurement contracts. Especially in countries where kickbacks are less common, foreign firms are more likely to engage in this form of corruption. In countries with a significant state capture problem, FDI firms are almost twice as likely as domestic firms to be engaged in efforts to capture the state. Hence, overall the presence of foreign firms seems to widen the gap between countries with good and countries with bad institutions.
- The allocation of aid has become more selective in recent years, and has become more responsive to economic fundamentals and the quality of a country's policy and institutional environment (Claessens, Cassimon, and von Campenhout 2007). Hence, aid should support institutional change. However, a potential problem with aid inflows

is created by their direct impact on government behavior. By expanding a government's external resources, foreign aid can weaken institutions by reducing accountability. Evidence suggests that industries which are more sensitive to bad governance grow at a slower pace in countries that receive more aid (Rajan and Subramanian 2007).

All in all, proximity in terms of culture and trade is assumed to have a positive impact on institutional change while the impact of capital flows is, at least, open to concerns about potential moral hazard problems related to the inflow of financial resources. So far, an empirical analysis of all relevant external drivers of institutional change in European transition countries is still missing.

In contrast, the analysis of internal determinants can be based on a variety of papers. The basic distinction is between economic and political factors. The view that economic performance drives institutional development is supported by the modernization hypothesis which states that higher levels of economic development will lead to better institutional quality (see, e.g., Lipset 1959; Acemoglu et al. 2007). In the same vein, the Grand Transition view sees development as a process where steady economic growth causes transition of all institutions (Paldam and Gundlach 2008). However, economic shocks and macroeconomic may also be an important determinant of political transition (Acemoglu and Robinson 2006; Paldam 2002). These shocks give rise to a window of opportunity for citizens to contest power, as the cost of fighting ruling autocratic regimes is relatively low. When citizens reject policy changes that are easy to renege upon once the window of opportunity closes, autocratic regimes must make democratic concessions to avoid costly repression (see also Brückner and Ciccone 2008). Apart from economic performance, also economic policy is important for driving institutional change. Looking at the typical sequencing of reforms suggests that economic liberalization and privatization, as well as the granting of basic political rights and liberties, preceded institutional reforms such as the establishment of a competition authority and stronger financial market supervision. Hence, policy can to some extent break path-dependence through economic and political liberalization (Di Tommaso, Raiser, and Weeks 2007; Havrylyshyn 2006).

A political economy explanation of why institution building has varied so much across transition countries is provided by Beck and Laeven (2006). They argue that political entrenchment and reliance on natural resources critically determines whether the behavior of the ruling elite and thus the transition process is catalytic or extractive. While this seems to support the pessimistic view that initial conditions determine future outcomes (Fish 1997; Kopstein and Reilly 2000; Guiso et al. 2006; Zweynert 2006), there is also a more optimistic view on the potential for institutional progress in rent-seeking societies which links economic and politics. Olson (2000) argues that the availability of short-term rents like non-renewable resources provides the basis for the rent-seeking strategy of "roving bandits" but that "roving bandits" could transform into "stationary bandits" after having reached the limits of their capacities to accumulate and control the wealth on the basis of informal institutions (see also Tornell 1998; Dixit, Grossman and Helpman 1997).

Concerning the influence of resource endowment on institution building, plenty of studies suggest that the adverse effect of resource abundance on institutional quality is particularly strong for easily accessible 'point-source' natural resources with concentrated production and revenues and thus massive rents, i.e., oil, diamonds, minerals and plantation crops rather than agriculture (e.g., rice, wheat and animals) whose rents are more dispersed throughout the economy, and with easy appropriation of rents through state institutions (Auty, 1997, 2001; Isham, et. al., 2005; Sala-i-Martin and Subramanian 2003; Murshed, 2004; Collier and Hoeffler 2004; Ploeg 2007). Analyzing the political economy of resource-driven growth in the

CIS countries, Auty (2001; 2006) finds that most resource-abundant countries engender a political state that is factional or predatory and whose government responds slowly to the challenges of economic reforms, distorts the economy in the pursuit of rents that are deployed to force industrialization and this leads to a staple trap. The negative influence is explained with rent-seeking behavior and lower pressure for political reform. In contrast, other natural resources, measured for example as the share of agriculture in GDP, are not found to have a negative influence.

All in all, there is established evidence on the importance of internal determinants of institutional change. However, any empirical analysis needs to condition on external determinants as well in order to avoid misspecification. For European and CIS transition countries, potentially relevant external factors comprise economic relations and proximity and, especially, membership or cooperation with EU, NATO and WTO. As was shown above, entry into these clubs is conditioned on some institutional progress.

### 3. Empirical Model

#### 3.1. Data and Methodological Issues

In order to assess our hypotheses, we analyze the development of institutional characteristics in a sample of 25 transition economies between 1996 and 2005. While institutions are often regarded as highly persistent and analysis of institutional change therefore rely generally on much longer time horizons, we expect to find significant changes in our sample. Transition countries undergo a period of accelerated institutional change. Therefore it is also justified to analyze time horizons of one decade. Indeed, looking at the empirical data, which is described in detail in the next section, confirms this claims. While the data for the entire sample of countries is generated in order to have a zero mean for each year, the sample of transition countries moves up significantly in the distribution of institutional performance in the sample period, as shown by the change in the institutional quality in Table 2. Apart from this significant variation relative to the rest of the world, also within the sample of transition countries there is important variation during the sample period, which is shown by the little mass on the main diagonal of the transition probability matrix in Table 2.

For our analysis we rely on a linear regression model of the following type:

$$y_{it} = \mathbf{x}_{it}'\boldsymbol{\beta} + \mu_i + \nu_t + \varepsilon_{it} \quad i = 1, 2, \dots, N \quad 1 \leq t \leq T,$$

$$E(\mu_i) = E(\nu_t) = E(\varepsilon_{it}) = E(\mu_i \nu_t) = E(\mu_i \varepsilon_{it}) = E(\nu_t \varepsilon_{it}) = 0.$$

Here  $i$  indexes countries and  $t$  represents years, whereas  $\mathbf{x}_{it}$  is a column vector of explanatory variables. Notice that it is not assumed that the variables are observed in consecutive years.

In the context of institutional change, a simple regression analysis faces several difficulties. Heterogeneous country characteristics which cannot be completely observed and measured persist over time and affect both our explanatory as well as the dependent variable. Formally, this means that  $E(\mu_i \mathbf{x}_{it}) \neq \mathbf{0}$  for some  $i$ . We address this problem through two different strategies. First, we introduce several measures of country characteristics which can be expected to account for several dimensions of relevant country characteristics. To the extent that this approximation is good enough, the problem is solved. Second, we introduce country



fixed effects.<sup>1</sup> In either strategy we account for additional time fixed effects by including time dummy variables.

It is important to highlight that the fixed effects (FE) estimator identifies the vector  $\beta$  of marginal effects of the explanatory variables only using the variation of institutions within each country over time. We argue that due to our sample of transition countries, this variation within countries is also meaningful for institutional changes. In contrast, the other estimator pools all observations and weights variation within countries over time and between countries equally. When the regressors proxy only imperfectly for country specific factors, the estimator is possibly biased. This estimator is subsequently labeled Pooled OLS (POLS) estimator. We report the POLS estimates because they incorporate more information when the approximation of the fixed country effects is good enough to reduce the bias to a minimum.<sup>2</sup>

Another problem of identifying causal effects of the explanatory variables is posed by endogeneity. Theory suggests that economic development and policies might possibly be affected by institutional development beyond country fixed effects:  $E(\varepsilon_{it} \mathbf{x}_{it}) \neq \mathbf{0}$  for some  $i, t$ . We account for this possibility by instrumenting possibly endogenous variables with their own lagged values. Given the persistence of institutions, we use lags of two and more periods to reduce problems due to autocorrelated disturbances. The assumption of exogeneity of the instruments and exogenous regressors is then tested using a standard Hansen test. This instrumental variables (IV) estimation is combined with both the standard pooled and the fixed effects estimator described above.<sup>3</sup>

For assessing hypotheses about our regression model, it is necessary to model the covariance matrix of the combined disturbance term,  $\mu_i + \nu_t + \varepsilon_{it}$ . We generally work with a covariance matrix calculated using disturbances clustered by countries. In contrast to simple heteroskedasticity consistent estimators for the covariance matrix, this allows additionally for autocorrelation of the residuals.<sup>4</sup> Additionally, for fixed effects models the standard heteroskedasticity-consistent covariance matrix is inconsistent (Stock and Watson, 2006).<sup>5</sup>

Given the relatively small dataset, only a limited number of control variables can be employed. In principle, restricting the number of regressors could introduce omitted variables bias. To control for this possibility, we estimate first a relatively large model which includes more regressors than might be warranted for such a small sample.<sup>6</sup> The large model should therefore only be viewed as tentative to identify the most important determinants of

<sup>1</sup> More generally, we transform our variables to deviations from country means to eliminate the time-invariant country-specific error term by introducing the country fixed effects. A first difference transformation, as used in Arellano-Bond and other GMM panel estimators, is not possible because the dependent variable is not observed for consecutive years. We also refrain from using two-step GMM for IV estimation and feasible GLS estimators (“random effects”) because of the small size of the cross-section in our dataset.

<sup>2</sup> In a larger sample we would have employed the efficient GLS (random effects) estimator and used a Hausman test to assess the hypothesis of inconsistency of the pooled estimator formally. Given the small sample size, we refrained from doing so.

<sup>3</sup> The estimation is implemented using the `-ivreg2-` and `-xtivreg2-` commands for Stata (Baum et al., 2007; Schaffer, 2007).

<sup>4</sup> Tests of the Null hypotheses of homoskedasticity and absence of autocorrelation in the residuals could always be rejected at standard levels of significance and are not reported.

<sup>5</sup> To achieve consistency of the estimated covariance matrix, we need to restrict our exogenous regressors and exogenous instruments in the case of IV estimators to less than the number of countries. This is only a problem for IV estimation and we therefore address this problem by using the option to partial the effects of time dummies out before estimating the model of interest.

<sup>6</sup> Additionally, this introduces problems of consistency of standard errors.

institutional change and given the small sample size. No strict general-to-specific modeling strategy is applied since models which nest all alternatives would be excessively large. The preferred models are more parsimonious and include only those regressors which were significant in both the standard least squares and IV specifications of the pooled or FE extended models. Then various extensions of the preferred models are estimated to show the robustness of coefficient estimates and their significance to various alternative specifications.

### 3.2. Variable Specification

Institutional quality is measured by the World Bank Governance Indicators (WBI). The WBI are calculated as the sum of six single indicators as provided by the World Bank (Kaufmann et al., 2007). We argue that this is the most comprehensive measure of institutional development which is available for international comparisons. The WBI include indicators on voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Hence, the aggregate indicator integrates legislative, administrative and legal aspects as well as political and economic institutions (Schweickert 2004). At the same time, the calculation of the indices considers measurement errors and provides standardized measures. By using the WBI, we follow Beck and Laeven (2006) but we will consider a full model in terms of external and internal determinants of institutional change. In this respect, we modify and extend the framework of Di Tommaso, Raiser, and Weeks (2007). The fact that key variables are comparable allows us to compare our findings about institutional change to those in the earlier literature.

A variety of explanatory variables are employed not only in order to assess their coefficients but also to proxy for important and otherwise unobserved country characteristics as previously described. All explanatory variables and their data sources are listed in Table 3. The explanatory variables are grouped into external determinants of institutional development, internal economic determinants, and internal political determinants.

According to Section 2, integration into international organizations and proximity variables are included as external factors. Integration into the EU, NATO, and WTO is considered. For the EU we distinguish between various groups of countries (for details, see Table 1). The first group includes those countries with a membership perspective.<sup>7</sup> EU BASIC is a dummy variable which takes the value of one in a country for each year after a Stabilization and Association Agreement (SSA) has been signed or a Partnership and Cooperation Agreement (PCA) came into force. This definition resembles that by Di Tommaso, Raiser and Weeks (2007). Additionally, two dummy variables are used denoting all the years following a strong notice of membership and the begin of accession negotiations. Further steps of EU integration have to be seen as clearly endogenous since they are the outcome of Copenhagen convergence criteria. This is different in the context of NATO and WTO agreements. Two NATO variables are considered: a NATO MEMBER dummy indicating membership and a NATO MAP dummy variable indicating whether a Membership Action Plan (MAP) has been established for a country. A WTO dummy indicates WTO membership. Since offers of membership and preceding steps of integration into international organizations are often made conditional on the attainment of institutional standards, it can be expected that these variables exert an important positive influence on institutional quality. Additionally, they should have positive effects through peer pressure and by facilitating learning from best practice.

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<sup>7</sup> The countries not eligible for membership are Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Proximity is measured along several dimensions. These include cultural proximity, i.e. a WESTERN dummy indicating whether a country belongs to the western Christian community, and measures of economic proximity to the rest of the world in general and developed countries in particular. This is measured by three year moving averages of FDI and AID inflows as well as exports to non-transition countries. When interaction with developed countries generates institutional spillovers, we would expect that these variables capture them. AID and FDI have, a priori, more ambiguous effects as they represent resource inflows which might ease the need of institutional reform or give incentives for rent-seeking behavior.<sup>8</sup>

Internal economic determinants include indicators of economic policy as well as economic performance. In line with Di Tommaso, Raiser, and Weeks (2007) we measure economic policy using the LIBERALIZATION indicator provided by the EBRD. Di Tommaso et al. found a positive impact on an aggregated EBRD indicator on institutions and we expect a similar impact on a broader concept of institutions not constructed by the EBRD itself. Economic performance is measured by moving averages of GROWTH of real GDP and INFLATION. Growth should matter if demand for institutions increases with income and GROWTH. Inflation is taken as a proxy for macroeconomic stability in a country and thus reflects the window of opportunity for regime changes. Together with INITIAL INCOME, measured in par capita terms, inflation can also be expected to proxy for country effects.

Internal political factors are chosen to reflect both incentives for policy as well as initial conditions. Initial political conditions, as well as initial income, are important if institutional development is path dependent. In this case, they are important proxies for unobserved country effects. COHESION reflects whether the first post-communist government was relatively independent of the former communist party. INITIAL RIGHTS measures the initial individual political rights as measured by the Freedom House indicator. Additionally, TENSIONS is a dummy which measures whether the transition from communism involved conflicts.<sup>9</sup>

While the above variables refer mostly to opportunities to build good institutions, the incentives for agents to do so are also important. When the economy disposes of sizeable amounts of extractable resources, political agents might have incentives to build institutions in a way which facilitates the extraction of a rent from these resources for them instead of ensuring good governance. We model this by introducing a variable measuring ENDOWMENT as well as a variable measuring MINERAL EXPORTS.

We always allow for possible endogeneity of the following variables: NATO MAP, NATO MEMBER, and WTO, given that countries which have a low institutional quality are also less likely to become members of these institutions. GROWTH and INCOME INDEX are instrumented because it is a well established fact in the literature that institutional development affects economic growth positively, although one might doubt if this effect would show up at the short time horizon of this study. Since countries with especially good institutions might attract more FDI and more (or less) AID, also these variables are instrumented. LIBERALIZATION is treated as possibly endogenous, too, since policies and institutional reform might go hand in hand. We do not treat EU BASIC as endogenous. While

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<sup>8</sup> We do not consider geographical proximity, as reflected in the physical distance from the country's capital to Brussels because this variable is usually used as a catch-all for external influences which we model in detail. In the same vein, we did not include exports in the regressions which we present here because a potential impact of openness or trade liberalization is included by either cooperation or liberalization variables. A list of the robustness checks confirmed these arguments. A summary of these results is provided in Table 7.

<sup>9</sup> These initial political conditions may also be measured by a dummy variable which measures if the country participated in an intensive violent conflict in a given year.

this assumption can be maintained according to Hansen tests of overidentifying restrictions, nearly all results are robust to relaxing this assumption.

#### 4. Empirical Results

We start by discussing an extended model of institutional quality from which we then derive our preferred specification. This specification is then assessed in several robustness checks.

Estimates for the extended model are shown in Table 4. For all IV estimates in this table, as well as in all following IV estimates, lags of two and three years were used to instrument for endogenous variables. In columns (2) and (4) the p-value of the Hansen test statistic shows that the Null of exogeneity of the explanatory variables and the instruments can be maintained. Wald tests for all explanatory variables except the time dummies show in each case that the models have significant explanatory power. The R-squared statistics show a generally satisfactory fit of the different models. However, in case of the FE IV model, the partialling out of the time dummies causes the R-squared statistic not to be bounded by [0,1] any longer. While the explanatory power of the model is worse than in the standard FE model, it is positive and around 0.16 when the dummies are not partialled out.<sup>10</sup>

Given that the models pass necessary specification checks, it is sensible to assess whether the results are economically meaningful. Starting at the bottom of the table and focusing on the pooled estimates in columns (1) and (2), all political determinants have the expected sign, although INITIAL RIGHTS is not significant. An increase in MINERAL EXPORTS by one standard deviation causes WBGI to decline by roughly 0.77 to 0.91 points. An increase of one standard deviation in the share of non-communist parties in the first election significantly increases the WBGI by roughly 0.35 to 0.36 points.<sup>11</sup> The incidence of TENSIONS drastically decreases institutional quality. When controlling for fixed effects, MINERAL EXPORTS cease to have a significant effect.<sup>12</sup> All in all, the variables describing political determinants seem to succeed in accounting for significant variation in the institutional quality.

Focusing on the economic determinants, i.e. the rows from FDI to INITIAL INCOME, shows also economically sensible, but largely insignificant results. The effect of LIBERALIZATION is positive and significant in the estimates using pooled least squares, while one of the fixed effects estimates of its coefficient is insignificant. Otherwise only AID is significant and exerts a negative influence. However, this effect shows up only in the pooled estimates. When taking the negative sign literally, we would interpret this as tentative evidence that the negative incentives for political reform through development aid outweigh in our sample possible positive effects.

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<sup>10</sup> Notice that because of the large number of regressors, only heteroskedasticity robust standard errors are reported whereas subsequent estimates use clustered standard errors which allow for autocorrelation. Clustered standard errors could be reported for POLS and FE estimates, but for the sake of comparability with the IV estimates in both cases only heteroskedasticity robust standard errors are provided. Generally, one would expect the resulting standard errors to be excessively small and the t-statistics therefore to be excessively large. The Null of no significance would thus be rejected too frequently. Since the results in Table 4 are presented to select a reduced model, this bias seems acceptable.

<sup>11</sup> This corresponds to an elasticity of WBGI with respect to MINERAL EXPORTS of 1.57 to 1.86 and with respect to COHESION of roughly 0.08.

<sup>12</sup> However, this might be due to the lack of variation of resource exports within countries over time.

Two of the four external determinants show up as significant. EU BASIC and NATO MAP exert a positive influence of comparable size according to models (1) and (2): Countries which have the corresponding relationship with EU or NATO have a WBGI which is 1.4-1.9 points higher compared to otherwise identical countries without these relationships, roughly one third of a standard deviation of WBGI. The implication of these estimates is that international organizations like the NATO and the EU can exert a positive influence on institutional development when they establish tighter relationships with these countries. Introducing country fixed effects shows, however, that only the effect of NATO remains significant. Neither EU POTENTIAL nor WTO are significant.

For the following estimations, we drop all regressors that are always insignificant in Table 4. The resulting baseline estimates are shown in columns (1) and (2) as well as (7) and (8) of Table 5. For the sake of comparability with the earlier estimates and across all extensions, all estimation samples are restricted to the sample used in Table 4.<sup>13</sup>

As before, the estimates satisfy necessary specification tests, with the FE IV model passing the Hansen test of instrument validity by a wider margin than the pooled IV model. Also as before, the R-squared values for the FE IV are problematic because of the partialling out of the time dummies. All coefficient estimates are of similar magnitude and of the same sign as in the extended model, implying economically meaningful results. Now, however, LIBERALIZATION is also significant in the FE IV specification. The coefficient of LIBERALIZATION therefore suggests that an improvement in economic policies also has positive effects on a broader set of institutions. This effect is not only due to countries having better policies also having better institutions, i.e. unobserved heterogeneity, or better institutions causing better policies, i.e. endogeneity. The same holds true for NATO MAP, which is the only other variable which is significant across all specifications.

We then assess the robustness of these findings by modeling a range of extensions, basically testing variables which have been omitted in the baseline model one-by-one as well as testing cross terms involving AID and FDI.<sup>14</sup> However, most coefficients of additional variables are insignificant with few exceptions. Possibly, the negative impact of AID is more or less important in countries which already have another source of extractable income and thereby an incentive for rent-seeking behavior. The results in columns (3) to (6) in Table 5 suggest that ENDOWMENT has an effect very similar to that of the other variable measuring resource endowment. Additionally, the negative effect of the two types of extractable income seem to reinforce each other, as shown by the fact that the individual coefficients as well as the cross-term have a negative sign.

Another robustness check is the inclusion of additional variables describing the accession process. Looking at Table 1 reveals that NATO Membership Action Plans (MAP) were established roughly at the same time as many countries received the strong notice of membership by the EU and began accession negotiations, which can be expected to have given strong incentives for institutional reform. We test whether NATO has significant additional explanatory power by including two dummy variables for the additional steps of EU integration into the baseline model. Table 6 reveals that the results change little. LIBERALIZATION loses its significance in the FE IV specification, but is otherwise robust. Columns (5) and (6) as well as (11) and (12) indicate that EU BEGIN NEGOTIATIONS has the conjectured positive incentive effect, although it is not present in the FE IV specification. EU STRONG NOTICE has, counterintuitively, a negative sign or is insignificant. In all cases,

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<sup>13</sup> Table A1 compares the results for the baseline model with the restricted and the unrestricted sample.

<sup>14</sup> See Table 7 for a list of all specifications and additional variables.

however, NATO MAP remains highly significant with an effect of slightly lower magnitude than in the baseline model. EU BASIC only remains significant when not accounting for fixed effects.

We additionally test whether our measurement of the NATO variable might be flawed by including a variable measuring actual membership. Columns (3) and (4) as well as (9) and (10) give the results for the extension of the baseline model by NATO MEMBER. It shows that using IV estimators, NATO MEMBER actually performs better than NATO MAP, with the latter have a practically zero coefficient in the pooled IV specification. For pooled IV estimation, also EU BASIC becomes insignificant. In the case of FE IV, both NATO variables become insignificant. However, performing a Wald test on their joint significance clearly rejects the Null of no significance, especially for the FE IV specification.<sup>15</sup> Additionally, when we do not instrument NATO MAP both variables have positive coefficients but only NATO MAP is highly significant in all specifications (Table A2 in the appendix).<sup>16</sup> We offer the following interpretation of these results: The introduction of a MAP induces a dynamic process of institutional improvement which takes several years to completion. When NATO MEMBER is introduced additionally, this variable captures some of the dynamic improvements triggered by the MAP.

In addition, the effect of NATO MAP is robust in almost all models discussed so far and several other extensions summarized in Table 7. The Hansen test statistic allows to maintain the Null of instrument validity for all models reported in the table. Compared to the baseline estimates in row (1), in all but one of the 19 extensions the coefficient is robust across the four different estimators. The exception is the case of the inclusion of NATO MEMBER. Apart from possible problems of identifying causal effects of other variables due to unobserved heterogeneity across countries one reason for this robustness of NATO MAP might be that the incentives of increased regional and international security weigh more than the largely economic incentives offered by the EU.

Finally, the plausibility of the results is assessed by looking at the estimates of the baseline model when applied to the six disaggregated WBGI subindices. To economize on space, Table 8 shows only the IV estimates. The estimates show again evidence of significant path-dependency and the relevance of internal political factors for institutional development. Economic policy as measured by LIBERALIZATION is only significant for the subindex measuring regulatory quality in the pooled and the FE IV specification. AID is mostly insignificant and has a negative influence throughout. EU BASIC has a significant effect in all pooled IV estimates except for the subindex measuring governance effectiveness. It is insignificant once country fixed effects are included. NATO MAP performs generally well in both the pooled IV and FE IV specifications. However, for political stability and absence of violence as well as regulatory quality the coefficient is insignificant in the pooled IV model. For regulatory quality we are also unable to reject the Null that the model has no explanatory power. Taken together, these results are nevertheless plausible as the significant positive impact of NATO MAP on governance effectiveness, control of corruption, rule of law, and voice and accountability corresponds closely to the measure employed by the NATO for assessing prospective members.

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<sup>15</sup> The p-value in the case of pooled IV is 0.02 and in the case of FE IV 0.00.

<sup>16</sup> However, despite the statistical validity of the exogeneity assumption according to the Hansen test statistics, we do not believe this specification should be preferred. This is because it is unlikely that the NATO would not take current institutional quality into account when introducing MAP and a Hansen test has low power of accepting this alternative hypothesis of endogeneity.

## 5. Summary and Policy Conclusions

Focusing on a sample of 25 transition countries, this paper provides a comprehensive analysis of potential internal and external determinants of institutional change as measured by the World Bank Governance Indicators (WBI). While we are able to confirm results of the existing literature on a positive impact of EU agreements, we, additionally, show that integration into NATO is an important determinant of institutional development.

Integration into the EU clearly matters. As in Di Tommaso et al. (2007), basic relationships of a country with the EU improve its institutional quality beyond merely economic institutions. This result is, however, not robust to a control for country fixed effects. We find instead suggestive evidence, in line with Haughton (2007), that the begin of accession negotiations might have a stronger and more robust effect. Available natural resources and capital inflows are found to exert an insignificant or negative influence. We also find that country-fixed effects as well as variables characterizing initial (political) conditions matter for institutional development can be taken as evidence of path-dependency as in Beck and Laeven (2006). However, economic policy also matters, as shown by the relatively robust and positive influence of economic liberalization as measured by the EBRD index. Hence, in line with Havrylyshyn (2006), economic policies allow to break path-dependency even when focusing on a rather broad concept of institutional development.

The novel finding of this study is that also the perspective of NATO membership has influenced institutional development positively. Measuring this influence by the existence of a NATO Membership Action Plan for a country, we find strong evidence for this positive influence. Using different estimators which account for unobserved heterogeneity and endogeneity we find a sizeable positive and significant coefficient across many different model specifications. While, to our knowledge, this influence of the NATO has been neglected in the existing literature, we offer an explanation of this influence similar to that used in earlier papers for the EU membership perspective: Via one of its five criteria for membership, the NATO induces countries to commit to the rule of law and human rights, the democratic control of the armed forces, and to settle conflicts peacefully. It offers regional and international security in return and is therefore able to provide additional incentives beyond economic incentives supplied by the EU.

All in all, our results imply that internal and external actors can influence institutional development in transition countries positively. Internal actors can break path-dependencies through policy reforms, whereas both EU and NATO can have a positive impact through cooperation and membership agreements. This allows for some optimism about the effectiveness of ENP policies and supports the argument that NATO may provide significant additional incentives for good governance. Given the importance of regional security, the latter result may even figure more prominently in the future.

**Table 1: Integration of Transition Countries into EU, WTO, and NATO**

Group	Country	EU								WTO	NATO	
		Membership	Accession Negotiations End	Accession Negotiations Begin	Membership Strong Notice	EA / EAAP* / SAA Signed	ENPAP / 4CS / EA* Agreed	PCA / CA in Force	PCA / CA Signed	Membership	Membership	MAP
EU 2004	Czech Republic	2004	2002	1998	1997	1995	1991			1947	1999	1997
	Estonia	2004	2002	1998	1997	1995				1999	2004	1999
	Hungary	2004	2002	1998	1997	1995	1991			1973	1999	1997
	Latvia	2004	2002	2000	1997	1995				1999	2004	1999
	Lithuania	2004	2002	2000	1997	1995				2001	2004	1999
	Poland	2004	2002	1998	1997	1995	1991			1967	1999	1997
	Slovak Republic	2004	2002	2000	1997	1995	1991			1947	2004	1999
Slovenia	2004	2002	1998	1997	1996		1993	1993	1994	2004	1999	
EU 2007	Bulgaria	2007	2004	2000	1997	1995	1993			1996	2004	1999
	Romania	2007	2004	2000	1997	1995	1993			1971	2004	1999
Western Balkan	Albania			2005	2003	2006		1992	1992	2000		1999
	Croatia				2003	2001				2000		2002
	Macedonia				2003	2001		1998	1997	2003		1999
EU South East Neighbours	Moldova						2005	1998	1994	2001		
	Ukraine						2005	1998	1994	2008		
CIS Southern Caucasus	Armenia					2006	1999	1996		2003		
	Azerbaijan					2006	1999	1996				
	Georgia					2006	1999	1996		2000		
EU North East Neighbours	Russia					2003	1997	1994				
	Belarus						**	1995				
CIS Central Asia	Kazakhstan							1999	1995			
	Kyrgyz Republic							1999	1995	1998		
	Tajikistan							***	2004			
	Turkmenistan							****	1998			
	Uzbekistan							1999	1996			

**Definitions:** PCA - Partnership and Cooperation Agreement; CA - Cooperation Agreement; ENPAP - European Neighbourhood Policy Action Plan; 4CS - Four Common Spaces; EA - Europe Agreement; EAAP - Europe Agreement Additional Protocol; SAA - Stabilization and Association Agreement; Membership Strong Notice - the Luxembourg Summit of 1997 for Central and East European countries or the Thessaloniki Summit of 2003 for Western Balkans; MAP - Membership Action Plan.

**Notes:** \* European Agreements signed in 1991 with Poland, Hungary and CSFR did not involve any membership perspective and, therefore, could not be evaluated in the same way as European Agreements signed after 1993. European Agreements of 1991 were updated in 1995 with Europe Agreement Additional Protocol that includes membership perspective. — \*\* PCA was ratified by Belarus 04/05/1995, ratification not completed by EU. — \*\*\* PCA was Tajikistan 06/12/2005, ratification not completed by EU. — \*\*\*\* PCA was ratified by Turkmenistan 11/02/2004, ratification not completed by EU.

Sources: EU Agreements Database ([http://europa.eu/abc/history/1990-1999/index\\_en.htm](http://europa.eu/abc/history/1990-1999/index_en.htm); own summary); WTO ([http://www.wto.org/english/thewto\\_e/acc\\_e/completeacc\\_e.htm](http://www.wto.org/english/thewto_e/acc_e/completeacc_e.htm)); NATO ([www.nato.int](http://www.nato.int); <http://www.bits.de/frames/databasesd.htm>)



**Table 2: Variation of the explanatory variable in transition countries, 1996 – 2005**

	Variable	Countries	Mean	Std. Dev.	Min	Max
Transition countries	WBG I	175	- 1.25	4.63	-11.40	6.34
	Change in WBG I	25	0.61	2.05	- 3.04	4.70
Other countries	WBG I	1148	-0.01	5.75	-13.62	11.78
	Change in WBG I	127	-0.22	1.93	- 8.07	5.30

Note: For variable definitions compare Table 3. The mean of the “Change in WBG I” is significantly different from the mean for the other countries (the heteroskedasticity-robust p-value is 0.06). The Change in WBG I is calculated as the total change from 1996 to 2005.

**Transition probability matrix**

Quartile 1996	Quartile 2005			
	1	2	3	4
1	71.4	28.6	-	-
2	33.3	33.3	33.3	-
3	-	33.3	50.0	16.7
4	-	-	16.7	83.3

Note: The table is based on the WBG I variable (see Table 3). It gives the probability that a transition country which had a WBG I value in the respective quartile in 1996 moved to a different quartile in 2005.

**Table 3: Overview of variable specifications and data sources**

<b>Variable</b>	<b>Description</b>	<b>Source</b>
<b><i>Dependent Variable</i></b>		
WBG1	Sum of the the six WBG1 sub-indices (voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption)	WBG1; <a href="http://www.govindicators.org">http://www.govindicators.org</a>
<b><i>Explanatory Variables - External Factors</i></b>		
<b><i>Membership</i></b>		
EU BEGIN NEGOTIATIONS	Dummy variable equals 1 starting in the year accession negotiations with the EU began.	EU Agreement Database
EU BASIC	Dummy Variable, equals 1 for "potential members" if SAA ratified in the previous year or for other countries if PCA in force since previous year.	EU Agreement Database
EU POTENTIAL	Dummy variable, equals 1 for all countries except: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.	EU Agreement Database
EU STRONG NOTICE	Dummy variable equals 1 starting in the year in which the country received a strong notice of membership by the EU.	EU Agreement Database
NATO MAP	Dummy variable equals 1 starting in the year a membership action plan was established.	NATO; <a href="http://www.nato.int">www.nato.int</a> ; <a href="http://www.bits.de/frames/databasesd.htm">http://www.bits.de/frames/databasesd.htm</a>
NATO MEMBER	Dummy variable equals 1 starting in the year of NATO accession.	same
WTO	Dummy variable equals 1 for all years following WTO or GATT accession.	WTO; <a href="http://www.wto.org/english/thewto_e/acc_e/completeacc_e.htm">http://www.wto.org/english/thewto_e/acc_e/completeacc_e.htm</a>
<b><i>Economic Relations</i></b>		
FDI	Foreign Direct Investment, Net Inflows (Share of GDP), average over current and past two years.	WDI; <a href="http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&amp;userid=1&amp;queryId=136">http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&amp;userid=1&amp;queryId=136</a>
AID	Official Development Assistance and Official Aid (Share of GDP), average over current and past two years.	WDI
<b><i>Proximity</i></b>		
WESTERN	Dominance of protestant or catholic Christianity (=1, otherwise 0).	CIA World Factbook; <a href="https://www.cia.gov/library/publications/the-world-factbook/">https://www.cia.gov/library/publications/the-world-factbook/</a>
<b><i>Explanatory Variables - Economic Factors</i></b>		
<b><i>Economic Policy</i></b>		
LIBERALIZATION	Average of price liberalization and trade and foreign exchange liberalization. running from 1 to 4,66.	EBRD; <a href="http://www.ebrd.com/country/sector/econo/stats/tic.xls">http://www.ebrd.com/country/sector/econo/stats/tic.xls</a>
<b><i>Economic Performance</i></b>		
GROWTH	Growth GDP, geometric average over current and past two years.	WDI
INITIAL INCOME	GDP per capita at PPP	WDI
INFLATION	Inflation, consumer prices (annual %), geometric average over current and past two years.	WDI
<b><i>Explanatory Variables - Political Factors</i></b>		
<b><i>Opportunities</i></b>		
COHESION	(absolute value of largest non communist party vote) - (ex KP vote in first post-transition election).	EBRD Transition Report (1999)
INITIAL RIGHTS TENSIONS	individual political rights, measured from 7 to 1 (highest) Binary variable: conflict yes or not.	Freedom House Heidelberger Institut für Internationale Konfliktforschung; <a href="http://www.hiik.de/start/index.html">http://www.hiik.de/start/index.html</a>
<b><i>Incentives</i></b>		
ENDOWMENT	Resource reserves, dummy variable, rich=2, moderate=1, poor=0.	de Melo (2001); Auty (2006)
MINERAL EXPORTS	Weighted average of fuel exports and ores and metals exports (% of merchandise exports), 3 year moving average. The relative weight of ore and metal exports equals 2.75; a restriction which could not be rejected in F-tests in several models.	WDI

**Table 4: Determinants of Institutional Development in Transition Countries, 1996 – 2005**

	(1) POLS	(2) Pooled IV	(3) FE	(4) FE IV
EU BASIC	1.410 *** (4.74)	1.455 *** (4.33)	-0.173 (-0.51)	0.345 (0.56)
EU POTENTIAL	0.662 (1.26)	0.183 (0.26)		
NATO MAP	1.376 *** (4.01)	1.852 *** (2.69)	1.505 *** (5.75)	2.755 *** (3.81)
WTO	-0.005 (-0.01)	-0.919 (-1.40)	0.416 (1.34)	-0.968 (-1.16)
FDI	-0.003 (-0.21)	-0.008 (-0.38)	0.009 (0.65)	0.002 (0.09)
AID	-0.122 ** (-2.13)	-0.120 * (-1.90)	-0.132 (-1.28)	0.076 (0.33)
LIBERALIZATION	1.473 *** (3.74)	2.098 *** (3.19)	0.954 * (1.92)	2.433 (1.27)
GROWTH	0.058 (1.54)	0.050 (0.89)	0.029 (0.88)	0.022 (0.38)
INFLATION	0.409 (1.32)	0.539 (1.62)	0.066 (0.29)	0.197 (0.45)
INITIAL INCOME	-0.000 (-0.02)	0.000 (0.06)		
WESTERN	3.566 *** (9.00)	3.793 *** (9.09)		
TENSIONS	-2.007 *** (-8.31)	-2.157 *** (-8.25)		
INITIAL RIGHTS	-0.145 (-1.13)	-0.080 (-0.62)		
COHESION	0.008 *** (2.91)	0.007 *** (2.63)		
MINERAL EXPORTS	-0.058 *** (-4.91)	-0.069 *** (-4.90)	0.004 (0.17)	-0.000 (-0.01)
R-squared	0.96	0.95	0.48	-0.05
adjusted R-squared	0.95	0.94	0.41	-0.50
No. observations	123	123	123	123
Wald test, p-value	0.00	0.00	0.00	0.03
Time dummies	yes	yes	yes	yes
Hansen test, p-value	n/a	0.25	n/a	0.82

Note: Dependent variable: aggregate WBGI; for the definition of variables see Table 3. Heteroskedasticity robust t-statistics in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10.

**Table 5: Baseline model estimates and extensions involving aid and resource endowments, 1996 – 2005**

	(1) POLS	(2) Pooled IV	(3) POLS	(4) Pooled IV	(5) POLS	(6) Pooled IV
EU BASIC	1.301 *** (3.88)	1.268 *** (3.33)	1.450 *** (4.07)	1.522 *** (4.08)	1.336 *** (3.42)	1.423 *** (3.54)
NATO MAP	1.512 *** (5.27)	1.539 *** (3.21)	1.720 *** (5.45)	2.011 *** (3.97)	1.660 *** (5.32)	1.919 *** (3.73)
LIBERALIZATION	1.400 *** (5.67)	1.512 *** (3.67)	1.686 *** (5.73)	1.582 *** (3.30)	1.706 *** (5.90)	1.574 *** (3.22)
AID	-0.139 ** (-2.79)	-0.152 *** (-2.91)	-0.237 *** (-4.11)	-0.230 *** (-3.50)	-0.209 *** (-3.97)	-0.205 *** (-3.11)
WESTERN	4.091 *** (9.34)	3.995 *** (10.17)	3.912 *** (7.85)	3.823 *** (8.20)	3.981 *** (8.05)	3.900 *** (8.40)
TENSIONS	-2.023 *** (-9.01)	-1.981 *** (-8.82)	-1.228 ** (-2.53)	-1.230 *** (-2.62)	-1.219 ** (-2.24)	-1.221 ** (-2.41)
COHESION	0.008 ** (2.63)	0.008 *** (2.71)	0.004 (1.34)	0.005 (1.61)	0.006 ** (2.69)	0.006 *** (3.09)
MINERAL EXPORTS	-0.062 *** (-6.37)	-0.061 *** (-6.73)				
ENDOWMENT			-1.056 *** (-5.43)	-1.027 *** (-6.16)	-0.670 ** (-2.43)	-0.679 *** (-2.91)
ENDOWMENT x AID					-0.151 ** (-2.59)	-0.141 *** (-2.66)
R-squared	0.96	0.95	0.95	0.95	0.96	0.95
adjusted R-squared	0.95	0.95	0.95	0.94	0.95	0.95
No. observations	123	123	123	123	123	123
Wald test, p-value	0.00	0.00	0.00	0.00	0.00	0.00
Time dummies	yes	yes	yes	yes	yes	yes
Hansen test, p-value	n/a	0.27	n/a	0.25	n/a	0.15

  

	(7) FE	(8) FE IV	(9) FE	(10) FE IV	(11) FE	(12) FE IV
EU BASIC	0.012 (0.03)	0.196 (0.47)	-0.007 (-0.02)	0.258 (0.62)	0.020 (0.06)	0.303 (0.75)
NATO MAP	1.542 *** (5.24)	3.282 *** (3.92)	1.550 *** (5.35)	3.461 *** (3.77)	1.520 *** (5.51)	3.569 *** (4.00)
LIBERALIZATION	1.287 *** (3.31)	3.148 * (1.73)	1.269 *** (3.20)	3.157 * (1.90)	1.273 *** (3.02)	3.090 * (1.91)
AID	-0.109 (-0.88)	-0.133 (-0.54)	-0.111 (-0.88)	-0.194 (-0.65)	-0.089 (-0.70)	-0.215 (-0.76)
MINERAL EXPORTS	-0.004 (-0.23)	0.004 (0.14)				
ENDOWMENT x AID					-0.337 (-1.33)	-0.245 (-0.79)
R-squared	0.46	-0.11	0.46	-0.18	0.49	-0.21
adjusted R-squared	0.41	-0.51	0.42	-0.59	0.44	-0.65
No. observations	123	123	123	123	123	123
Wald test, p-value	0.00	0.02	0.00	0.03	0.00	0.03
Time dummies	yes	yes	yes	yes	yes	yes
Hansen test, p-value	n/a	0.66	n/a	0.71	n/a	0.70

Note: Dependent variable: aggregate WBGI; for the definition of variables see Table 3. Heteroskedasticity and autocorrelation robust t-statistics in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10.

**Table 6: Robustness of the baseline estimates with additional NATO and EU variables, 1996 – 2005**

	(1) POLS	(2) Pooled IV	(3) POLS	(4) Pooled IV	(5) POLS	(6) Pooled IV
EU BASIC	1.301 *** (3.88)	1.268 *** (3.33)	1.178 *** (3.95)	0.677 (1.34)	0.608 ** (2.39)	0.649 ** (2.38)
NATO MAP	1.512 *** (5.27)	1.539 *** (3.21)	1.331 *** (5.23)	0.032 (0.05)	0.946 *** (3.04)	1.195 ** (2.13)
LIBERALIZATION	1.400 *** (5.67)	1.512 *** (3.67)	1.449 *** (5.92)	2.281 *** (4.15)	1.424 *** (6.38)	1.493 *** (6.40)
AID	-0.139 ** (-2.79)	-0.152 *** (-2.91)	-0.138 ** (-2.82)	-0.219 *** (-3.87)	-0.110 ** (-2.68)	-0.120 *** (-3.64)
WESTERN	4.091 *** (9.34)	3.995 *** (10.17)	3.992 *** (8.70)	3.833 *** (8.46)	3.514 *** (11.92)	3.480 *** (13.08)
TENSIONS	-2.023 *** (-9.01)	-1.981 *** (-8.82)	-2.052 *** (-8.57)	-2.013 *** (-7.86)	-1.658 *** (-8.41)	-1.672 *** (-7.82)
COHESION	0.008 ** (2.63)	0.008 *** (2.71)	0.008 ** (2.65)	0.007 ** (2.26)	0.009 *** (3.16)	0.009 *** (3.29)
MINERAL EXPORTS	-0.062 *** (-6.37)	-0.061 *** (-6.73)	-0.061 *** (-6.27)	-0.071 *** (-5.82)	-0.053 *** (-5.51)	-0.053 *** (-6.53)
NATO MEMBER			0.590 * (1.86)	1.066 ** (2.36)		
EU BEGIN NEGOTIATIONS					1.854 *** (6.03)	1.790 *** (5.46)
EU STRONG NOTICE					-0.192 (-0.75)	-0.367 (-1.16)
R-squared	0.96	0.95	0.96	0.95	0.97	0.97
adjusted R-squared	0.95	0.95	0.95	0.94	0.96	0.96
No. observations	123	123	123	123	123	123
Wald test, p-value	0.00	0.00	0.00	0.00	0.00	0.00
Time dummies	yes	yes	yes	yes	yes	yes
Hansen test, p-value	n/a	0.27	n/a	0.39	n/a	0.33

  

	(7) FE	(8) FE IV	(9) FE	(10) FE IV	(11) FE	(12) FE IV
EU BASIC	0.012 (0.03)	0.196 (0.47)	0.129 (0.35)	0.250 (0.39)	0.042 (0.13)	0.010 (0.03)
NATO MAP	1.542 *** (5.24)	3.282 *** (3.92)	1.489 *** (5.42)	1.342 (0.98)	1.315 *** (4.76)	2.568 *** (5.11)
LIBERALIZATION	1.287 *** (3.31)	3.148 * (1.73)	1.541 *** (3.51)	2.541 (0.86)	1.568 *** (4.04)	1.590 (1.15)
AID	-0.109 (-0.88)	-0.133 (-0.54)	-0.114 (-0.95)	-0.035 (-0.13)	-0.086 (-0.70)	0.112 (0.59)
MINERAL EXPORTS	-0.004 (-0.23)	0.004 (0.14)	-0.006 (-0.34)	-0.020 (-0.43)	-0.020 (-1.25)	-0.016 (-0.82)
NATO MEMBER			0.448 ** (2.23)	0.753 (0.73)		
EU BEGIN NEGOTIATIONS					1.038 *** (3.35)	0.472 (1.14)
EU STRONG NOTICE					-0.549 *** (-3.11)	-1.072 *** (-3.97)
R-squared	0.46	-0.11	0.48	0.30	0.53	0.18
adjusted R-squared	0.41	-0.51	0.42	0.03	0.47	-0.15
No. observations	123	123	123	123	123	123
Wald test, p-value	0.00	0.02	0.00	0.00	0.00	0.00
Time dummies	yes	yes	yes	yes	yes	yes
Hansen test, p-value	n/a	0.66	n/a	0.17	n/a	0.37

Note: Dependent variable: aggregate WBGI; for the definition of variables see Table 3. Heteroskedasticity and autocorrelation robust t-statistics in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10.

**Table 7: Summary of robustness checks for the impact of NATO MAP on institutional development – variables added to baseline model, 1996 – 2005**

Model	POLS	Pooled_IV	#Obs	Hansen	FE	IV_FE	#Obs	Hansen
(1) Baseline	1.51 *** (0.00)	1.54 *** (0.00)	123	3.93 (0.27)	1.54 *** (0.00)	3.28 *** (0.00)	123	1.59 (0.66)
(2) add NATO MEMBER	1.33 *** (0.00)	0.03 (0.96)	123	3.03 (0.39)	1.49 *** (0.00)	1.34 (0.33)	123	4.97 (0.17)
(3) add BEGIN NEGOTIATIONS, STRONG NOTICE	0.95 *** (0.01)	1.20 ** (0.03)	123	3.47 (0.33)	1.31 *** (0.00)	2.57 *** (0.00)	123	3.14 (0.37)
(4) add GROWTH	1.57 *** (0.00)	1.70 *** (0.00)	123	4.47 (0.35)	1.57 *** (0.00)	2.72 *** (0.00)	123	2.68 (0.61)
(5) add INCOME INDEX	1.28 *** (0.00)	1.48 *** (0.00)	123	5.93 (0.20)	1.43 *** (0.00)	2.48 *** (0.00)	123	0.35 (0.99)
(6) add INFLATION	1.50 *** (0.00)	1.47 *** (0.00)	123	3.91 (0.27)	1.55 *** (0.00)	3.34 *** (0.00)	123	0.97 (0.81)
(7) add ENDOWMENT for MINERAL EXPORTS	1.72 *** (0.00)	2.01 *** (0.00)	123	4.08 (0.25)	1.55 *** (0.00)	3.46 *** (0.00)	123	1.39 (0.71)
(8) add EXPORTS	1.29 *** (0.00)	1.58 *** (0.00)	120	6.87 (0.14)	1.59 *** (0.00)	2.92 *** (0.00)	120	2.25 (0.69)
(9) add DISTANCE	1.66 *** (0.00)	1.91 *** (0.00)	123	3.27 (0.35)	1.54 *** (0.00)	3.28 *** (0.00)	123	1.59 (0.66)
(10) add WARYEAR	1.51 *** (0.00)	1.54 *** (0.00)	123	3.82 (0.28)	1.54 *** (0.00)	3.09 *** (0.00)	123	1.32 (0.72)
(11) add FDI, FUEL EXPORTS, and cross term	1.70 *** (0.00)	1.81 *** (0.00)	123	4.94 (0.29)	1.47 *** (0.00)	3.66 *** (0.00)	123	2.65 (0.62)
(12) add FDI, MINERAL EXPORTS, and cross term	1.44 *** (0.00)	1.31 ** (0.04)	123	3.81 (0.43)	1.50 *** (0.00)	3.44 *** (0.00)	123	2.45 (0.65)
(13) add FDI, ENDOWMENT, and cross term	1.66 *** (0.00)	1.88 *** (0.00)	123	5.42 (0.25)	1.52 *** (0.00)	3.73 *** (0.01)	123	1.85 (0.76)
(14) add FDI, and TENSIONS cross term	1.52 *** (0.00)	1.48 *** (0.01)	123	3.82 (0.43)	1.52 *** (0.00)	3.63 *** (0.01)	123	2.21 (0.70)
(15) add FDI, INCOME INDEX, and cross term	1.27 *** (0.00)	1.59 *** (0.00)	123	6.39 (0.27)	1.44 *** (0.00)	2.56 *** (0.00)	123	1.81 (0.87)
(16) add AID, FUEL EXPORTS, and cross term	1.70 *** (0.00)	1.81 *** (0.00)	123	4.03 (0.26)	1.47 *** (0.00)	3.46 *** (0.00)	123	1.44 (0.70)
(17) add AID, MINERAL EXPORTS, and cross term	1.51 *** (0.00)	1.56 *** (0.00)	123	3.88 (0.27)	1.54 *** (0.00)	3.23 *** (0.00)	123	1.59 (0.66)
(18) add AID, ENDOWMENT, and cross term	1.66 *** (0.00)	1.92 *** (0.00)	123	5.35 (0.15)	1.52 *** (0.00)	3.57 *** (0.00)	123	1.41 (0.70)
(19) add AID, and TENSIONS cross term	1.48 *** (0.00)	1.62 *** (0.00)	123	3.64 (0.30)	1.49 *** (0.00)	3.60 *** (0.00)	123	0.33 (0.95)
(20) add AID, INCOME INDEX, and cross term	1.27 *** (0.00)	1.58 *** (0.00)	123	5.95 (0.20)	1.43 *** (0.00)	2.49 *** (0.00)	123	0.41 (0.98)

Note: Dependent variable: aggregate WBGI; INCOME INDEX is defined as GDP per capita scaled by INITIAL INCOME. FUEL EXPORTS is one component of MINERAL EXPORTS. DISTANCE is the physical distance between the capital and Brussels. EXPORTS are the three year average of exports to non-transition countries. WARYEARS is a dummy for years with an intensive violent conflict. For the definition of other variables see Table 2. Heteroskedasticity and autocorrelation robust p-values in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

**Table 8: Estimates of the baseline model for the disaggregated WBGI indices, 1996 – 2005**

	<b>Control of corruption</b>		<b>Governance effectiveness</b>		<b>Political stability &amp; absence of violence</b>		<b>Regulatory quality</b>		<b>Rule of Law</b>		<b>Voice and accountability</b>	
	(1) Pooled IV	(2) FE IV	(3) Pooled IV	(4) FE IV	(5) Pooled IV	(6) FE IV	(7) Pooled IV	(8) FE IV	(9) Pooled IV	(10) FE IV	(11) Pooled IV	(12) FE IV
EU BASIC	0.141 *	0.062	0.148	0.026	0.228 **	-0.107	0.248 **	0.187	0.253 ***	-0.016	0.250 ***	0.044
	(1.92 )	(0.78 )	(1.57 )	(0.30 )	(2.40 )	(-0.58 )	(2.03 )	(1.08 )	(3.12 )	(-0.32 )	(2.94 )	(0.43 )
NATO MAP	0.225 *	0.573 ***	0.364 ***	0.531 ***	-0.118	0.625 *	0.227	0.551 *	0.269 **	0.341 ***	0.571 ***	0.660 ***
	(1.83 )	(4.14 )	(3.28 )	(2.86 )	(-0.69 )	(1.83 )	(1.29 )	(1.74 )	(2.26 )	(2.90 )	(5.04 )	(4.11 )
LIBERALIZATION	-0.025	0.506	0.129	0.516	-0.084	0.138	0.757 ***	1.542 *	0.162 **	0.279	0.573 ***	0.168
	(-0.17 )	(1.26 )	(1.28 )	(1.26 )	(-0.49 )	(0.24 )	(4.54 )	(1.83 )	(2.13 )	(1.55 )	(6.24 )	(0.54 )
AID	-0.006	-0.035	-0.001	-0.008	-0.050 **	0.054	-0.027	-0.065	-0.015	-0.026	-0.053 ***	-0.053
	(-0.37 )	(-0.69 )	(-0.09 )	(-0.13 )	(-2.31 )	(0.75 )	(-1.41 )	(-0.67 )	(-1.42 )	(-0.82 )	(-6.65 )	(-1.16 )
WESTERN	0.801 ***		0.857 ***		0.837 ***		0.570 ***		0.661 ***		0.270 ***	
	(6.13 )		(11.75 )		(4.85 )		(3.97 )		(6.62 )		(3.36 )	
TENSIONS	-0.388 ***		-0.204 **		-0.601 ***		-0.286 **		-0.342 ***		-0.160 *	
	(-3.13 )		(-2.49 )		(-3.37 )		(-2.32 )		(-3.73 )		(-1.71 )	
COHESION	0.001 **		0.002 ***		-0.001		0.002 *		0.001 **		0.002 ***	
	(2.38 )		(3.93 )		(-0.42 )		(1.85 )		(2.53 )		(4.01 )	
MINERAL EXPORTS	-0.011 ***	-0.003	-0.002	-0.004	-0.020 ***	-0.005	-0.004	0.006	-0.011 ***	0.001	-0.013 ***	0.009 *
	(-3.37 )	(-0.42 )	(-0.92 )	(-0.48 )	(-4.27 )	(-0.55 )	(-1.16 )	(0.67 )	(-4.26 )	(0.30 )	(-4.43 )	(1.74 )
R-squared	0.90	-0.05	0.92	0.02	0.79	0.05	0.88	-0.38	0.93	0.18	0.93	-0.37
adjusted R-squared	0.88	-0.43	0.91	-0.34	0.76	-0.30	0.87	-0.89	0.92	-0.12	0.93	-0.88
No. observations	123	123	123	123	123	123	123	123	123	123	123	123
Wald test, p-value	0.00	0.01	0.00	0.09	0.00	0.05	0.00	0.45	0.00	0.09	0.00	0.00
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Hansen test, p-value	0.46	0.80	0.91	0.55	0.27	0.16	0.54	0.40	0.45	0.997	0.39	0.69

Note: For the definition of variables see Table 3. Heteroskedasticity and autocorrelation robust t-statistics in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10.

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**Table A1: Sample size effects in the baseline model**

	(1) POLS	(2) Pooled IV	(3) POLS	(4) Pooled IV
EU BASIC	1.301 *** (5.24)	1.268 *** (4.34)	1.269 *** (5.48)	1.360 *** (4.99)
NATO MAP	1.512 *** (5.90)	1.539 *** (3.30)	1.680 *** (6.63)	1.838 *** (4.03)
LIBERALIZATION	1.400 *** (6.29)	1.512 *** (4.15)	1.244 *** (6.57)	1.057 *** (2.65)
AID	-0.139 *** (-3.08)	-0.152 *** (-3.27)	-0.100 *** (-2.65)	-0.043 (-0.61)
WESTERN	4.091 *** (12.89)	3.995 *** (13.76)	4.332 *** (14.14)	4.556 *** (12.20)
TENSIONS	-2.023 *** (-10.79)	-1.981 *** (-10.58)	-1.921 *** (-9.35)	-2.056 *** (-8.23)
COHESION	0.008 *** (3.34)	0.008 *** (3.36)	0.007 *** (3.14)	0.007 *** (3.15)
MINERAL EXPORTS	-0.062 *** (-8.62)	-0.061 *** (-8.11)	-0.053 *** (-5.82)	-0.052 *** (-6.34)
R-squared	0.96	0.95	0.95	0.95
adjusted R-squared	0.95	0.95	0.95	0.94
No. observations	123	123	135	135
Wald test, p-value	0.00	0.00	0.00	0.00
Time dummies	yes	yes	yes	yes
Hansen test, p-value	n/a	0.14	n/a	0.19

  

	(5) FE	(6) FE IV	(7) FE	(8) FE IV
EU BASIC	0.012 (0.04)	0.196 (0.46)	0.398 (1.45)	0.802 (1.20)
NATO MAP	1.542 *** (5.82)	3.282 *** (4.01)	1.442 *** (5.88)	1.964 * (1.74)
LIBERALIZATION	1.287 *** (3.07)	3.148 * (1.70)	0.533 (1.51)	2.876 (1.14)
AID	-0.109 (-1.14)	-0.133 (-0.58)	-0.111 (-1.17)	0.307 (0.94)
MINERAL EXPORTS	-0.004 (-0.20)	0.004 (0.15)	0.014 (0.54)	-0.011 (-0.28)
R-squared	0.46	-0.11	0.39	-0.27
adjusted R-squared	0.41	-0.51	0.33	-0.70
No. observations	123	123	135	134
Wald test, p-value	0.00	0.01	0.00	0.07
Time dummies	yes	yes	yes	yes
Hansen test, p-value	n/a	0.66	n/a	0.77

Note: Dependent variable: aggregate WBGI; for the definition of variables see Table 3. Heteroskedasticity and autocorrelation robust t-statistics in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10.

**Table A2: Robustness Check of NATO impact with exogenous NATO MAP, 1996 – 2005**

	(1) POLS	(2) Pooled IV	(3) FE	(4) FE IV
EU BASIC	1.178 *** (3.95)	1.139 *** (3.58)	0.129 (0.35)	1.422 (1.40)
NATO MAP	1.331 *** (5.23)	1.299 *** (5.15)	1.489 *** (5.42)	1.263 *** (4.09)
LIBERALIZATION	1.449 *** (5.92)	1.627 *** (5.00)	1.541 *** (3.51)	6.682 (1.64)
AID	-0.138 ** (-2.82)	-0.162 *** (-3.49)	-0.114 (-0.95)	-0.213 (-0.77)
WESTERN	3.992 *** (8.70)	3.905 *** (9.26)	0.000	
TENSIONS	-2.052 *** (-8.57)	-1.991 *** (-8.15)		
COHESION	0.008 ** (2.65)	0.008 *** (2.68)		
MINERAL EXPORTS	-0.061 *** (-6.27)	-0.062 *** (-7.02)	-0.006 (-0.34)	-0.045 (-1.12)
NATO MEMBER	0.590 * (1.86)	0.428 (0.73)	0.448 ** (2.23)	4.550 (1.47)
R-squared	0.96	0.96	0.48	-1.45
adjusted R-squared	0.95	0.95	0.42	-2.39
No. observations	123	123	123	123
Wald test, p-value	0.00	0.00	0.00	0.00
Time dummies	yes	yes	yes	yes
Hansen test, p-value	n/a	0.57	n/a	0.70

Note: Dependent variable: aggregate WBGI; for the definition of variables see Table 3. Heteroskedasticity and autocorrelation robust t-statistics in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .