When formal institutions fail in fostering economic growth: the case of post-communist countries

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Abstract:

The article explains the peculiarities of institutional effects on growth rates in post-communist countries. By proposing a certain dependence of the institution-growth nexus on the nature of institutional emergence, the distinction between revolutionary and evolutionary processes of institution formation is introduced. Theoretical and empirical juxtapositions are used to demonstrate that transition countries' institutions that are constructed revolutionarily differ from those that emerge evolutionarily in a twofold manner in their relationship to growth. Growth rates of their economies are less likely to depend on the quality of economic institutions and are more likely to be a function of the maturity of political institutions. In addition, economic institutions in post-communist countries prove to be a product of the quality of political bodies to a greater extent than their evolutionary alternatives.

Keywords: economic growth, formal institutions, institutional formation, institutional change, post-communist countries

JEL classification: O17, O43, O57, P26, P37

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1. Introduction

The collapse of socialism led to multifaceted and profound changes in the political, economic, and social systems of post-socialist countries. Formal institutions were expected to mold these changes into a legal framework and define new rules according to which the economy and society were supposed to operate. The introduction of free market formal institutions did not lead, however, to the expected outcomes in most transition economies. The well-functioning institutions of capitalism, which according to growth theory are the foundation of economic development (Assane and Grammy, 2003; Beck and Laeven, 2006; Lane and Rohner, 2004; Siddiqui and Masood, 2009), proved rather dysfunctional in post-communist conditions (Lenchuk, 2008; Polterovich, 2005, 2008; Radygin and Entov, 2008). The relationship between the quality of formal institutions and rates of growth in transition economies was recognized as peculiar, differing from the pattern usually found in developed and/or developing countries.

The main objective of this study is to demonstrate that the revolutionary approach which led to the formation of key economic institutions could be the main reason for the relative dysfunctionality and inefficiency of formal institutions in ensuring rapid and sustainable economic growth in post-communist countries. The rationale behind our argument is that revolutionary institutional formation occurred independently from the culture prevalent among economic agents, as well as trends in economic structural transformations, resulting in institutions incompatible with prevalent informal norms and features of local economic systems.

2. Literature overview

Growth theory asserts that good formal institutions are conducive to rapid economic development. Empirical evidence from economically developed and/or developing countries (Eicher and Leukert, 2009) largely supports this statement (Assane and Grammy, 2003; Baum and Lake, 2003; Knack and Keefer, 1995; Mulligan and Sala-i-Martin, 2003; Tavares and Wacziarg, 2001) with regard to both political (Chen and Feng, 1996; Klomp and de Haan, 2009; Narayan *et al*., 2011) and economic institutions (Rodrik *et al*., 2002). The post-communist countries are rarely included in this analysis because they represent a particularly unusual group (Bosworth and Collins, 2003).

Transition economies are nonetheless addressed independently by research that is usually consistent with conventional findings about the positive effects of institutions on growth rates (Beck and Laeven, 2006; Berglof, 2008; Crafts and Kaiser, 2004; Dreher *et al*., 2007; Eicher and Schreiber, 2010; Redek and Susjan, 2005; Sachs, 2001). However, the majority of these studies utilize a very narrow definition of institutions which results in limiting their operationalization to either political quality, such as democracy (Grogan and Moers, 2001), or levels of economic freedom, such as liberalization (Falcetti *et al*., 2006). Formal institutions designed to regulate an economic agent's decision-making, such as property rights or contract enforcement legislation, remain largely beyond the scope of analysis.

The gap is filled by Eastern European scholars who usually come to the opposite conclusion. Contrary to the conventional belief, they assert that the existence of formal economic institutions per se rarely leads to economic prosperity in the former socialist economies (Mau, 2007; Petrunya and Ivashina, 2010; Polischuk, 2008; Polterovich, 2008) since they often lack compatibility with post-communist economic systems (Lenchuk, 2008; Polterovich, 2005; Polterovich and Popov, 2006) or prevalent informal norms (Kantzurov, 2011; Yasin, 2003). In addition, the lack of strong political contexts is believed to restrain these countries from

further improving their formal institutions, and as a result, institutional reforms usually end up promoting only the redistribution of economic or political power without entraining any substantial change in economic growth (Dementiev and Vishnevskiy, 2011). As a consequence, many transition economies appear to be locked in an institutional trap (Polterovich, 2005), with any improvement in institutions being associated only with considerable economic and social losses (Polterovich, 2008).

The Eastern European approach to interpreting the relationship between formal institutions and growth as negative is, nonetheless, rarely tested in conjunction with other countries. There appear to be no empirical studies that directly juxtapose institutional effects in transition economies and developed and/or developing countries. An indirect comparison of results is, by contrast, hardly possible since studies do not use a standard set of conditioning variables and standard periods which would ensure comparability of findings.

In general, growth theory recognizes the existence of heterogeneity in the effects of formal institutions. It is well-established that the direction and strength of institutional effects on growth may vary depending on the level of maturity of formal institutions (Barro, 1997; Fidrmuc and Tichit 2007, Przeworski and Limongi, 1993) or a country's level of economic prosperity (Basu, 2008; Eicher and Leukert, 2009; Lee and Kim, 2009). We would question, however, the idea that the two explanations are exhaustive for the post-communist countries. They started their institutional reforms from a relatively similar platform in terms of the level of their economic development and the type and degree of institutional maturity, but ended up at very different levels of success. Instead, we argue that the cross-country variation of institutional effects on economic growth can also be attributed to the way in which such institutions were formed. The peculiar relationship of economic institutions to growth rates in transition economies can be explained by the revolutionary nature of their institution building and socio-economic forces resulting from this process.

The latter proposition requires that a theoretical model should be constructed to juxtapose the post-communist pattern of institution building with that prevalent in other countries to identify possible implications that this type of institutional formation may have for a country's growth dynamics.

3. Theoretical model

Institutional theory distinguishes between two major means of institutional formation: evolutionary and revolutionary (Matthews, 1995; North, 1990; Poznanski, 1995). We use Portes's sociological model of institution building (2006) for this distinction. According to this conceptual framework, institutional grafting is subject to the influence of a dual set of forces. On the one hand, there is culture which consists of moral values and norms that in turn manifest themselves in certain role expectations regarding the conduct of economic agents or representatives of authority. On the other hand, there is social structure that includes power and elites (who control that power) who are embedded within a certain class structure with a clearly specified status hierarchy. The theory asserts that, institutions, regardless of the means of their formation, are expected to be compatible with both culture and social structure in order for institutional creation to be successful. If institutions are deliberately created and hence stem from culture, dominant classes and political elites need to be persuaded or compelled to legalize them. If imposed by political elites, institutional change must presuppose an alteration of the underlying values, which can enable their acceptance by culture.

We expand this approach by arguing that successful institutional formation or transformation is embedded within a three-dimensional structure which, if not complied with, may potentially create three forces of opposition to institutional change. The first dimension is derived from culture (Portes, 2006) and is called "values structure." It includes prevalent

moral values/norms that dictate right and wrong, as well as moral behavior describing how likely it is that an individual's conduct deviates from their good morals. The second dimension is social structure, in which we follow Portes (2006) and distinguish between political elites who deal with formalizing institutions, and class structure that predefines the potential level of deliberate resistance to institutional change on the part of the population. The third dimension is economic structure which describes the rationale behind, and nature of, economic arrangements and economic infrastructure in a country. It predefines the extent to which a country's economic system and economic processes embedded within the system are in tune with the logic of formal institutions. Institutional formation processes are therefore expected to be successful if there is sufficient compatibility between them and the three dimensions described above: moral structure, social structure, and economic structure. An illustration of this logic is presented in Figure 1.

Figure 1 here

If analyzed within this theoretical framework, the logic of the evolutionary approach can be described as in Figure 2. As economic agents operate, they accumulate knowledge and experiences which lead to changes in technologies and further promote the division of labor (Davis, 2010). This changes the organization of production processes in a country and, hence, leads to alterations in economic structures.

Profound change in the economic domain leads to alterations in the way economic agents think, as well as their values structure. The existing formal institutions become no longer adequate and commensurate with both economic structures (i.e. prevalent technologies, economic process) and the preferences of economic agents, thereby raising market transaction costs (North, 1990). Contractual arrangements begin to create demand for institutional change that can lower the transaction costs of exploiting new opportunities (Pejovich, 1999).

Figure 2 here

In trying to bypass the existent inconsistencies, economic agents start introducing informal changes (Eggertsson, 1997) in formal "rules of the game," thereby making the institutional framework more flexible. If efficient and compatible with the interests of political elites (Portes, 2006), these changes are captured by the political system which takes on the function of formalizing and legalizing them, as a result of which they acquire the status of formal institutions. A clear-cut example of the evolutionary institutional formation is the institutional evolution of early modern Europe.

The logic of institutional evolution hence entails the following: First, the formation process is initiated by economic agents and, therefore, new institutions are highly likely to be consistent with their values structure. Second, formal institutions are fully compatible with the economic structures in force, since any change in old institutions largely occurs as a reaction to changes in economic systems or technologies. Third, the role of political elites in institution creation is relatively inferior and restricted to a formalization of institutions that previously emerged at the micro-level. The flexibility of political bodies, however, predetermines how rapidly new institutions that meet such demand are adopted (Davis, 2010).

The distinct feature of the revolutionary approach to institutional formation shared by post-communist economies is that change in their political systems triggered and enforced by political elites preceded change in their economic systems (Fidrmuc, 2003). Such radical political alterations necessitate an adjustment of institutional framework to the new political logic and hence promote an immediate introduction of an entirely new set of economic institutions, commensurate with the logic of new political principles (see Figure 3). Usually, such reforms do not require broad support by the population, while the resistance of middle and lower classes is blocked. The economic crisis caused by shortcomings and imperfections

of the previous regime serves as a justification for the introduction of essential changes in both political and economic systems. The lack of internalized tradition to organize themselves into a collective resistance and control of the army by the political elite may also contribute to suppressing resistance of the population to profound reforms.

Figure 3 here

In any case, the support of a country's institutional reforms by the population does not predetermine the success of such reforms since political elites and public and private actors usually have limited knowledge of how the new economic system should function. Because of this, the process of building new formal institutions is largely limited to borrowing institutions from countries with similar political rules and implanting them into the specific local context. The formal rules are therefore imposed from without (Pejovich, 1999), which is believed to lead to the emergence of two kinds of problems.

On the one hand, the implantation of foreign institutions into the specific local context often lacks an appropriate analysis of their compatibility with characteristics of local economic structures. When copying Western industrial legislation designed for postindustrial societies with a prevalence of medium and small businesses, many CIS governments did not, for instance, take into account that their economies are still characterized by the overrepresentation of large enterprises (Polterovich and Popov, 2006), which made new rules *a priori* suboptimal for the existing economic systems. Reforms aimed at enforcing changes in economic structures and hence narrowing the differences between the recipient- and source-countries of formal institutions become necessary, but in practice are often left to random forces with institutional change expected to generate the required structural change (Eggertsson, 1997).

On the other hand, a similar inconsistency is also believed to emerge between new formal institutions and values structures (Kyriazis and Zouboulakis, 2005; Portes, 2006; Prado and

Trebilcock, 2009) since transition countries are highly likely to possess their own mentality, behavioral patterns, and business cultures (Balabanova, 2002; Matveenko, 2005). As a consequence, their economic agents often perceive and interpret the newly imported formal institutions in a way that is absolutely different from their initial context, which results in a mutation of such institutions (Vernikov, 2009) or low levels of their enforcement.

The learning experience is expected to minimize or fully eliminate both kinds of inconsistencies (Nelson and Sampat, 2001). If policymakers design and introduce adjustment policies for the orderly operation of the system at each stage during the transition period, the inconsistency between new formal institutions and economic structures is believed to be narrowed gradually. Similarly, if economic actors learn that acting according to new formal institutions can expand their opportunity set, they may change their moral values and moral behavior. The existence of learning processes imply, however, that there will be lengthy lags between the initiation of fundamental institutional change and the time when the relevant actors get the structures right (Eggertsson, 1997).

Overall, one ascribes the following features to the revolutionary method of institution formation: First, the formation of institutions is initiated by political elites and hence it is highly likely that these institutions will be incompatible with values structures in force, at least at the initial stage of institutional reforms. Second, inconsistencies may also appear between formal institutions and the current economic structures. Third, the role of political elites is superior and cannot be confined to legalizing new institutions, but extends itself to their selection, design, introduction, and subsequent adjustment to values and economic structures in place.

The driving forces of institutional change and the extent to which the entire institutional framework is subjected to change in the short-run, therefore, constitute the main criteria for distinguishing between evolutionary and revolutionary means of institution formation. In the

case of the evolutionary pattern, change in technologies and economic processes necessitates institutional reforms which usually embrace only a few institutional elements in the existing institutional framework. By contrast, the revolutionary institutional reforms are triggered by changes in the political domain and usually include reforming the entire set of institutions in the existing institutional framework.

It is also possible that institutional evolution borrows methods of the revolutionary approach, in which policymakers intervene in the formation of institutions directly, by introducing rules of the game foreign to the system. Such changes can however concern only a few institutional elements so that the total institutional change is relatively small and cannot cause the emergence of inconsistencies between institutions, moral codes, and economic structures. The opening of previously closed professions in Greece, which required only certain adjustments in the competition law, is a good illustration of this case. Profound institutional change can also happen, but it remains gradual and incremental in nature, with substantial alterations in formal institutions or in the entire institutional framework occurring relatively slowly (Efendic *et al*., 2011), giving enough time for values and economic structures to co-evolve with institutions and adjust themselves to new rules.

In sum, institutional change is an evolutionary one when new institutions emerge as a result of interactions between values and economic structures. If institutional transformations are imposed by political elites, the pattern remains evolutionary in nature so long as only a few institutional elements are subjected to radical or substantial alterations, and the logic of the whole institutional framework is retained unchanged. The pattern turns into a revolutionary one if alterations are imposed by political elites and extended to a simultaneous transformation of all elements of the institutional framework. The transition from socialism to capitalism experienced by post-communist countries should be considered a good example for the revolutionary process of institution building.

Understanding the main differences between evolutionary and revolutionary patterns of institutional formation allows us to formulate four propositions for growth theory.

Proposition 1: Economic institutions that emerged in a revolutionary way might be less effective for economic development than those formed by alternative means, since they are less compatible with features of local economic structures and cultures at least in the short run.

Proposition 2: Since fundamental institutional change involves a learning process for both political elites and economic agents, there will be lengthy lags between the initiation of fundamental institutional change and the time when the right institutional frameworks emerge. Political elites need some time to experiment and learn how to design and operate new formal institutions. Economic agents in turn need to learn how to act according to the new rules. Common sense also suggests that learning processes might be non-linear and hence as institutional elements approach optimal design, they must induce a better learning process.

Proposition 3: Since the revolutionary means of institution formation presupposes radical change in the set of institutions, economic development becomes a function of the ability of political elites to ensure a smooth transition to new institutions, and if necessary, to introduce measures aimed at tailoring and adjusting economic structures and/or values structures to the new rules of the game. By contrast, the evolutionary pathway is mainly characterized by the introduction of insignificant cumulative changes into existing institutions which seldom require such adaptation measures or coordinating actions on the part of the government.

Proposition 4: Since the revolutionary pathway is based on a greater involvement of political elites in the process of institution formation and includes the process of learning to a greater degree, the quality of such formal institutions largely becomes a function of the experience and skillfulness of politicians in dealing with institution design and introduction. Their ability

to minimize the difference between current features of economic structures, cultures, and newly introduced institutions predetermines the extent to which institution creating processes are successful and newly imported economic institutions survive and function effectively. Based on these propositions, we deduce five hypotheses:

Hypothesis 1: The impact of economic institutions on economic growth is greater when such institutions are formed by the evolutionary pathway, rather than via revolutionary change.

Hypothesis 2: The impact of an improvement in institutional quality is associated with (a) lagged and (b) non-linear improvements in rates of economic growth in post-communist countries.

Hypothesis 3: The impact of national political systems' quality on rates of economic growth is greater when institutional formation occurs through the revolutionary method rather than through the evolutionary pathway.

Hypothesis 4: The impact of national political systems' quality on the effectiveness of economic institutions is greater when the formation of such institutions happens in the revolutionary way than in the evolutionary.

Hypothesis 5: Countries which manage to minimize incompatibilities between new market economy institutions on the one hand, and their moral and economic structures on the other hand, are associated with greater improvements in their economic institutions.

4. Data and method description

To test these hypotheses, we use Eicher's and Leukert's (2009) approach of splitting the sample into subsamples and conducting an empirical analysis for each of them separately. The revolutionary subsample consists of 26 countries that experienced socialism, and the vast majority of whom made an overnight transition to a market economy: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary,

Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. The size of their subsample is predetermined by data availability.

The subsample representing the "evolutionary" group includes the 15 oldest members of the EU, as well as Australia, Canada, Iceland, New Zealand, Switzerland, and the United States. In order to eliminate the possibility that the maturity level of institutions influences their relationship with economic performance, we included several developing countries that did not experience any radical change in their political and economic systems recently, and can therefore be included in the evolutionary subsample: Brazil, Chile, Malaysia, Paraguay, Singapore, Taiwan, Thailand, Turkey, and Uruguay. In order to eliminate any possibility that the difference in the size of subsamples may lead to differences in coefficients or their significance tests, we have kept the sample of evolutionary economies relatively small, as well.

In line with Pääkkönen's study (2010), we use yearly data for the period from 1996 to 2007. We exclude the first years of transition from the analysis since the outset of transition entailed profound systemic changes (Fidrmuc, 2003; Lysenko, 2002) or a deep economic recession. We are also aware that during the chosen period, many former socialist economies gained accession into the EU, which may potentially bias the results by causing structural breaks. But, since we focus on studying precisely the effects of such improvements on growth rates and not the causes for these rapid changes, we would defend the plausibility of choosing data for the specified period. The total observations for both samples number 672, with the evolutionary sample containing 360 observations and the revolutionary one having 312 observations.

To test our hypotheses empirically, we use the dynamic GMM method proposed by Arellano and Bond (Arellano and Bover, 1995; Blundell and Bond, 1998) and applied by Bond *et al.*

(2001) to the growth equation. The procedure for applying this technique is well-documented in Pääkkönen (2010), Lee and Kim (2009), and Eicher and Schreiber (2010). It requires that the equation is first-differenced to eliminate the heterogeneity in production functions, and then an instrumental variable method is applied on the differenced model, with lagged values of the endogenous variables used as instruments for the variables themselves. This is possible in a panel setting since lags of the regressors are orthogonal to the error term and can serve as valid instruments (Lim and Decker, 2007). To avoid an overfitting bias, we restrict instruments only to the first, second, and third lags of the respective variables since they usually correlate most closely to the major explanatory variables (Pääkkönen, 2010). To demonstrate the correctness of the model, we report the results from a Sargan (Hansen J) overidentification test and the Arellano-Bond test for AR(2) serial correlation in the residuals. We apply the same model to both samples while ensuring that a standard set of conditioning variables and standard periods are used. To build the baseline model, we use Cobb-Douglas production function (Romer, 2006). Two conventional determinants are included in the model: physical capital (*K*) and effective labour (*AL*):

$$Y(t) = K(t)^{\alpha}[A(t)L(t)]^{1-\alpha}$$

Taking logs of both sides of this equation gives us:

$$lnY(t) = \alpha lnK(t) + (1-\alpha)\, ln[A(t)L(t)]$$

We augment the conventional model by including other determinants of growth: macroeconomic policy (*MS*), participation in international markets (*IM*) and economic institutions (*EI*). The growth equation to be estimated takes the following form:

$$lnY_{it} = \alpha lnY_{it-1} + \beta_1 ln\, K_{it} + \beta_2 ln[A(t)L(t)]_{it} + \beta_3 MS_{it} + \beta_4 lnIM_{it} + \beta_5 EI_{it} + \varepsilon_{it}$$

To estimate the relationship between political institutions (*PI*) and growth, the following model is proposed:

$$lnY_{it} = \alpha lnY_{it-1} + \beta_1 ln\, K_{it} + \beta_2 ln[A(t)L(t)]_{it} + \beta_3 MS_{it} + \beta_4 lnIM_{it} + \beta_5 PI_{it} + \varepsilon_{it}$$

The model for testing the impact of the quality of political elites and their decisions on the institution formation process can be presented as follows:

$$EI_{it}=\alpha EI_{it-1}+\rho_1 URBANIZATION_{it}+\rho_2 SAVINGS_{it}+\rho_3 GOVS_{it}+\rho_4 PI_{it-1}+\mu_{it}$$

Where Y_{it} is economic growth measured through an annual GDP growth rate, Y_{it-1} is one-period-lagged economic growth. *K* operationalizes the investment in physical capital measured through gross capital formation as a percentage of GDP. *MS* represents macroeconomic stability captured by annual consumer price inflation. *IM* measures the openness of an economy through the percentage of countries' export in GDP. *[AL]* is the effective labour operationalized through enrollment ratios in tertiary education. *URBANIZATION* stands for the level of urbanization expressed through the percentage of the population living in cities. *SAVINGS* refers to the percentage of GDP in the form of savings. *GOVS* represents the government size expressed as government expenses for operating activities in providing goods and services and measured as a percentage of GDP. The main source for all the variables is the World Bank electronic database.

EI measures the quality of economic institutions and includes the following institutional indexes: impartial courts, protection of property rights, and legal enforcement of contracts. Their values vary from 1 (poorly defined economic institutions) to 10 (well-defined economic institutions). The information on all economic institutions is sourced from various issues of the Economic Freedom of the World. Some institutional indexes are not available for the entire period and hence the size of the subsamples varies depending on the scope of the analysis. We use a corruption perceptions index constructed by Transparency International to measure the level of enforcement of economic institutions. The values of the index vary from 1 (complete corruption) to 10 (no corruption).

PI measures the quality of political institutions or political environment including control of corruption in government, government effectiveness, quality of regulation, voice and

accountability, and political stability. All political indexes are variables ranging from -2.5 (bad political situation) to 2.5 (ideal political situation). As in the case of economic institutional indexes, they are all constructed on the basis of yearly surveys. The main source for the data is the World Bank Group database.

To gauge the effects of government policies aimed at adjusting national cultures and economic structures to new market economy institutions, we run an OLS regression based on the sample of 26 transition economies. The main objective of the regression is to estimate how the improvements in economic institutions which occurred over the period analyzed are associated with the success of political elites (policymakers) in changing the quality of values and economic structures, which is captured by the quality of the respective dimensions at the end of the analyzed period:

$$EI\_CHANGE_i = \zeta_0 + \zeta_1 EI1996_i + \zeta_2 MORAL\_STRUCTURE2007_i + \zeta_3 ECON\_STRUCTURE2007_i + \varepsilon_i$$

Where *EI_CHANGE* stands for a percentage change occurring in each of the selected economic institutions over the period analyzed and calculated as [(Economic Institution index in year 2007- Economic Institution index in year 1996)/ Economic Institution index in year 1996]. *EI1996 is* the initial value of economic institutional index (in the year 1996). *MORAL_STRUCTURE2007* describes the quality of culture in a country prevalent in the year 2007 and reflects the success of the government in altering the underlying moral values during the period analyzed. It is operationalized through the index of ethical behavior of firms, which is based on a question in which respondents need to estimate whether the corporate ethics (ethical behavior in interactions with public officials, politicians, and other enterprises) “in your country are among the worst or the best in the world”. The responses vary from one to seven, with higher values corresponding to better ethics.

ECON_STRUCTURE2007 stands for the quality of economic structures in the year 2007 (end of the analyzed period) and reflects a government's success in adjusting a country's economic structures to the standards of a free market economy. It is measured through an index of bank soundness, an index of financial market sophistication, and an index of production process sophistication. The index of bank soundness is operationalized through a survey question in which companies need to estimate whether banks in their country are insolvent and may require a government bailout or are generally healthy with sound balance sheets. The index of financial market sophistication is operationalized through a survey question in which companies assess the level of sophistication of financial markets in their countries: whether they are poor or excellent by international standards. The index of production process sophistication is operationalized through a survey question asking companies to estimate whether production processes in their countries use labor-intensive methods/previous generations of process technology or the world's best and most efficient process technology. The responses for all three questions are based on a seven-point scale, with higher values corresponding to a better situation in the banking sector, financial markets, or production processes, respectively. The main source for culture-related and economic structure-related measurements is the Global Competitiveness Report 2008 (World Economic Forum).

5. Empirical results

The empirical results largely support our expectations, suggesting that the relationship between economic institutions and economic growth acquires some specific characteristics in conditions of transition. Protection of property rights, impartiality of court decisions, or efficient enforcement of contracts by the state are all found to strongly affect growth rates of economies operating within the institutions formed through the evolutionary method (see

Table 1). By contrast, economic performance of countries in the revolutionary sample tends to show no positive association with the majority of the aforementioned formal institutions in the short run, which is in line with Hypothesis 1. The only exception is the index of impartiality of court decisions which positively relates to growth rates of transitional economies.

Economic institutions of post-communist countries may develop some relationship with rates of economic growth in the long run, however. If relating lagged values of the property rights index and corruption perceptions index to growth rates (Table 2, Model 1 and 2), one finds a positive association in the case of the corruption perceptions index. This can be regarded as a partial support for Hypothesis 2(a).

Table 1 here

The short-term relationship between economic institutions and growth rates of transition economies proves, however, less straightforward. A closer analysis of institutional effects on economic performance when such institutions are formed revolutionarily suggests that this impact is often non-linear, which is consistent with Hypothesis 2(b). An improvement in the protection of property rights, for instance, affects growth rates negatively (see Table 2, Model 3), especially if they are still at an early stage of their development and are of poor quality. Nonetheless, as the protection of property rights improves, the negative effect tends to gradually fade out (the quadratic term is positive).

The non-linear relationship between economic institutions and rates of economic growth found in countries where the formation of such economic institutions occurred revolutionarily indicates that economies may grow even if formal institutions are poorly developed. Accounting for the level of institutional enforcement may contribute to clarifying these unusual results. The negative sign on the corruption variable (Table 1, Model 4) suggests that the poor enforcement of formal institutions might be a positive determinant of a country's

economic performance. Controlling for the quality of formal institutions (protection of property rights) and the level of their enforcement (the corruption perceptions index) simultaneously (Table 2, model 4), suggests that weak enforcement is likely to offset the negative effect of formal institutions of low quality. By allowing an interaction between the property rights variable and corruption variable, we obtain more evidence for the smoothing effects of poor enforcement of unclear and confusing formal institutions on the dynamics of economic growth. Accordingly, improvements in enforcement levels of formal institutions without improving such institutions may impair economic development in transition countries (see Table 2, Model 5). But, if the enforcement mechanism is coupled with improving the quality of property rights, the main negative effect is offset and reducing corruption fosters economic development.

Table 2 here

Table 3 reports the effects of political settings on economic growth, which are largely consistent with the expectations formulated in Hypothesis 3. The results suggest that post-communist economies operating within the institutional framework formed revolutionarily are more sensitive to the quality of their political bodies. Government effectiveness (Model 3), regulatory quality (Model 4), and control of corruption in government (Model 5) develop a closer relationship with rates of economic growth when the formation of economic institutions follows a revolutionary pathway, but become relatively insignificant in promoting economic development when formal institutions evolve in an alternative way. For countries with the evolutionary method of institution building, it is more important to ensure the existence of strong democratic settings (the voice and accountability index) to allow their economies to grow. By contrast, countries relying on the revolutionary method of institutional formation might not necessarily develop a healthy democratic environment to

achieve good economic performance (Model 1), which is in line with Radygin's and Entov's findings (2008). They should rather focus on improving the quality of their policymaking.

Table 3 here

Table 4 furnishes evidence supporting Hypothesis 4, thereby suggesting that the quality of the political environment is of the utmost importance to the quality of institutions when such institutions are built in a revolutionary way. Economic institutions are particularly sensitive to the level of corruption in government and the quality of political decision-making (regulatory quality and government effectiveness). Since political elites are intensively involved in institutional formation processes when building institutions through the revolutionary method, it is highly likely that the quality of policymakers will predetermine the quality of new formal institutions. By contrast, countries which rely largely on the evolutionary method of institutional formation become more dependent on the quality of the overall political system (the voice and accountability index).

Table 4 here

Since the main danger of the revolutionary institutional formation is that the imposition of new institutions from outside onto post-communist specific contexts may create friction between such institutions and the local economic structures and cultures, the quality of political elites can be reduced to whether they introduce policies aimed at minimizing these inconsistencies. Table 5 contains results suggesting that countries which possessed better banking or financial systems and whose companies are characterized by more ethical behavior are associated with better improvements in the quality of economic institutions. This means that governments which invested their efforts in reforming values and economic structures in parallel to enforcing institutional change are more likely to be successful in building a sound institutional framework, which is consistent with Hypothesis 5.

Table 5 here

The empirical analysis supports the original hypotheses. Moreover, the results can be considered robust, given variations in sample size and measurement approaches to economic and political institutions. The size of the samples changes considerably across empirical models used in the analysis without, however, entraining substantial alterations in the relationships of interest. In addition, four indexes for economic institutions and five indexes for the quality of political bodies used in the analysis can be considered alternative measures of the respective constructs which operationalize overlapping, albeit slightly different, dimensions of the institutional framework. They all prove, however, the development of a very similar relationship to economic performance.

6. Conclusion and discussion

This study therefore confirms the idea that the impact of economic institutions on economic growth may vary depending on the way in which such institutions emerge. If countries build their institutions in a revolutionary method, the relationship of formal institutions to growth rates may acquire two specific features. On the one hand, economic institutions prove to have a deformed association with economic growth in the short run, owing to the inability of such countries to ensure the compatibility of newly-introduced institutions with their economic systems' features and informal norms. On the other hand, the quality of their political systems and policymaking decisions is recognized to be of the utmost importance to the success of their institutional reforms. In general, it is possible to assert that governments' ability to select and implant good formal institutions, while minimizing possible incompatibility between such institutions and the national economic environment into which they must fit, should be seen as the single most important factor of institutional reforms in transition economies.

Understanding the specificities of the revolutionary pathway to institutional formation allows us to identify the possible directions for effective institutional reforms in post-communist countries. We see these reforms as a two-step transformation process. The first is the implementation of radical reforms in their political systems aimed at minimizing corruption in the government and public services, improving professionalism and qualification of government members, and guaranteeing political stability. This can create the conditions necessary for rapid economic development in the short run and lay the necessary foundation for radical institutional change. The second includes the introduction of such institutional change, which should occur in combination with reforms in values and economic structures. The latter combination may reduce the probability of the emergence of inconsistencies between characteristics of new rules of “the game” and the environment in which this game takes place, thereby leading to better economic performance in a country.

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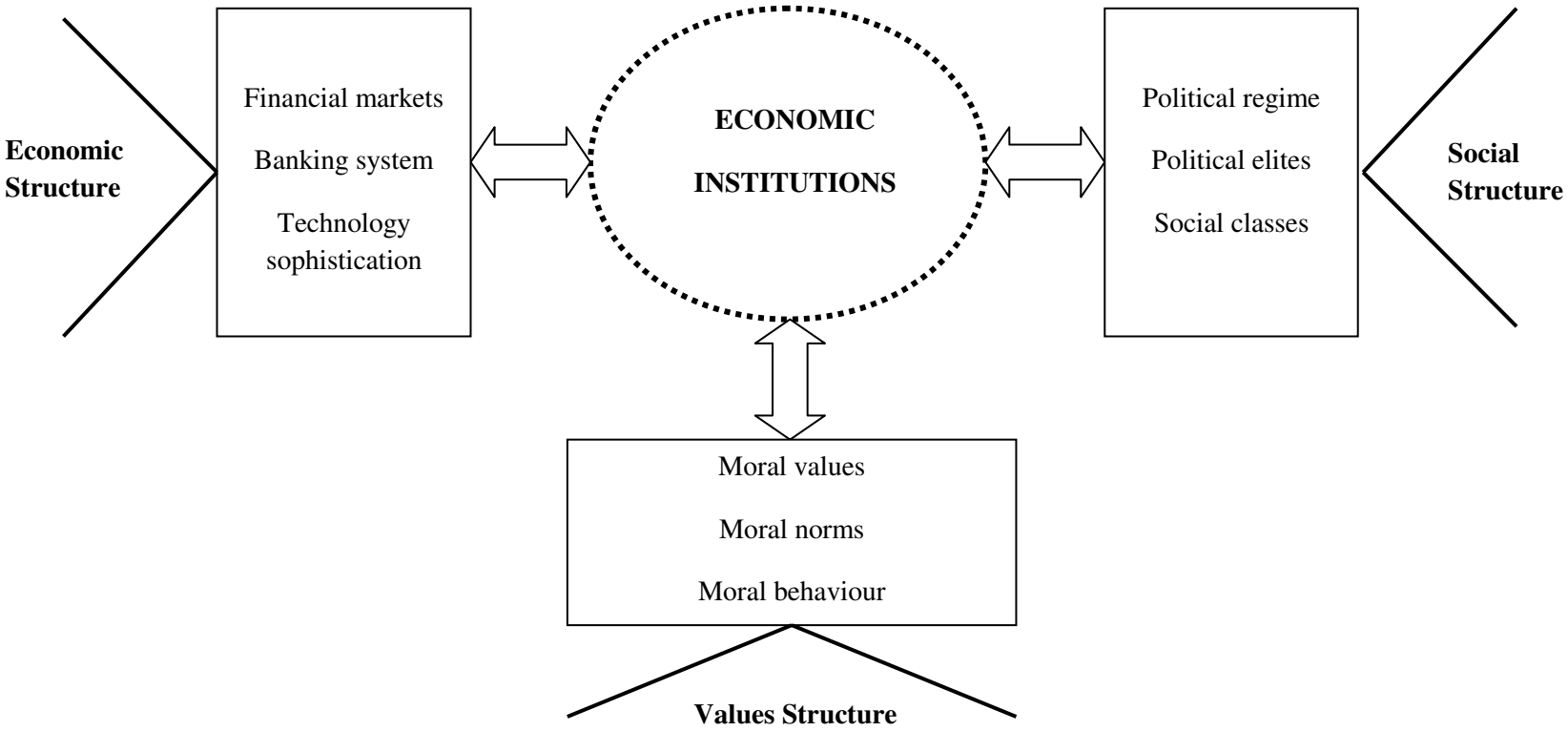

Figure 1. Model of institutional formation or change

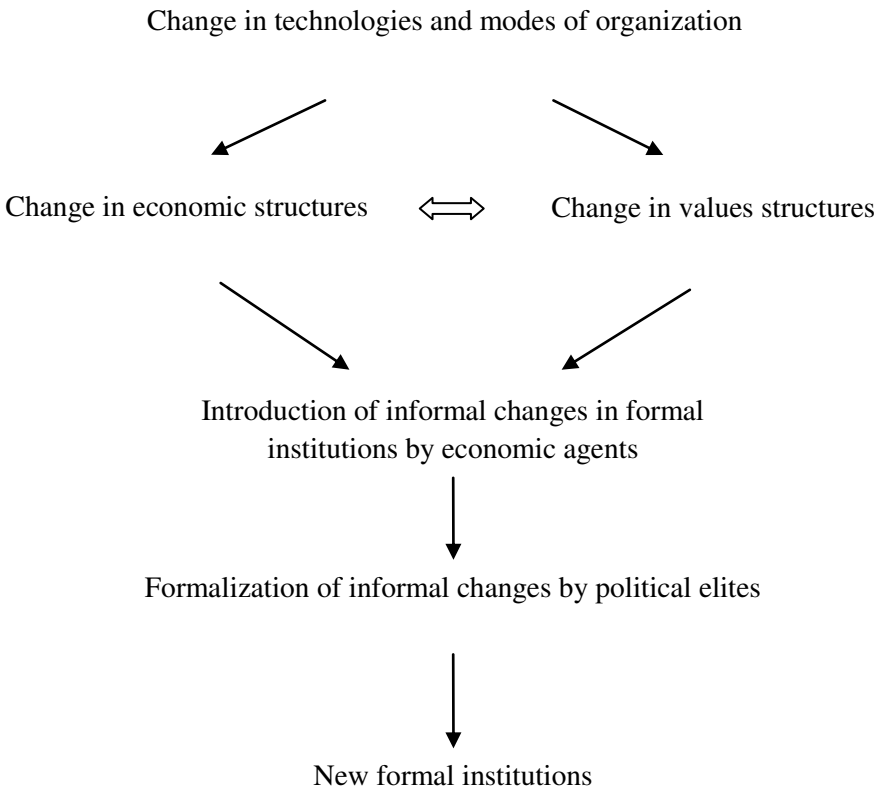

Figure 2. Logic of the evolutionary pathway to institutional formation and change

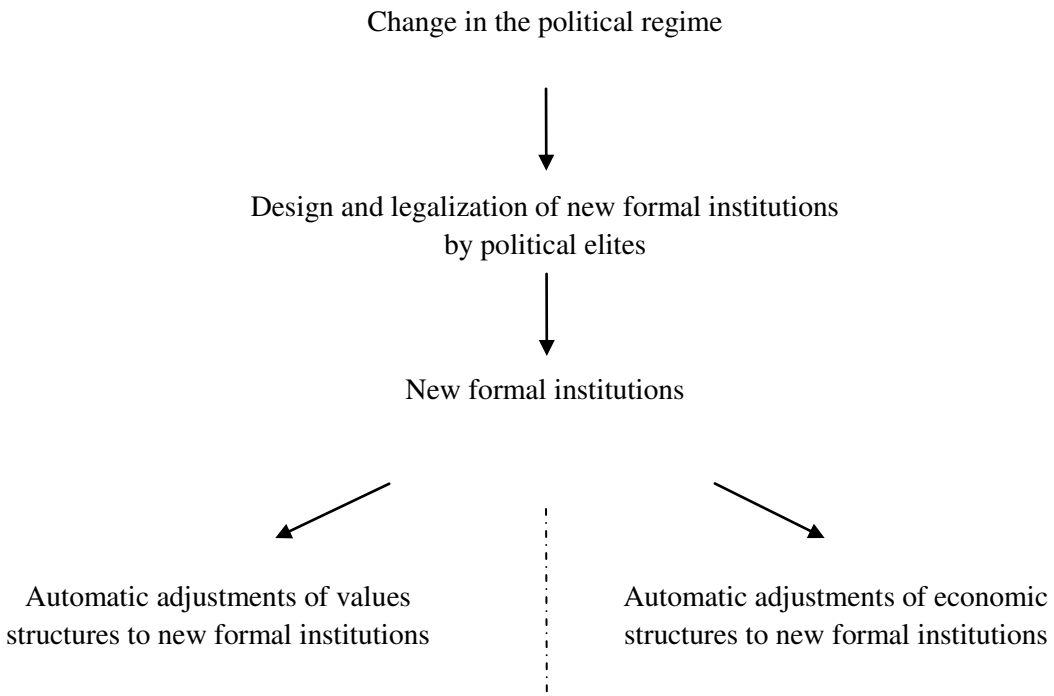

Figure 3. Logic of the revolutionary pathway to institutional formation and change

Table 1.

The impact of institutional indexes on economic growth, by type of institutional formation

Variable	Evolutionary way of institutional formation				Revolutionary way of institutional formation			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Impartial courts	0.338***				0.039*			
	(4.36)				(1.87)			
Protection of property rights		0.438***				-0.009		
		(6.19)				(-0.53)		
Legal enforcement of contracts			0.380*				0.228	
			(1.74)				(1.26)	
Corruption perceptions index				0.129				-0.072***
				(1.16)				(-2.62)
$\ln Y_{t-1}$	0.201***	0.345***	-0.213	0.331***	-0.122*	-0.317***	-0.479**	-0.275***
	(5.42)	(5.90)	(-1.44)	(8.74)	(-1.92)	(-5.86)	(-2.14)	(-5.02)
lnK	1.344**	-0.279	1.054**	3.699***	0.545***	0.456*	1.051*	0.620***
	(2.53)	(-0.34)	(1.98)	(9.88)	(6.02)	(1.72)	(1.83)	(4.35)
ln[AL]	3.301***	2.130***	2.280*	-0.067	0.272**	0.278***	-0.325	0.094
	(4.49)	(3.59)	(1.89)	(-0.21)	(2.13)	(2.90)	(-0.43)	(1.01)
lnMS	-0.271***	-0.281***	-0.234***	-0.300***	-0.036***	-0.031***	-0.044***	-0.001
	(-7.44)	(-7.52)	(-5.46)	(-8.50)	(-13.95)	(-13.57)	(-5.59)	(-1.14)
lnIM	0.038***	0.020	0.049*	0.038***	0.027**	0.029***	0.008	0.025***
	(2.84)	(1.32)	(1.88)	(3.97)	(2.87)	(3.92)	(0.54)	(6.27)
Sargan chi2	15.34	16.46	8.83	22.15	16.83	15.00	8.12	19.66
	(0.286)	(0.225)	(0.116)	(0.139)	(0.207)	(0.307)	(0.150)	(0.236)
AR(2)	0.954	0.942	0.182	0.656	0.717	0.481	0.772	0.111
Number of observations	126	126	57	168	116	111	61	166

Note. t-values are reported in parentheses.

[a] We include institutions as a one-period-lagged index to control for the fact that institutional change might affect economic growth not immediately but only in the next period. In addition, lagged values of institutional indexes may help to further reduce the endogeneity problem.

*p < .10. ** p < .05. *** p < .01.

Table 2.

An extended analysis of short-term effects of economic institutions on growth for the revolutionary sample

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Corruption perceptions index$_{(t-4)}$ [a]	0.225**				
	(2.26)				
Protection of property rights$_{(t-4)}$		0.033			
		(0.65)			
Protection of property rights					
Short-term effect (t)			-0.240***	0.022**	-0.007
			(-3.56)	(2.19)	(-0.54)
Quadratic effect			0.285***		
			(3.62)		
Corruption perceptions index (t)				-0.081	-0.107
				(-1.18)	(-1.35)
Interaction (Corruption and protection of property rights)					0.008**
					(2.32)
lnY_{t-1}	-0.377***	0.478*	-0.060	-0.247***	-0.239***
	(-3.18)	(1.79)	(-0.75)	(-3.67)	(-3.64)
lnK	0.398	1.557***	0.494***	0.816***	0.763**
	(1.31)	(2.99)	(3.07)	(2.87)	(2.37)
ln[AL]	0.006	0.156	-0.175	-0.227	-0.196
	(0.02)	(0.25)	(-1.06)	(-1.52)	(-1.35)
lnMS	-0.029***	-0.054***	-0.026***	-0.028***	-0.028***
	(-7.78)	(-6.77)	(-10.78)	(-14.99)	(-9.09)
lnIM	0.052***	0.001	0.033***	0.045***	0.046***
	(4.96)	(0.06)	(5.81)	(8.85)	(7.16)
Sargan chi2	8.72	9.07	15.80	15.48	15.18
	(0.464)	(0.106)	(0.395)	(0.403)	(0.439)
AR(2)	0.861	0.140	0.469	0.296	0.305
Number of observations	85	36	127	125	125

Note. t-values are reported in parentheses.

[a] We do not calculate long-term institutional effects on economic growth for all economic institutions due to a large number of missing values for earlier periods found for some institutional indexes.

* p < .10. ** p < .05. *** p < .01.

Table 3.

The impact of political quality indexes on economic growth, by type of institutional formation

Variable	Evolutionary way of institutional formation					Revolutionary way of institutional formation				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Voice and accountability	0.613**					0.172				
	(2.41)					(1.22)				
Political stability		-0.138					-0.054			
		(-0.27)					(-0.53)			
Government effectiveness			0.474					0.485***		
			(0.98)					(2.85)		
Regulatory quality				0.011					0.654***	
				(0.02)					(3.60)	
Control of (political) corruption					-0.323					0.666***
					(-0.50)					(3.05)
lnY_{t-1}	0.209***	0.212***	0.188***	0.200***	0.212***	-0.262**	-0.239*	-0.298**	-0.242	-0.332**
	(4.76)	(3.79)	(3.19)	(3.35)	(3.38)	(-2.51)	(-1.87)	(-2.45)	(-1.31)	(-2.40)
lnK	1.258**	1.139*	1.228**	1.190**	1.177**	0.269	0.123	0.199	0.262	0.209
	(2.55)	(1.77)	(2.14)	(2.15)	(2.19)	(1.24)	(0.63)	(1.04)	(1.35)	(0.93)
ln[AL]	2.283***	2.599***	2.522***	2.718***	2.655***	0.266	0.439*	0.169	0.551**	0.106
	(2.69)	(2.95)	(2.64)	(3.00)	(2.90)	(1.06)	(1.84)	(0.71)	(1.96)	(0.37)
lnMS	-0.303***	-0.284***	-0.285***	-0.286***	-0.284***	-0.015**	-0.013*	-0.013**	-0.020***	-0.016***
	(-11.27)	(-6.85)	(-7.06)	(-7.01)	(-6.93)	(-2.54)	(-1.82)	(-2.05)	(-3.69)	(-2.77)
lnIM	0.074***	0.071***	0.078***	0.073***	0.069***	0.024***	0.026***	0.025***	0.025***	0.028***
	(4.61)	(3.93)	(3.62)	(3.75)	(3.36)	(4.08)	(3.85)	(4.44)	(4.37)	(4.47)
Sargan chi2	10.28	10.27	10.73	10.22	10.24	12.02	15.01	13.36	10.61	11.91
	(0.329)	(0.329)	(0.295)	(0.203)	(0.331)	(0.212)	(0.110)	(0.147)	(0.304)	(0.219)
AR(2)	0.897	0.841	0.681	0.855	0.965	0.120	0.174	0.181	0.110	0.124
Number of observations	89	89	89	89	89	124	124	124	124	124

Note. t-values are reported in parentheses.
* p < .10. ** p < .05. *** p < .01.

Table 4.

The impact of political quality indexes on institutional indexes, by type of institutional formation

Variable	Evolutionary way of institutional formation				Revolutionary way of institutional formation			
	Impartial courts equation	Property rights equation	Contract enforcement equation	Corruption perceptions equation	Impartial courts equation	Property rights equation	Contract enforcement equation	Corruption perceptions equation
Voice and accountability	1.119***	1.719***	-0.490	0.162**	0.383	-0.392	0.556**	-0.027
	(4.31)	(7.45)	(-0.51)	(2.25)	(1.40)	(-1.42)	(1.99)	(-0.15)
Political stability	-0.623***	-2.290***	-0.534	-0.022	-0.205**	-1.907***	0.226	-0.120***
	(-3.24)	(-5.58)	(-1.29)	(-0.27)	(-2.20)	(-7.74)	(0.99)	(-4.09)
Government effectiveness	0.312	-0.031	0.011	0.003	0.466*	2.280***	0.219	0.732***
	(1.24)	(-0.08)	(0.03)	(0.02)	(1.93)	(6.84)	(0.65)	(5.86)
Regulatory quality	0.083	-0.236	0.040	-0.227	0.810***	2.585***	0.476*	0.494***
	(0.32)	(-0.65)	(0.15)	(-1.56)	(3.54)	(7.06)	(1.77)	(3.01)
Control of (political) corruption	-0.399	-0.881	-0.042	-0.205	0.976***	2.755***	-0.427	0.554***
	(-1.02)	(-1.59)	(-0.12)	(-1.62)	(9.39)	(8.96)	(-0.78)	(7.96)
$INSTITUTE_{t-1}$	-0.139*	0.111**	0.301**	0.380***	0.209***	0.406***	0.152	0.467***
	(-1.89)	(2.38)	(2.13)	(3.51)	(5.28)	(9.60)	(1.19)	(4.15)
URBANIZATION	-0.641***	0.181**	0.110	-0.140***	-0.435***	0.080	-0.393**	0.007***
	(-7.76)	(2.16)	(0.98)	(-3.05)	(-2.87)	(0.58)	(-2.12)	(3.81)
SAVINGS	-0.005	-0.117	0.003	-0.010*	-0.015***	-0.051	-0.002	0.012**
	(-0.49)	(-1.59)	(0.20)	(-1.93)	(-4.08)	(-0.26)	(-0.02)	(1.96)
GOVS	-0.075***	-0.102***	-0.004	-0.005	-0.021*	-0.062***	-0.031*	0.004
	(-6.46)	(-5.54)	(-0.26)	(-1.02)	(-1.90)	(-4.08)	(-1.69)	(0.65)
Sargan chi2	19.74	21.05	13.26	13.27	13.62	17.23	4.22	15.97
	(0.138)	(0.110)	(0.190)	(0.505)	(0.478)	(0.243)	(0.122)	(0.142)
AR(2)	0.440	0.664	0.389	0.785	0.885	0.138	0.280	0.179
Number of observations	116	116	53	116	78	77	36	93

Note. t-values are reported in parentheses. The political quality indexes have been included in the equations sequentially.
* p < .10. ** p < .05. *** p < .01.

Table 5.

Associations between change in economic institutions, values, and economic structures

Variable	Dependent variables[a]			
	Change in impartial courts index	Change in property rights index	Change in legal enforcement of contracts index	Change in corruption perceptions index
$Institution_{1996}$	-0.252***	-0.408***	-0.014*	-0.224***
	(-7.15)	(-8.63)	(-1.93)	(-3.70)
Ethical behavior of firms	0.363***	0.022	0.010	0.387**
	(3.05)	(0.14)	(0.37)	(2.32)
Soundness of banks	-0.013	0.025	-0.028	0.409***
	(-0.14)	(0.19)	(-1.03)	(2.99)
Financial market sophistication	0.038	0.176*	-0.031	-0.074
	(0.53)	(1.72)	(-1.03)	(-0.69)
Production process sophistication			0.057*	
			(1.67)	
Adj. Rsq.	0.753	0.789	0.282	0.503
Number of observations	21	21	21	23

Note. t-values are reported in parentheses.
[a] These associations should be interpreted with some caution since the cause-effect mechanism can run in both directions.
* p < .10. ** p < .05. *** p < .01.