Assessing Institutional Efficiency, Growth and Integration

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ABSTRACT

This paper presents a new empirical methodology for evaluation of the institutional system's development in transition economies and the impact it has on economic performance. We have developed and used a methodology of estimation of an operational indicator of institutional system dynamics to observe the "institutional reforms-economic growth" interdependence in transition economies. The empirical work reveals a certain dependence between institutional development and growth. An application of the approach to the problems of international economic integration of transition economies in the context of EU accession allows us to assess the role of democratization and the rule of law in particular.

Keywords: Institutional System, Market Reforms, Economic Growth, Economic Integration, EU, Transition Economies

JEL Codes: F15, O17, P20, P24, P30

1. INTRODUCTION

The main purpose of this paper is to offer a somewhat novel approach to assessing the role of institutions in promoting economic growth. The substantive results that can be obtained by using the proposed approach demonstrate its usefulness. By developing and applying the methodology in this paper we have attempted to extend the existing work on the role of institutions in transition economies. Our calculations lead to an adjusted (institutional) operational indicator (AOI) for 20 transition economies. The proper use of AOI for assessing the growth performance appropriately defined is the key operational issue. It turns out that although authoritarian regimes may be better able to promote growth for some time in some cases, a deeper form of democracy and rule of law with strong governance can also be ultimately the crucial elements in the effectiveness of institutional reforms , particularly when advanced forms of strategic integration regionally and globally are at stake. Specifically, this also turns out to be the major prerequisite for the accession of transitional economies to the EU.

The best known intellectual advocate of democracy as both the means and end of reforms for growth is the Nobel laureate Amartya Sen. Our work also demonstrates the relevance of Sen's insights for the transitional economies, and confirms a hypothesis offered among others by Khan(1998, 2004a) in assessing the role of democratic institutions and rule of law that create innovation systems for both economic growth and social capabilities formation.[1]

How do the institutions, "the rules of the game in a society..." (North (1990)) contribute to growth? This question has long been an important topic in the economic literature. A number of studies emphasize the impact of institutions on economic growth. Engerman and Sokolof (Engerman et al., 1994) studying the historical evolution of former colonies since 18th century conclude that only USA and Canada succeeded in providing sustainable growth,

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[1] In particular, Khan has extended Amartya Sen's pathbreaking idea of freedom as capabilities to a completely institutional setting and argued that both formal freedom and deeper structural elements of democracy are necessary for both efficiency and equity. Theoretically, Khan(1998) introduces a nonlinear model on a vector lattice and applies it to study the positive feedback loop innovation system(POLIS) for South Korea by situating the economy within an evolutionary, path dependent institutional matrix. Khan(2004) extends this model to Banach space and gives further existence proofs for multiple equilibria that are associated with different institutional evolutionary paths. Empirically, successive years of social accounting matrices(SAMs) are used and fixed points computed to test the various hypotheses derived from the POLIS theory. Normatively, Khan shows that the Nussbaum's Aristotelan view of capabilities can be reworked to present a theory which is consistent with the neo-Hegelian view that freedom is a structure of interactive set of institutions. See also the essays in Kumssa and Khan(1996) for some discussion in the context of the transitional economies. Khan and Thorbecke(1988,1989) show through the multiplier and structural path analyses within a SAM for Indonesia how institutions can affect technology choice and diffusion which then have implications for growth of output, employment,income distribution and standard of living.

the crucial factor being lower discrimination. Kornai (2000) mentions the importance of development of the institutions for contract relations. The papers by D.Acemoglu, S.Johnson et al, are a step towards more detailed analyses of institutions-growth interrelation. To explain "the rise of Europe" since 16th century Acemoglu, Johnson and Robinson (2002) suggest that Atlantic trade contributed to European growth through an indirect institutional channel as well as through its more obvious direct effects. They explain that Atlantic trade generated large profits for a segment of the bourgeoisie in Western Europe, and this group could demand, obtain and sustain significant institutional reforms protecting their property rights. The authors highlight that in Britain and the Netherlands, new groups of merchants benefited from Atlantic trade and played a major role in inducing institutional change, while in Spain and Portugal, the monarchy and loyal groups with royal trading monopolies were the major beneficiaries. In their later paper Acemoglu and Johnson (2003) find robust evidence that property rights institutions have a first-order effect on long-run economic growth, investment, and financial development, while the contract relations are less decisive. Rodrik (2000) especially highlights the following five market-supporting institutions – property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance and institutions of conflict management.

Many authors emphasize the importance of political institutions, particularly that of democracy, for growth acceleration. Rodrik (2000) discusses democracy as a meta-institution for building other good institutions. Among former socialist economies, the most successful transitions have occurred in the most democratic countries. The support for this empirical proposition comes from the facts that democracies seem to (1) yield long-run growth rates that are more predictable, (2) produce greater short-term stability, (3) handle adverse shocks much better, (4) deliver better distributional outcomes.[2] Ulukaev (1997) compares the interrelation of democracy and economic development with Mendeleev's periodic system of elements. He notes that per capita GDP for a particular country allows one to determine the type of its socio-political structure with a relatively high degree of accuracy. For example, a country where per capita GDP exceeds $10000 in our world is always democratic. Contrariwise, stable

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[2] See also Sen(1999) for a general theoretical presentation and an empirical contrast between India and PRC for a nuanced version of this argument.

democracy seemingly does not exist in countries with per capita GDP less than $2000.[3],[4] On the economic side, however, Popov (1998) has also shown that taking into account the indicators of different initial conditions in the regression analyses shows that there is no statistically significant interrelation between rates of liberalization and GDP dynamics. For the efficiency of state institutions it does not seem to matter if they have democratic or authoritarian beginnings. Furthermore, in countries without strong democratic traditions the transition from authoritarism to democracy seems to be accompanied by falls in institutional efficiency. Thus, at best, there is no common approach or agreement among the social scientists regarding the theorization and measurement of how exactly does democracy affect economic growth in transition economies.

However, following the more holistic theories offered by Sen, Khan and others leads one to introduce an entire spectrum of institutional structure and then consider their effect on growth. Thus, at a minimum, both economic and political institutions must be considered along with other factors that influence economic growth[5]. In this study we present the efficiency of a holistic economic institutional framework by using a single synthetic aggregate indicator. We may recall that a reform index (Index of Liberalization) for 1990-1993 was calculated for the first time in 1996 by a World Bank team - Martha De Melo, Denizer Cevdet and Alan Gelb (De Melo et al, 1996b). The authors create a reform index combining the intensity and duration of economic liberalization. Most indexes measured later were just other weighted averages of standardized EBRD assessments (normalized to the closed interval 0-1). We use shadow economy and barter trade volume indicators as proxies to evaluate the total efficiency of economic institutions. Freedom House's Democratization index is chosen to reflect the state of political institutions. Along with these two institutional factors two additional factors (reforms period ratio in years under socialism and FDI inflow per capita) are included as regressors to explain GDP index dynamics in the sample of transition economies. As our panel regressions show, all the factors had positive role in overcoming transformational recession in the group of selected countries.

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[3] This requires the important reminder that the statement is an empirical one only. Like the famous 'all swans are white' proposition such inductive statements are subject to refutation by contrary observations. See H. A. Khan, " On Paradigms, Models and Theories", for a detailed discussion of the methodological and philosophy of science issues.
[4] Theoretically, it should also be kept in mind that the empirical work in this tradition does not distinguish between formal and 'deep' democratic elements as does Khan in his work on South Korea and Taiwan.
[5] The POLIS theory does precisely this. It also goes further in the normative direction. See Khan's chapter on Taiwan in the MIT Press(2002) volume on "Technology and Modernity" for an example of how success in one technical can generate demands for more democracy which can then be defended on grounds of both efficiency and equity.

While democracy[6] may sometimes be a less robust factor of growth (Popov 1998), it is the main criterion for successful regional integration with EU. From a pragmatic angle, this fact enhances the importance of reforms in political institutions in the transition economies as the hoped-for deeper integration with EU may in fact become the guarantee for their future development.

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[6] Again, the definition leans more towards formal rather than deeper structures of democracy in most of the previous empirical work.

2. ESTIMATION OF INSTITUTIONAL REFORMS

Institutional 'market' conditions are our starting point for estimating the progress of institutional reforms in transition economies. The institutional market in transition economies is usually analyzed (e.g. Tambovtsev, 1998) in the following three segments:

1) Formal-"white market",

2) Informal-"shadow market", including the "black" one,

3) Inherited-"socialist market".

The formal institutions represent the legislative framework intended to regulate the interaction between various economic parties. These are the official rules of the game. The informal institutions are the traditions that have evolved historically and which shape the rules of interaction out of formal constraints. In any particular transition economy some inefficient elements still remain from the former system out of which a transition is being made. In this sense we can refer to these as "inherited" rules.

In fact, in a market economy the institutional market system is represented only by the first two segments above. Tambovtsev highlights that the institutional market conditions can be useful starting points and are possible bases for institutional efficiency estimation. However he did not develop any particular methodology and restricted himself to the introduction of an "operational" indicator of institutional efficiency which can be derived in principle from institutional market conditions. We used the idea to evaluate the institutional system development in transition economies and to study its impact on growth and structural reforms.

As we have noted the existing measures of reforms are mainly based on structural reform evaluations through estimation of different aggregate indexes (weighted or simple averages) usually calculated on the basis of EBRD assessments (e.g. weighted Liberalization index introduced by the World Bank team –De Melo et al. (1996b) or EBRD simple averages). We need to see clearly why such estimates can be good starting points, but may fall short of an adequate institutional assessment. Therefore, before presenting our proposed methodology, it may be useful to consider the general problem of estimation of any institutional efficacy at all. We have to highlight that the

institutions actually cannot be measured in themselves.[7] However, in most cases different indirect indicators can be used to study their development in transition economies. Our logic of evaluation of any class of institutions and their development is based on the assumption that the institutional framework of leading developed countries is complete. Therefore the level of separate institutions' development, as well as the entire framework, is equal to 1. Of course, this is just an assumption, needed for providing the research with relative grounds for comparison .[8] Thus, all institutions vary within the range [0;1].

In order to arrive at our methodology let us first understand what the indicator of a particular institution between 0 and 1 means. Note that we are going to evaluate the formal market institutions, so we assume that the indicator reflects the share of interaction (activity) regulated by the formal rules. Therefore, the remaining parts are the informal ones. Given the standards of relativity adopted above we can call this remaining part the institutional "deficit". The total "deficit" the index can be presented in the form of the followingoperational indicator:

$$\sum_{k=1}^{n}(1-i_k)\cdot\omega_k = \sum_{k=1}^{n}\omega_k - \sum_{k=1}^{n}i_k\cdot\omega_k = 1 - \sum_{k=1}^{n}i_k\cdot\omega_k = (1-I) \qquad (1)$$

where:

k   - the regular number of the institutional system's formal components (institutions)

n   - the total number of formal institutions included in observation

i   - indicator of separate formal institutions in 0-1 range

ω   - the weight of the separate elements

I   - the weighted aggregate index.

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[7] One of us remarked only half in jest that this sounds almost like the Kantian problem of a thing- in- itself or noumenon; however, fortunately, institutions, though analogous to noumena in terms of being behind-the-scene causal factors producing phenomena that can be observed, are also entities that are sufficiently concrete - in-themselves to be known in the sense of offering at least limited epistemic access. Clearly, this does not imply that institutions are transparently, immediately and readily knowable.

[8] Again, in scientific terms, this is really the creation of a (cardinal) scale for measurement. The mapping from the space of existing institutions to the closed interval [0,1] has been clearly defined as a relative one. This means that relative to the existing developed country institution we can measure the efficacy of any other comparable institution through this well-defined mapping. Since the ordering is complete, the cardinal index does allow us to compare any two institutions on the space of the real interval. This need not and does not, however, imply that the existing developed country institutions are perfect in some absolute sense, and can not be further improved. For a theoretical approach to a normative critique of the incompleteness of developed countries' democracy, see Khan(1998) part II.

As one can see the total "deficit" equals 1 minus the aggregate index. Note that in transition economy "deficit" consists of the traditional (informal) and inherited institutions. Thus

$$(1 - I) = T + S = \sum_{k=1}^{n} (1 - i_k) \cdot \omega_k \qquad (2)$$

where:

T   - the traditional (informal) institutions

S   - the socialist (inherited) institutions

We thus get the same operational indicator as Tambovtsev has hinted. Interestingly, there is a natural and intuitively appealing alternative solution to finding a set of weights available in this case. The traditional (informal) institutions are comparable with shadow economy share in GDP (H/GDP), and socialist (inherited) ones can be characterized by the barter trade volumes (B). However, there is another problem. the indicator here represents the efficiency of the institutional system only at a point in time. Hence, it is static. In order to reflect the progress of reform as well, the indext must be adjusted. We do this by using the average shadow economy size in market economies (we used OECD average). Thus the indicator has the following form:

$$I = \sum i_k \cdot \omega_k = 1 - (T + S) \qquad (3)$$

$$I = \frac{1 - (\dfrac{H}{GDP} + \dfrac{B}{GDP})}{1 - \dfrac{\hat{H}}{\hat{GDP}}} \qquad (4)$$

where:

H   - the shadow economy size

B   - the volume of barter trade

^   - highlights the average indicators for market (OECD) economies.

The main advantage of the operational indicator over the weighted index is that here the "weights" are set by the market itself. And we do not need to consider separate components. In case of adjusted operational indicator for most effective systems the values may exceed the level of 1 which means that institutions are even more effective than OECD average. This can happen, as one can see in case of. Lithuania and Poland.

However there is a problem of shadow economy estimation. Here we used already existing evaluations for several transition economies for the period 1990-1997 and just updated them for the period 1998-2000 based on Johnson, Kaufmann and Zoido-Lobatón's elasticity indicators (Johnson et al., 1998).

Most researchers of shadow economy in transition economies find the physical input (electricity) approach most suitable. For example, Yair Eilat and Clifford Zinnes (Eilat et al., 2000) whose estimations cover the largest period of time follow this approach. The current World Development Indicators database provides electricity consumption data only up to 2000, which therefore is the limit for updating this proxy variable.

Presenting the detailed methodology for shadow economy evaluation is out of the scope of this paper. We used Yairs and Zinnes's evaluations, while they themselves used Johnson et al.'s (1998) evaluations for the year 1990. The updated database for shadow economy indicator (based on the physical input (electricity) approach) presented in percent of total GDP, existing evaluations of barter trade in transition economies (Marin et al., 2000) reflected in percent of total GDP (See both indicators in Annex 1) and average shadow economy share in GDP for OECD countries 15% (e.g. Schneider 2000 a, b) were used to calculate the adjusted operational indicator (AOI) for 20 transition economies[9] (see the evaluations in the annex 2).

From this figures we can see that Uzbekistan and Belarus where the market reforms were minimal still have enough efficient institutional systems, 0.975 and 0.864 respectively. Surely if there are reliable evaluations for Slovenia it will join Lithuania and Poland with indicator above 1 (we may use 1+ conventional value). Thus institutional efficiency must really be distinguished from the structural reform (SR) evaluations suggested by EBRD. To explain the relation between them we tried to build the trendline and found no impressive linkages. Then we excluded two late reformers (Belarus and Uzbekistan) from the list and found certain interrelation. The similar case

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[9] We skip the evaluations for Slovenia and Tajikistan as they seem unreliable.

is indicated by Cornia et al. (2001) for China and Vietnam when observing the links between cumulative liberalization index and GDP (in percent of 1989 GDP).

INSERT FIGURE 1 HERE

Figure 1. How Do Institutions Explain the Progress of Structural Reforms?

Here Popov's (1998) explanations are also applicable: sometimes the authoritarian systems are able to guarantee strong institutions better than weak formal democracies. These CIS countries (Belarus, Uzbekistan, as well as Turkmenistan) avoided fast reforms, and got better results. Uzbekistan is the only CIS country that has already returned to its pre-crises GDP, while the other two are also close to that point (registered over 90% of 1989 GDP).

These are the countries with the worst democracy indicators (Freedom House, 2003). The same seem to be true with respect to the Rule of Law indicator, which, in particular, we find unreliable – in fact here the legal institutions are strong enough, judging from AOI. However, it is obvious that there are no fast reformers with weak institutions. Thus strong institutions are of first priority and in some cases they need to sacrifice formal aspects of democracy temporarily while keeping the long term and deeper structural democratization goal in sight.

3. HOW DO STRUCTURAL REFORMS AND MARKET INSTITUTIONS CONTRIBUTE TO GROWTH

Before highlighting the institutions-growth (AOI-GDP) interrelation, it is will be useful to study the impact of structural reforms on growth (SR-GDP) as a more immediate policy intervention exercise. Here our findings are approximately the same as those of De Melo and Gelb (1996a); reforms are significant for growth only for 0.4 and higher values of Liberalization index (De Melo et al., 1996a). While SR (EBRD average) is not entirely the same liberalization index calculated on EBRD assessments, it has similar structure and gives similar results even after eight years (See Figure 2).

Figure 2. How Do Structural Reforms Explain Growth?

Again the late reformers (Belarus, Uzbekistan and Turkmenistan) are the outliers.

The situation, by contrast, is quite different for institutional dynamics, since here the dependence is actually linear even in case of second order polynomial regression (See Figure 3). This does point to the efficacy of institutional reforms throughout the range, from a lower to a higher degree of reform.

Figure 3. How Much Better Do Institutions Explain Growth?

Thus it would appear from these empirical exercises that AOI is a much better indicator to use in order to explain growth in transition economies than is the SR (Average EBRD) index. It also appears that structural reforms have negligible effects immediately. By contrast, the institutional system reform appears to be a matter of permanent improvement.

4. BUILDING POST-MARKET INSTITUTIONS: EUROPEAN UNION ENLARGEMENT

The case of those economies in Central and Eastern Europe and the Baltic countries that joined the European Union in May 1, 2004 is important to consider as a possible scientific and policy study of the next stage of post-socialist institutional reforms. In fact, among the 13 European Union accession candidates 10 were transition countries, which are presumably the ones with more effective institutional reform policies. While most transition countries aim to join European Union (EU) members, yet only these 10 were among the accession candidates.

4.1. In Search of Appropriate Criteria

The importance of appropriate admissions criteria can not be overemphasized. Admitting immature newcomers may lead to future crises and troubles for EU economy. Here the related economic and institutional

aspects are even more important than simply formal political factors. Clearly, the core requirements are: 1) Comparable quality of life, 2) Stability, 3) Institutions for democracy and rule of law. Thus we have used the following indicators to compare the results of post-socialist reforms in the transition region, and to find the criteria which explain EU accession candidacy the best: 1) GDP per capita divergence from EU minimum, 2) Population below the poverty line[10], 3) Inflation and standard deviation of inflation rates, 4) Democracy and Rule of law. In the context of regional economic integration with EU we add another geographic indicator - Distance of capital from Duesseldorf which was used by Stanley Fisher and Ratna Sahay for analyzing initial conditions of market reforms in transition economies (Fisher et al., 2000).

When comparing the GDP per capita indicators for selected groups of EU old member, EU new member states, EU accession candidate and remaining transition countries, the huge differences are evident. In fact no one among the new members and accession candidates has better indicators than EU old members, while the divergence from the EU old members minimum is minimal for Slovenia (1445 USD) and maximal for Tajikistan (10789.5 USD). But there are countries from the group of accession candidates and EU new members that have lower GDP per capita indicators than Croatia – Romania, Bulgaria, Latvia and Lithuania. Even Russia has better indicators than Romania and Bulgaria. Thus GDP per capita is not the main criterion for accession candidacy, but is nevertheless a serious determinant. Institutional, political, geographic and other factors must also be taken into account. But as in case of GDP per capita the rest of the socio-economic indicators fail to explain the main 'algorithm' of EU "Admission Board" decisions. In reality, the most decisive requirement is that of institutions of democracy and rule of law. Development of both institutions demonstrates similar trends. The requirement of democratic principles in governance and public life is incontestable (see Figure 4). Eight of the 10 accession candidates have democracy indexes over 0.8 (80%), where the Poland is the leader – over 0.9 (90%). However the other 2 candidates, Romania and Bulgaria, have indicators over 0.6 (60%). As this shows, a democratic regime is the most important criterion for accession candidacy and admission. The threshold for accession candidacy is an indicator of 60% democracy.

INSERTE FIGURE 4 HERE

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[10] This is an important criterion from the economic well-being perspective. See Sen(1999) and Khan(2004b,c)

Figure 4. Comparison of Institutions for Democracy and Rule of Law in Transition Countries

Source: Our own calculations based on Freedom House data (Nations in Transit 2003)

Note: The marked indicators belong to accession candidate countries and EU new member states. The Freedom House evaluations [7; 1] were translated to [0;1] interval.

Thus the crucial variable called democracy is the very criterion we must seek to study in order to understand clearly the influence of the rest of the determinants on EU accession. No other indicator reflects the "EU admission board's" decisions better than Freedom House's evaluations of democracy and rule of law. As alluded to earlier, we prefer to consider democracy as really more than a simple institution: it is the main meta-institution and principle which underlies the market economy (Rodrik, 2000)[11].

The above discussion justifies our hypothesis that the selection of countries with the best democratic regimes for EU accession is not random: the EU admission board is really following the 'Copenhagen criteria' rather than Maastricht ones in the phasing of accession candidacy. As a strategic orientation, the socio-economic policy of the countries desiring to join the European Community must be directed first and foremost toward improving both these important requisites (i.e.,Copenhagen and Maastricht criteria).

5. EMPIRICAL RESULTS

In this section we present some empirical results which illustrate the usefulness of our approach.In order to ground our findings empirically it is useful to present some multifactor regressions results, where the observed indicators were studied in parallel with other determinants. These empirical results consist of two parts, explaining growth and EU accession perspectives respectively.

In the context of analyzing growth of GDP, the data for capital stock and number of employed population are unreliable for most transition economies. This provides some further indirect motivation for an approach to study the impact of institutions with great care. Thus we select several other regressors to explain growth in transition economies (data from annex 2 were used). This list includes adjusted operational indicator of institutional efficiency

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[11] see also Sen(1999), Khan (1998,2004c)

(AOI) to represent the institutional system and ability to conduct reforms. We have used the ratio of the reform period and years under communism to reflect initial conditions of reforms. The factor included to reflect political institutions was that of democratization index (DEM). Per capita inflow of foreign direct investments (FDI) was used to reflect the capital dynamics.

$$LogGDP = 4.261 + 0.267 LogAOI + 0.056 LogRYUC - 0.209 DEM + 0.00023 \; FDI$$

$$Std.Err. \quad 0.105 \qquad 0.075 \qquad 0.022 \qquad 0.090 \qquad 0.00013$$

$$R^2 = 0.908, \quad R^2_{Adj.} = 0.906, \quad N.obs. = 150$$

(5)

A straightforward interpretation of the results of random effect panel regression is that they show that all the independent variables have stimulated economic growth (see Annex 4). If AOI and RYUC are robust to model specification, the coefficients and statistical characteristics for the next two indicators, especially in case of DEM, may vary while trying other models. It is relevant to mention here the fact that in the current literature there are different operational and theoretical hypotheses about how democracy may influence economic growth. There are some papers emphasizing the relationship between democracy and per capita GDP (e.g. Ulukaev, 1997). While the Human Development Report 2003 concludes that there is no relation among these indicators. V.Popov argues that only advanced economies with very strong institutions can afford democracy (Popov, 1998).Otherwise democracy damages the institutions and growth. So according to his theory to guarantee better reforms the economy must be liberalized while the authoritarian elements of political institutions seem to be useful until certain level of development is reached. In part, Popov suggests this argument for partial explanation of Chinese miracle. In contrast, Sen (1999) argues in a nuanced way for the efficacy of democracy for averting disasters even in low income countries. Khan(1997, 1998,2004a,b,c) argues in a multiple equilibria setting that both democratic and authoritarian alternatives may work up to a point, but there is always a substantive loss of freedom[12] associated with the nondemocratic alternative. Furthermore, beyond a certain stage of development, the nondemocratic alternative

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[12] Defined precisely as "social capabilities" following Sen and Nussbaum.

may lead to a suboptimal rate of innovation and growth. While our previously conducted cross section regressions on the sample of 20 countries tended to support Popov's hypothesis, the panel regressions for 19 transition economies (Romania was excluded from the sample) for the period 1993-2000 did not reveal similar regularity. Thus we conclude that the most important factors of growth are strong institutions (both economic and political), high investment rates, together with favorable initial conditions of reforms.

At the same time, even from a pragmatic point of view, democracy is important for successful international and regional integration. In the context of EU accession, we have used the democracy indicator as a reflection of "aggregate attractiveness" for selection – the dependent variable. This aggregate "stock" depends on several determinants. We used the remaining indicators as independent variables except for inflation, as the standard deviation of inflation rates (SDIR) better indicates the selection. Thus our regressors are GDP per capita divergence from EU minimum (GDPD), Distance of capital from Duesseldorf (DCFD) and SDIR (data from Annex 3). In this case the better condition for both dependent and independent variables corresponds to their smaller values.

$$DEM = -17.802 + 1.714\, LogDCFD + 0.477\, LogSDIR + 0.879\, LogGDPD$$

$$Std.Err. \quad\quad 4.319 \quad\quad\quad\quad 0.400 \quad\quad\quad\quad 0.178 \quad\quad\quad\quad 0.592$$

(6)

$$R^2 = 0.73, \quad R^2_{Adj.} = 0.69, \quad N.obs. = 20$$

As the relationship is statistically significant, the determinants are really quite decisive (see in more detail in Annex 4). Note that here we register positive effect of lower GDP per capita divergence from EU minimum on democracy.

6. SUMMARY AND CONCLUSIONS

In this paper we have followed a new approach to study institutional efficacy. We have found that using separate indexes or their average for estimation of institutional systems has some disadvantages. In the final analysis, all estimations--- totally or partially--- are based on or proxied with expert evaluations of several reputable organizations as a matter of current empirical practice. We have argued that the shadow economy is the best reflection of institutional efficiency/inefficiency. Thus the AOI is a step towards better understanding of the institutional system as a whole and studying its impact on economic growth. All the other aggregate indexes we met in literature mainly represented structural reforms instead of institutions.

The most important current topic of market reforms in post-socialist part of the world is that of EU enlargement. The case of those economies in Central and Eastern Europe and the Baltic States that joined the European Union leads us to consider the next stage of post-socialist institutional reforms. We conclude that democracy is the main criterion for successful integration with EU. Successful establishment of democratic regimes together with high growth rates may become the key to European community for most transition countries. In several of them, there are also geographical obstacles, which make their accession derivative from other countries membership. However, European integration is attractive for most transition economies which makes it some kind of stimulus for institutional and structural reforms. While growth is always important for building better institutions, by itself it may not be enough. We need to ask if there may be several institutional "points of growth" which can accelerate institutional development. For example, better protection of minority shareholders interests and enforcing their rights in participation in companies' management will help to bring the companies to official sector of economy. In this case they will be regulated by law.[13] Here a chain reaction is quite possible, as their partners also will have to act in the similar way. In other words,using and protecting several "outsiders" like minority shareholders whose interests mainly coincide with those of authorities will allow appropriate and natural coalitions to form, strengthening the fight against shadow economy, corruption, monopolies etc and allowing other reforms to be implemented more effectively. The task of the policy-makers is to find out and use similar "points of

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[13] Here the work on corporate governance is clearly relevant. In the Asian context,right after the financial crisis this became and has remained an important topic. For a basic typology and an analysis of the respective roles of competitive markets and corporate governance, see Khan(1999a,b; 2003 a , b,c; 2004 forthcoming)

growth" in order to stimulate institutional and economic development. Such an institutional system could promote investments (and under a strategy of openness direct them to export oriented sectors) in such a way as to create economic growth in a democratic governance environment and effective rule of law.

ANNEXES

Annex 1. Proxies for estimating AOI

Shadow Economy's Share in Total GDP [a], 1990-2000

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Armenia	23,7	33,3	58,8	51,9	44,4	42,5	48,2	39,4	44,7	45,6	45,5
Azerbaijan	21,9	18,0	13,8	34,2	44,1	50,7	50,2	49,7	56,9	58,5	60,0
Belarus	15,3	17,4	16,7	15,3	18,7	21,9	16,7	13,0	16,0	15,4	14,7
Bulgaria	25,4	25,4	25,4	25,4	24,2	30,6	41,2	35,7	34,4	29,0	30,7
Croatia	23,1	28,1	21,9	26,5	25,4	23,7	21,3	30,6	33,2	36,6	37,1
Czech R.	6,5	15,3	15,3	18,7	19,4	19,4	20,0	18,7	17,6	16,6	18,5
Estonia	20,0	25,4	24,8	31,0	39,8	42,9	43,8	41,5	44,1	40,4	43,1
Georgia	24,8	31,0	52,8	60,5	53,7	55,8	51,2	46,5	52,1	50,6	50,2
Hungary	27,0	30,1	26,5	27,5	25,4	27,5	29,1	27,0	27,6	27,7	28,5
Kazakhstan	16,7	25,9	24,2	29,1	23,1	31,5	24,8	21,3	15,1	17,0	23,6
Kyrgyz R.	16,7	23,1	34,6	47,6	58,7	72,3	66,6	64,3	65,5	67,2	68,9
Latvia	13,0	17,4	32,9	28,6	25,9	27,5	28,1	29,8	31,3	31,2	31,9
Lithuania	11,5	16,0	18,7	26,5	30,1	27,5	9,9	10,7	11,4	9,1	4,7
Moldova	18,0	31,0	46,8	29,1	56,5	55,9	58,3	55,4	46,7	35,1	28,8
Poland	19,4	23,1	18,7	17,4	14,5	13,0	11,5	12,5	12,7	10,3	14,3
Romania	22,5	17,4	19,4	16,0	9,9	10,7	13,0	19,4	15,9	10,2	10,3
Russia	14,5	15,3	23,1	25,9	31,0	34,6	35,1	34,2	33,2	34,9	36,7
Slovak R.	5,7	13,0	12,3	16,0	13,8	9,9	15,3	12,5	5,5	12,0	9,3
Ukraine	16,0	18,7	25,4	31,5	41,5	49,0	53,5	56,1	54,5	53,7	53,5
Uzbekistan	11,5	9,1	4,8	0,0	10,7	5,7	13,0	9,9	7,9	7,0	7,8

Barter Trade Volumes in Percent to Total GDP [b]

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Armenia	2,2	1,9	1,2	1,4	1,6	1,7	1,5	1,8	1,6	1,6	1,6
Azerbaijan	4,0	4,2	4,4	3,4	2,8	2,5	2,5	2,0	1,7	1,7	1,6
Belarus	11,1	10,8	10,9	11,1	10,7	10,2	10,9	12,1	11,7	11,8	11,9
Bulgaria	3,0	3,0	3,0	3,0	3,0	2,8	2,4	2,7	2,8	3,0	2,9
Croatia	16,7	15,6	17,0	16,0	16,2	16,6	17,1	22,8	21,9	20,8	20,6
Czech R.	3,6	3,2	3,2	3,1	3,1	3,1	3,0	2,7	2,7	2,8	2,7
Estonia	4,4	4,1	4,1	3,8	3,3	3,1	3,1	2,4	2,3	2,4	2,3
Georgia	5,1	4,7	3,2	2,7	3,1	3,0	3,3	2,8	2,5	2,6	2,6
Hungary	1,2	1,2	1,3	1,2	1,3	1,2	1,2	0,6	0,6	0,6	0,6
Kazakhstan	17,3	15,3	15,7	14,7	15,9	14,2	15,6	14,1	15,2	14,9	13,7
Kyrgyz R.	13,8	12,7	10,8	8,6	6,8	4,6	5,5	6,2	6,0	5,7	5,4
Latvia	2,7	2,6	2,1	2,2	2,3	2,2	2,2	2,0	1,9	1,9	1,9
Lithuania	2,7	2,6	2,5	2,3	2,2	2,2	2,8	2,5	2,5	2,5	2,7
Moldova	24,3	20,4	15,7	21,0	12,9	13,0	12,3	11,7	14,0	17,1	18,7
Poland	3,1	3,0	3,2	3,2	3,3	3,4	3,5	4,1	4,1	4,2	4,0
Romania	6,7	7,1	6,9	7,2	7,7	7,7	7,5	5,9	6,1	6,6	6,5
Russia	20,1	19,9	18,1	17,4	16,2	15,4	15,3	15,9	16,1	15,7	15,3
Slovak R.	18,1	16,7	16,8	16,1	16,6	17,3	16,3	16,8	18,1	16,9	17,4
Ukraine	17,1	16,5	15,1	13,9	11,9	10,4	9,4	10,5	10,9	11,1	11,2
Uzbekistan	20,5	21,1	22,1	23,2	20,7	21,9	20,2	9,2	9,4	9,5	9,4

Source:
   a)   Yair Eilat, Clifford Zinnes, The Shadow Economy in Transition Countries: Consequences for Economic Growth and Donor Assistance, CAER II Discussion Paper No. 83, September 2000, EBRD [May 2003], Transition Report Update, World Development Indicators 2003, and authors' own calculations.
   b)   World Business Environment Survey, World Bank-EBRD 1999./ Marin D., Kaufmann D., and Gorochowskij B., Barter in Transition Economies: Competing Explanations Confront Ukrainian Data, Department of Economics, University of Munich, Discussion paper 2000-6 January 2000, An electronic version of this paper is downloadable from http://epub.ub.uni-muenchen.de

Note: For the period 1990-1996 the estimation of barter trade volumes for the year 1996 is used, the period 1997-2000 was represented with the measurement for the year 1999.

Annex 2. Main Factors of Growth in Transition Economies

	AOI of institutional efficiency [0;1]								Reform period divided by the years under communism (RYUC)							
	1993	1994	1995	1996	1997	1998	1999	2000	1993	1994	1995	1996	1997	1998	1999	2000
Armenia	0,549	0,635	0,657	0,592	0,692	0,632	0,621	0,623	0,027	0,041	0,054	0,068	0,081	0,095	0,108	0,122
Azerbaijan	0,735	0,624	0,55	0,555	0,568	0,487	0,468	0,452	0,027	0,040	0,053	0,067	0,080	0,093	0,107	0,120
Belarus	0,866	0,831	0,799	0,852	0,881	0,851	0,857	0,864	0,027	0,040	0,053	0,067	0,080	0,093	0,107	0,120
Bulgaria	0,843	0,856	0,784	0,664	0,725	0,74	0,8	0,781	0,047	0,070	0,093	0,116	0,140	0,163	0,186	0,209
Croatia	0,677	0,687	0,703	0,725	0,549	0,528	0,501	0,497	0,045	0,068	0,091	0,114	0,136	0,159	0,182	0,205
Czech Rep.	0,92	0,913	0,913	0,905	0,925	0,937	0,949	0,927	0,070	0,093	0,116	0,140	0,163	0,186	0,209	0,233
Estonia	0,767	0,67	0,635	0,625	0,66	0,631	0,673	0,642	0,078	0,098	0,118	0,137	0,157	0,176	0,196	0,216
Georgia	0,433	0,508	0,485	0,535	0,596	0,535	0,551	0,556	0,029	0,043	0,057	0,071	0,086	0,100	0,114	0,129
Hungary	0,838	0,863	0,838	0,82	0,852	0,845	0,843	0,834	0,073	0,098	0,122	0,146	0,171	0,195	0,220	0,244
Kazakhstan	0,662	0,718	0,639	0,701	0,761	0,82	0,802	0,738	0,027	0,040	0,053	0,067	0,080	0,093	0,107	0,120
Kyrgyz Rep.	0,514	0,406	0,272	0,329	0,347	0,335	0,319	0,302	0,027	0,040	0,053	0,067	0,080	0,093	0,107	0,120
Latvia	0,814	0,844	0,826	0,82	0,803	0,786	0,787	0,779	0,059	0,078	0,098	0,118	0,137	0,157	0,176	0,196
Lithuania	0,838	0,797	0,826	1,027	1,022	1,014	1,039	1,089	0,059	0,078	0,098	0,118	0,137	0,157	0,176	0,196
Moldova	0,587	0,36	0,365	0,345	0,387	0,462	0,563	0,617	0,038	0,058	0,077	0,096	0,115	0,135	0,154	0,173
Poland	0,934	0,966	0,983	1,001	0,981	0,979	1,005	0,961	0,071	0,095	0,119	0,143	0,167	0,190	0,214	0,238
Romania	0,904	0,969	0,96	0,935	0,88	0,917	0,979	0,978	0,070	0,093	0,116	0,140	0,163	0,186	0,209	0,233
Russia	0,667	0,621	0,588	0,584	0,587	0,596	0,581	0,565	0,041	0,054	0,068	0,081	0,095	0,108	0,122	0,135
Slovakia	0,799	0,819	0,856	0,806	0,832	0,898	0,836	0,863	0,070	0,093	0,116	0,140	0,163	0,186	0,209	0,233
Ukraine	0,642	0,548	0,478	0,436	0,392	0,407	0,414	0,416	0,013	0,027	0,040	0,053	0,067	0,080	0,093	0,107
Uzbekistan	0,904	0,807	0,852	0,786	0,952	0,973	0,982	0,975	0,040	0,053	0,067	0,080	0,093	0,107	0,120	0,133
	Democratization index [0;1]								Per capita FDI inflow (USD)							
Armenia	0,544	0,544	0,544	0,456	0,367	0,367	0,417	0,407	0,31	2,50	8,06	5,63	16,77	71,29	64,19	33,55
Azerbaijan	0,242	0,057	0,057	0,057	0,149	0,242	0,250	0,240	0,00	2,89	42,86	80,38	141,14	127,88	63,75	14,69
Belarus	0,564	0,392	0,478	0,306	0,133	0,133	0,093	0,073	1,75	1,07	1,46	10,19	34,31	19,71	44,30	9,00
Bulgaria	0,575	0,693	0,693	0,693	0,575	0,575	0,615	0,657	4,76	12,50	11,67	16,63	61,08	65,49	96,22	12,72
Croatia	0,458	0,458	0,458	0,458	0,458	0,458	0,468	0,625	22,17	23,91	23,19	108,00	75,43	185,56	314,13	42,27
Czech Rep.		0,917	0,917	0,917	0,917	0,917	0,875	0,865	54,66	72,72	245,24	123,88	123,79	348,64	605,24	479,90
Estonia	0,483	0,597	0,597	0,711	0,825	0,825	0,823	0,833	111,43	151,43	142,14	79,29	92,86	410,00	158,57	231,43
Georgia	0,192	0,083	0,083	0,192	0,300	0,408	0,500	0,468	0,00	1,48	1,11	10,00	43,70	40,93	11,11	28,15
Hungary	0,833	0,917	0,917	0,917	0,917	0,917	0,875	0,843	228,24	107,55	432,35	223,43	170,69	153,96	172,00	106,86
Kazakhstan	0,356	0,356	0,275	0,275	0,275	0,275	0,270	0,240	29,20	39,20	60,25	72,42	85,16	75,20	106,31	84,12
Kyrgyz Rep.	0,579	0,383	0,481	0,383	0,383	0,383	0,353	0,312	0,00	8,44	21,33	10,22	18,04	18,30	8,09	-1,28
Latvia	0,450	0,450	0,569	0,689	0,689	0,808	0,823	0,843	20,00	111,60	98,00	151,60	206,00	126,25	137,92	166,67
Lithuania	0,625	0,733	0,733	0,842	0,842	0,842	0,833	0,843	8,33	8,61	20,00	42,22	91,11	263,14	136,57	107,14
Moldova	0,214	0,214	0,405	0,405	0,500	0,500	0,520	0,510	3,18	4,09	16,98	5,35	16,51	20,47	7,91	35,56
Poland	0,844	0,844	0,844	0,925	0,925	0,925	0,927	0,927	15,03	14,04	29,38	71,01	78,58	128,32	164,03	211,14
Romania					0,365	0,525	0,635	0,615	3,83	15,02	18,37	18,36	56,06	92,40	45,56	46,92
Russia	0,483	0,483	0,483	0,483	0,483	0,483	0,458	0,395	0,00	0,00	9,84	11,20	11,38	10,22	7,57	-3,41
Slovakia		0,457	0,660	0,660	0,558	0,558	0,750	0,792	20,19	44,53	35,93	36,85	15,56	69,26	129,81	381,11
Ukraine	0,560	0,357	0,458	0,458	0,458	0,458	0,448	0,427	0,00	2,92	4,99	10,06	11,41	14,79	9,76	12,05
Uzbekistan	0,174	0,009	0,009	0,009	0,092	0,092	0,093	0,083	2,15	3,27	-1,06	3,90	7,08	5,83	4,94	2,92

Source: Our own calculations based on:
1,Transition Report Update, May 2003, EBRD
2.Transition Report 2002, EBRD,
3.World Development Indicators 2003
4. Nations in Transit 2003, Freedom House
5.Fisher S., Sahay R., The Transition Economies After Ten Years, NBER Working Paper No. 7664, April 2000,
6,World Business Environment Survey, World Bank-EBRD 1999./ Marin D., Kaufmann D., and Gorochowskij B., Barter in Transition Economies: Competing Explanations Confront Ukrainian Data, Department of Economics, University of Munich, Discussion paper 2000-6 January 2000
7,Yair Eilat, Clifford Zinnes, The Shadow Economy in Transition Countries: Consequences for Economic Growth and Donor Assistance, CAER II Discussion Paper No. 83, September 2000

Note:
1,AOI is measured based on the shadow economy indicators by Yair E. and C.Zines 2000 (extrapolated based on electricity consumption method) and barter trade volumes in GDP by Marin D., Kaufmann D. and Gorochowskij B. 2000
2.RYUC is calculated based on the years after the start of the reforms according to EBRD TR 2002 chronology and the years under communism by Fisher.S amd R.Sahay, 2000
3,Demicratization Index values from 7-1 are brought to the range 0-1. Only the Political freedom and Civil liberties assessments were proxied to evaluate absent values before 1997.
4.GDP index (1989=100%) was used as dependent indicator of growth. We calculated GDP index series bases on EBRD indicator of the index in 2002 and the annual growth rates for the period 1994-2000.

Annex 3. Main Factors of Regional Economic Integration

	DEM[1] [7; 1]	DCFD[2] (km)	SDIR[3] (%)	GDPD[4] (USD)
Slovenia	1,75	815	6,78	1445
Czech Rep.	2	559	5,02	5451
Hungary	1,81	1002	9,16	5726
Poland	1,63	995	6,28	6305
Estonia	1,94	1449	5,06	6915
Slovak Rep.	1,81	824	8,66	7260
Lithuania	1,88	1299	2,34	7504
Latvia	1,94	1293	2,82	7721
Romania	3,25	1637	34,62	9211
Bulgaria	3,13	1574	7,72	9279
Croatia	3,44	913	4,22	6569
Russia	4,88	2088	35,08	8817
Macedonia	3,94	1522	2,46	9201
Kazakhstan	6,13	5180	8,075	9449
Albania	3,94	1494	8,46	9624
Belarus	6,63	1435	149,38	9737
Ukraine	4,5	1664	12,88	10187
Azerbaijan	5,31	3270	0,5	10248
Armenia	4,69	3143	4,78	10275,5
Georgia	4,69	3069	8,18	10362
Turkmenistan	6,94	4254	27,35	10429,2
Moldova	4,38	1673	11,36	10510
Kyrgyz Rep.	5,63	1293	13,82	10646,1
Uzbekistan	6,56	4788	33,34	10716,6
Tajikistan	5,5	4938	23,2	10789,5

Sources:
1. Nations in Transit 2003, Freedom House,
2. Fisher S., Sahay R., The Transition Economies After Ten Years, NBER Working Paper No. 7664, April 2000,
3. World Economic Outlook 2003, Growth and Institutions, IMF,
4. World Development Indicators 2003, WB and authors' calculations.

Annex 4. The Empirical Results

Explaining Growth: Regression Results

Dependent Variable: LogGDP
Random effect regression
Method: GLS (Variance Components)
Total panel observations 150

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.261382	0.105711	40.31144	0.0000
LogAOI	0.267161	0.075441	3.541347	0.0005
LogRYUC	0.056631	0.021653	2.615369	0.0099
DEM	0.208832	0.090205	2.315080	0.0220
FDI	0.000233	0.000128	1.813964	0.0718

Random Effects (C)			
Armenia	-0.117450	Kyrgyz	0.168949
Azerbaijan	-0.218995	Latvia	-0.200692
Belarus	0.173190	Lithuania	-0.201608
Croatia	0.138841	Moldova	-0.370621
Croatia	0.138841	Poland	0.313098
Czech	0.167188	Russia	-0.043497
Estonia	0.024187	Slovakia	0.254083
Georgia	-0.581854	Ukraine	-0.196956
Hungary	0.166447	Uzbekistan	0.365234
Kazakhstan	0.074272		

R^2	R^2_{Adj}	Std. Error of the Regression
0.908	0.906	0.106

Note: The sample included 19 transition economies (Romania was excluded)

Results for Democracy Regression

Dependent Variable: DEM
Method: Least Squares
Number of observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
(Constant)	-17,802	4,319	-4,122	0,000
LogDCFD	1,714	0,400	4,289	0,000
LogSDIR	0,477	0,178	2,674	0,014
LogGDPD	0,879	0,592	1,485	0,152

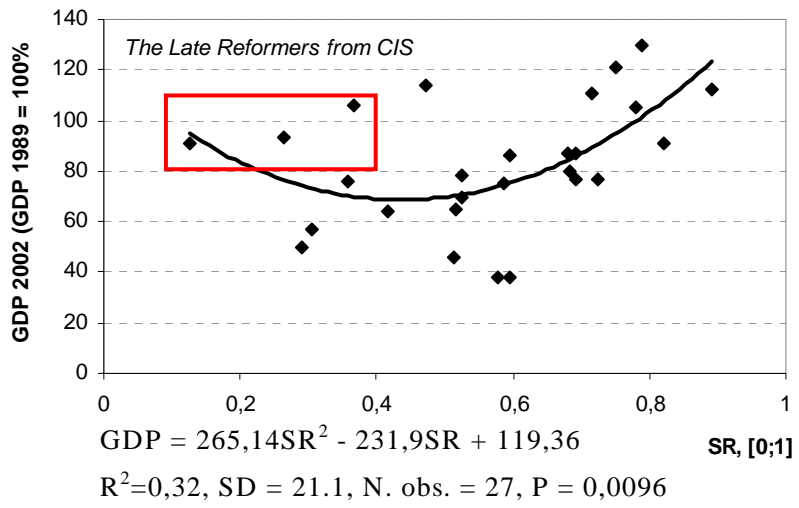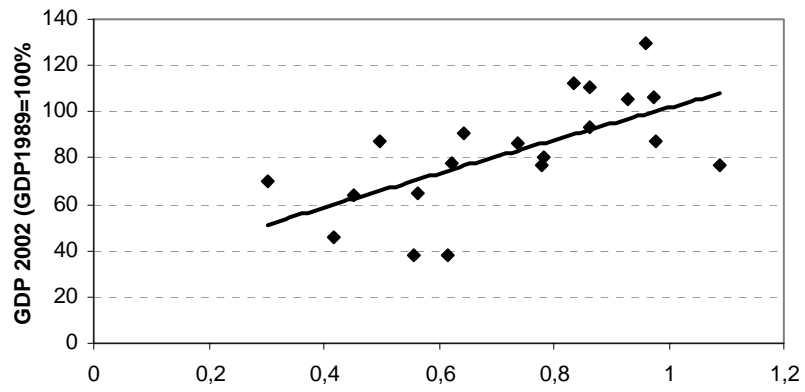| R^2	R^2_{Adj}	Std. Error of the Regression
0.734	0.696	0.970

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$$SR = -0{,}3325 \, AOI^2 + 0{,}8716 \, AOI + 0{,}2191$$

$$R^2 = 0{,}503, \, SD = 0{,}094, \, N. \, obs. = 18, \, P = 0{,}0053$$

The Late Reformers from CIS

$$GDP = 265{,}14SR^2 - 231{,}9SR + 119{,}36$$

SR, [0;1]

$R^2 = 0{,}32$, SD = 21.1, N. obs. = 27, P = 0,0096
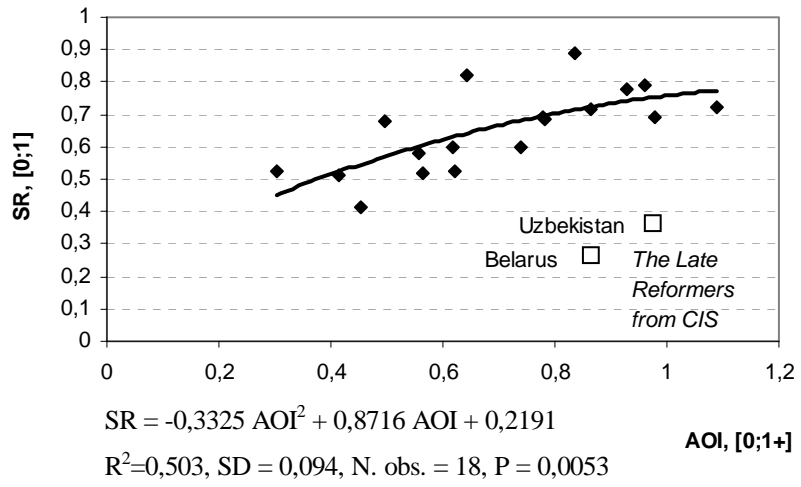
$$GDP = -5{,}4505AOI^2 + 79{,}586AOI + 27{,}606$$

$R^2 = 0{,}406$, SD = 19,9, N. obs. = 20, P = 0,011

Index of the Institute [0-1]

Turkmenistan, Belarus, Uzbekistan, Kazakhstan, Kyrgyz Rep., Tajikstan, Azerbaijan, Russia, Armenia, Georgia, Ukraine, Moldova, Bosnia, Macedonia, Albania, Yugoslavia, Croatia, Romania, Bulgaria, Czech Rep., Latvia, Slovakia, Hungary, Estonia, Lithuania, Slovenia, Poland

—○— Democracy   ▬ Rule of Law