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INSTITUTIONAL AND FINANCIAL DETERMINANTS OF DEVELOPMENT

NEW EVIDENCE FROM ADVANCED AND EMERGING MARKETS

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The paper tests *the democratization-development hypothesis*, namely that democratization has a positive impact on growth, economic development and changes in well-being. We employ a probit model to estimate the probabilistic indicator for democracy for a large sample of countries. Panel regressions are applied to explain the impact on growth of democratic political institutions, economic institutions and efficiency of financial management, along with other more "traditional" factors. The empirical findings support the hypothesis of the decisive role of democratic political and efficient economic institutions in stimulating economic growth. The main results also highlight the importance of effective allocation of financial resources. In addition to the growth regression results, it is argued, consistently with the capabilities approach to development by Sen, that many of the explanatory variables in the growth regression are positively related to development as capabilities enhancement. This is particularly true for democratic freedoms. Finally the problem of 'optimal' institutional development is discussed within the context of resource allocation, migration flows and political decision making.

JEL Codes: I31, O11, O17

Keywords: the democratization-development hypothesis, governance institutions, capabilities, economic growth, financial management

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1. Introduction

What role do political and economic institutions [1] play in the growth and development process?[2] In this paper, among other things, we test a specific hypothesis regarding the nexus between politics and development. The hypothesis in its simplest form postulates a positive relationship between increasing democracy and economic growth and capabilities enhancement., as defined by Sen and others. We call this the democracy-development hypothesis.

While growth is a much studied process, in the context of welfare-enhancing or more broadly, capabilities-enhancing developmental process, the economic, social and political institutions are even more decisive than the production of goods and services (translated into monetary incomes). Even one of the two main motives of human activity according to Sigmund Freud, need for power[3], may also be interpreted as a need for certain institutions which most people want to set for themselves. Thus the institutions are something more than just a regulating framework for human interaction: they are also somehow a target. The institutions are what really tie individuals to the society. Even

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[1] As the succeeding paragraphs make clear, we include some crucial aspects of finance---in particular, bank finance--- as a factor along with the other economic institutions.

[2] In order to avoid misunderstanding, we hasten to add that we view growth as one component of welfare, and not always and not necessarily the decisive one. As Anand and Sen (2000, p. 2031) write: *"It is, of course, true that being rich, wealthy and affluent can be among the most important contributory factors in generating well-being, and the opulence-oriented approach to economic progress certainly cannot be criticized for being irrelevant to the success of human living. On the other hand, insofar as it neglects other crucial factors, such as public care and social organization, which also contribute to the well-being and freedom of individuals, the approach is deeply limited and defective"*.

[3] See also the cited works of Nietzsche and of Foucault who also approaches the question of power and institutions in a 'genealogical' and 'archaeological' way from our contemporary situation.

money, which humans have discovered as a "stimulus for most efforts" is nothing other than a well polished social institution.

In case of human development, apart from economic institutions for providing material well being of the members of society there are also several institutions important to supply "happiness"[4] to the nations, and among them democracy, the core normatively desirable political institution of our time, plays the central role. Democracy is sometimes thought of as an even more important, determinant of welfare than the purely economic and growth-enhancing institutions. For example, Rodrik (2000) discusses democracy as a meta-institution for building modern institutions. Similarly, Piñeiro et al. (2005) mainly emphasized the importance of economic institutions to explain the growth in transition economies. Institutional factor was discussed along with initial conditions of reforms specific to the sample of observed countries, FDI and democracy.

In this paper the emphasis is on both *political* and *economic* institutions. We also augment our economic institutional analysis by including crucial financial aspects related to the banking sector. In short, we are trying to fill some of the political and financial factors gap in our previous analysis. We hope to contribute in this way to the ongoing theoretical and empirical refinements in this area of research.

Recent studies (Alesina et al. (1997), Alesina and Rodrik (1994), Barro (1991), Grossman and Helpman (1994), Lucas (1988), Mankiw, Romer, and Weil (1992), Pack (1994), Romer (1994) and Solow (1994)) suggest that growth is determined by a much larger set of endogenously determined variables than previously studied. Many authors emphasize the importance of political institutions, particularly that of democracy, for

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[4] Or, more accurately, in Sen's terminology, democracy makes possible 'agency-freedom' for the citizens.

growth acceleration. Generally, as Acemoglu, Johnson and Robinson (2004) document, the institutional factor is more decisive in this period because of new technologies requiring larger investments. Minier (1998) finds that the countries that democratized subsequently grow faster *ex ante* than similar countries that shied away from democratization. Amartya Sen has provided the most dramatic illustration of the superiority of democratic systems, arguing that famines have never occurred in democracies, largely due to the information flows and feedback systems that authoritarian systems lack (Sen, 1999). He argues that development and freedom are intimately related. By freedom Sen means well-being in five categories: political participation, economic well-being, social integration, information access and personal security. Ulukaev (1997) 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 democracy seemingly does not exist in countries with per capita GDP less than $2000.[5,6]

Tavares and Wacziarg (2001) try to disentangle the effect of democracy on growth and conclude that democracy boosts growth because of its favorable effect on the accumulation of human capital and by reducing income inequality. Bekaert, Harvey and

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[5] This requires the important reminder that the statement is an empirical one only. Low per capita GDP may not necessarily lead to a lack of democracy. Like the famous 'all swans are white' proposition such inductive statements are subject to refutation by contrary observations. See H. A. Khan (2003a), "On Paradigms, Theories and Models", for a detailed discussion of the methodological and philosophy of science issues. Substantively, in this case, however, the statement in the text still holds for the most part in a tendential sense.

[6] 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 (Khan 1998,2002).

Lundblad (2004) note that political factors may play an important role in determining the magnitude of the shocks an economy faces and in setting up the institutional framework to help smooth shocks.

However, on the economic side, 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 authoritarianism to democracy seems to be accompanied by falls in institutional efficiency. Helliwell (1994) also suggest that the relationship is negative. Thus, there is no common approach or agreement among the social scientists regarding the theorization and measurement of how exactly democracy affects economic growth. Glaeser et al. (2004) find little evidence of positive impact of political institutions on growth concluding that however there is some second order effect. Authors explain the difficulty of answering the question "do institutions matter?" with problems of measurement of institutions as well as econometric limitations.

The reverse causation between economic growth and political freedom has been discussed and singled out in Barro and Sala-i-Martin (1995), Huber, Rueschemeyer, and Stephens (1993), Levine and Renelt (1992), Levine and Zervos (1993), Przeworski and Limoni (1993) and Solow (1994) specifically concerning the direction and significance of the impact of political freedom on economic growth and the contribution of economic growth, if any, to the enhancement of political freedom. However, following the more holistic theories offered by Sen (1999), Khan (2004a-d, 2003a-c, 1999a-b, 1989),   and

others (Kumssa, 1996; Khan and Thorbecke, 1988) leads one to introduce an entire spectrum of institutional structure and then consider their effect on development. Thus, at a minimum, both economic and political institutions must be considered along with other factors that influence economic growth[7].

Methodologically, in order to address the main aspects of development, we consider both institutional and financial factors in this study. For this purpose, certain quantitative techniques are applied to assess the role of the political meta-institution of democracy and to measure economic efficiency within the framework of economic institutions. These quantitative indicators together with financial efficiency, labor and capital are used to explain economic growth[8]. Finally we discuss 'what does the economy pay for institutions?' and 'how much it is reasonable to pay?' in the context of institutional reforms and resource allocation. Therefore, the paper is organized to derive the indicators in the second part so that the relevant assessments are made for the political (democracy) and economic institutions for the sample of 55 countries. The empirical work using these indicators for explaining growth is presented in the third section. The

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[7] The recently proposed 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 building a technological system can generate demands for more democracy which can then be defended on grounds of both efficiency and equity. Thus a virtuous circular causation process can be unleashed through the process of democratization and technological development.

[8] Since there is a lack of capital stock data for large number of countries, we use data on market capitalization instead, in order to address the relative trends in value of capital (at least for large corporations). To be sure, the indicator reflects only a small part of capital stock. Especially in case of emerging markets; where the corporate sector is often underdeveloped the limitations become especially decisive. In spite of this, the proxy is significant in our empirical model and using it is better than neglecting the factor of capital stock at all, as even the most recent database we for a limited sample of countries only covers the period up to 1992 (William Easterly and Mirvat Sewadeh data at the World Bank).

question of optimal institutions is posed and discussed in the fourth section. Summary and conclusions follow.

2. Constructing proxies

2.1. Democracy measures

While there are several organizations that have assessments for democracy, in this paper we have constructed our own assessments by using estimation procedures based on a probit model. It is motivated by the argument that since democracy is the political meta-institution that shapes the structure of modern institutional framework, we need something more than just so-called 'survey' evaluations[9]. At the same time, one needs some preliminary data on political regimes in different countries in order to assess the role and extent of democracy. Here the freedom statuses reported by Freedom House are the necessary starting point, which allow us to build the binary indicator (see appendix 1).

The goal is to quantify the relationship between the individual characteristics and the probability of occurrence of the event. In our case it will be the probability of having democratic regime in the particular country. As the probability may vary in range of (0-1), we can refer to this number as an indicator of democracy with a higher value indicating greater (prospect for) democracy. Our determinants of democracy were the FDI inflows and the dummy variable for dominant religion and economic development (GDP per capita).

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[9] For detail discussion of three different sets of survey-based institucional assessments see Glaeser et al. (2004).

Busse (2003) indicates that "on average" investments by multinationals are significantly higher in democratic countries. Rodrik (1996) regressed an indicator for democracy (and a number of control variables) on the value of investment by majority-owned United States affiliates abroad. His democracy indicator is statistically significant and the coefficient implies that countries with weaker democratic rights attract less US capital. Harms and Ursprung (2002) found that multinationals are more likely to be attracted by countries in which democracy is respected. Similar to Rodrik, Harms and Ursprung concluded that there is little evidence that weak democracies provide a haven for foreign investors. Yet both studies concentrated their empirical analysis on FDI flows for the 1990s.

There is a vast literature on how religion is related with political institutions. Barro and McLeary (2002) study how economic performance and political institutions are related to religious participation and beliefs. Guiso, Sapienza and Zingales (2003) use survey data to identify the relation between religion and attitudes judged favourable to growth (see also Glaeser and Sacerdote, 2002; Montalvo and Reynal-Querol, 2002). Marx (1844) famously observed that religion is "the opium of people". There also exist various explanations as to how the dominant religion of nations has affected the shape of their institutions (e.g., Putman, 1993 argues that the Catholic Church has fought the State to regulate the citizenry and Huntington, 1991 has explained that since the 1960s it has been a powerful force toward democratization). As the Christian traditions are comparatively liberal and 'enforces' less restrictions of individual freedom, in our dummy variable we consider it as favourable condition for democratization.

The importance of the economic development variable (GDP per capita) has been already discussed at the beginning of our paper.

The fitted values for democracy ('P', see the table 1) are used as a proxy for democracy (political institutions) which is hypothesized to be causally positively related to growth.

INSERT TABLE 1 ABOUT HERE

These assessments, not surprisingly, carry with them the limitations of 'quantitative measurements of qualitative phenomena'. As Sen (1999) argues, current income-based indicators fail to reflect the real level of individual freedom or well-being, because they do not take account of individual circumstances that may enhance or reduce one's ability to make use of one's wealth. Thus real judgments on particular phenomenon are possible only individually and in relative terms. Any alternatives measures, as in case of our series, are conditional proxies for studying existing relationships and regularities.

2.2. Assessing framework of economic institutions

The logic of evaluation of institutions was 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 in this idealized case.

Of course, this is just an assumption, needed for providing the research with relative grounds for comparison.[10] Thus, all institutions vary within the range (0;1).

We used a modification of previously developed index (Piñeiro et al. 2005) to evaluate the formal market institutions. The indicator reflects the share of interaction regulated by the formal rules while the remaining part of relations represents informal ones. Given the standards of relativity adopted above we can call this remaining part, the institutional "deficit". The total "deficit" is represented in the form of the following operational 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.

As one can see the total "deficit" equals 1 minus the aggregate index. Normally "deficit" consists of the traditional (informal) institutions. To reflect the process of economic transition in transition economies our previous work considered also inherited institutions, which are out of scope of this paper.

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[10] 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.

Thus,

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

where:
T   - the traditional (informal) institutions

The traditional (informal) institutions are comparable with shadow economy share in GDP (H/GDP).

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

Previously, we used average shadow economy size in market economies (OECD average) as a comparison ground to arrive the adjusted operational indicator of institutional development (denoted 'E' in this paper) for transition economies (Piñero et al., 2005). Our current sample includes also advanced economies with more efficient institutional frameworks, so we made the benchmark more sample oriented taking the minimum ratio detected within the group of the countries during the period of study.

$$E_{c,t} = \frac{1 - \dfrac{H_{c,t}}{GDP_{c,t}}}{1 - \min\left\{\dfrac{H_{c,t}}{GDP_{c,t}}\right\}} \qquad (4)$$

where:
H   - the shadow economy size
C   - the number of countries in the sample (cross sections)
T   - the point of time

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.

To evaluate 'E' for the sample of the 55 countries we used shadow economy estimates obtained by applying Physical Input (electricity) method to initial measures from Schneider (2003), Schneider (2000), and Eilat and Zinnes (2000) (see appendix 2). Before assessing 'E' the shadow economy estimates in percent of official GDP are brought to percent of total GDP format (as it appears in equation 4).

INSERT TABLE 2 ABOUT HERE

2.3. Additional indicators

The additional indicators used for explaining growth in our empirical model include:

1.GDP in current USD (Source: WDI database/WB).

2.Total labor force. Indicator comprises people who meet the International Labour Organization definition of the economically active population: all people who supply labor for the production of goods and services during a specified period (Source: WDI database/WB).

3.Market capitalization of listed companies (in thousand current US$). Market capitalization (also known as market value) is the share price times the number of shares outstanding (Source: WDI database/WB).

4.Financial Management Efficiency (%): the inverse indicator of bank liquid reserves to bank assets ratio taken from World Development Indicators database (WDI).

3. Explaining economic growth

Our final empirical model includes the following dependent and explanatory variables:

INSERT TABLE 3 ABOUT HERE

Political and economic institutions, and efficient financial management explain growth along with more traditional factors of growth, i.e., labor and capital. Heteroscedasticity adjusted coefficients and statistics are presented below.

INSERT TABLE 4 ABOUT HERE

All the factors are robust to model specification. Note that if the financial management efficiency (F) factor is positively correlated with GDP, for the original inverse indicator of bank liquid reserves/assets ratio the relationship between these variables and growth is negative, which means that the lower is the ratio of high liquidity reserves the higher is GDP in the countries. Thus, in growth acceleration context allocation of the financial sources in long-term projects is more preferable than the high liquidity of the banking sector.

INSERT FIGURE 1 ABOUT HERE

It is interesting to note that democracy in particular, is one of the most significant factors of growth. The same is true for the economic institutions. The comparatively

lower statistical significance of the variable in the model probably can be explained by limitations of physical-input method of shadow economy assessments.

But how actually political and economic institutions, and democracy in particular, can facilitate growth is an issue that deserves further attention. The most obvious link is the favorable conditions for benefiting from international co-operation: attraction of human capital, investments, and so on. Other things being equal, better institutions, which guarantee the investments and properly protect shareholders rights, particularly in case of minority shareholders (see e.g., Piñeiro et al., 2003), are the main incentives for choosing particular economy during investment decisions. Among multiple possible levers that one may consider relating democracy with growth, the impact on saving process must be considered. Discussing the 'optimal rate of saving' Sen (1961, p. 486) writes: "If democracy means that all the people that are affected by a decision must themselves make the decision (directly or through representatives), then, clearly, there can be no democratic solution of the problem of the 'optimum' rate of saving". He notes "… without a certain degree of 'similarity' of the social values of the people, the voting procedure may not give us unambiguous results" (Sen, 1961, p. 489). Thus the level of democratization in particular country yet does not give an idea weather it optimizes the saving process.

Current achievements of development economics can throw more light on the nature of the factor of labor (L). 'Surplus laborforce' in less developed markets, e.g. Indian agriculture, was subject of different studies by Sen(1966a-b, 1960), Stiglits (1969), and others. Recently developed models go deeper into analyses of dual economy and in some cases dual-dual economy equilibrium in partly peasant, partly capitalist

economies.[11] On the other hand the 'surplus resource' term may be applied also for the other factors of growth, e.g. the most traditional factor of capital stock. There is always certain volume of facilities not competitive because of moral depreciation. This volume of capital was especially high in transition economies during the initial stage of reforms. Similar abandoned stock exists also within institutional framework – rules that are never applied. Melikyan (2004) discusses the choice between formal and informal institutions in the model of institutional market, based on their 'cost'. In emerging markets where non-formal rules are often applied during various kinds of social interaction because of 'simplicity' and 'lower transaction costs', many formal norms just remain non applicable.

Thus most factors of growth included in the empirical model may contain a 'surplus', which is rather difficult to estimate, than just to 'consider' assuming that the exploited resources are closely correlated with general stocks.

4. Obtaining optimal stock of institutions

Examining the effects of political and economic institutions on growth should not be interpreted as underestimation of their own role. As we mentioned at the very beginning of the article social institutions are among the most decisive criteria of individual and social well-being. Obtaining good institutions is an achievement by itself. So it is important to understand 'what do we pay for it'. While difficult to go in details empirically, it is simple enough to demonstrate analytically.

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[11] See for example, Khan (2004d) on dual-dual economies and modeling them in a computable general equilibrium (CGE) framework. The role of both rural and urban informal sectors and institutions are emphasized.

Given the Cobb-Douglass production function including the variables in our empirical model $Q = A\,L^l K^k P^p E^e F^f$, the conditions for optimal resource allocation for developing efficient institutional framework can be easily derived.

How does society pay for institutions? Investing money do not reduce the output as the funds remain within the economy and still have multiplication effect, as any other changes in GDP components. Most obvious price the economy pays for building institutions is labor reallocation between transformation and transaction sectors and its consequent reflection on output[12].

To reflect this effect let us make following modifications in Q to use it when reflecting corresponding loss in output because of reduction of labor employed in transformation sector.

$$Q = A\left(L - B_P - B_E\right)^l K^k P^p E^e F^f \tag{5}$$

Where B is the labor employed in 'institutional industry': building and maintaining political (B_P) and economic (B_E) institutions respectively.

The net gain for the state (Ψ) will be:

$$\Psi = \left\{\frac{\partial Q}{\partial P} + \frac{\partial Q}{\partial E}\right\} + \left\{\frac{\partial Q}{\partial B_P} + \frac{\partial Q}{\partial B_E}\right\} \tag{6}$$

This is true for autarkic economy. For open economy labor 'deficit', fully or partially, is covered by 'import' of labor force (M_t). Thus laborforce at time t equals to:

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12. Transformation and transaction sector concepts first distinguished by Wallis and North (1986) are later developed in number of studies (North and Wallis, 1994), Loechel (1995), Bishoff and Bonnet (2000).

$$L_t = L_{t-1} + M_t \tag{7}$$

In the model we immediately include the 'newcomers' in the labor.

Also taking into account the unemployment (U_t) we get

$$Q_t = A \left(L_t - U_t - B_{P,t} - B_{E,t} \right)^l K_t^k P_t^p E_t^e F_t^f \tag{8}$$

The 'institution-building' sectors swallow labor from unemployed laborforce:

$$U_t = U_{t-1} + M_t - \left(U_{E,t} + U_{P,t} \right); \quad B_{P,t} = B_{P,t-1} + R_{P,t} + U_{P,t}; \quad B_{E,t} = B_{E,t-1} + R_{E,t} + U_{E,t} \tag{9}$$

Where $R_{P,t}$ and $R_{E,t}$ are reallocated laborforce swallowed correspondingly by sectors 'producing' political and economic institutions. Similarly $U_{P,t}$ and $U_{E,t}$ denote previously unemployed labor hired by these sectors.

Note that initial inclusion of the labor inflow in unemployed labor is formality, as the consequent movements of labor within the economy are considered at the same point of time (see eq.9). Considering functional dependence between particular institutions and labor

$$P_t = P \left(B_{P,t} \right) \quad and \quad E_t = E \left(B_{E,t} \right) \tag{10}$$

General improvements of institutions due to labor reallocation will be respectively:

$$P' = \frac{\partial P}{\partial B_P} \quad and \quad E' = \frac{\partial E}{\partial B_E} \tag{11}$$

$P'(U_{P,t})$ and $E'(U_{E,t})$ will be free of charge institutional reforms.

Considering dynamics in L_t, it is reasonable to discuss the gains in per unit employed laborforce terms, introducing $\Psi *_t = \Psi_t \big/ (L_t - U_t)$ instead of Ψ (assuming equal distribution of gain among working population at time t). $\Psi *_t \geq 0$ condition prompts the government to continue the institutional reforms. However the surplus in per capita output does not necessarily make it gainful for individual members of society to build better institutions and vise-versa (just from economic point). For the transformation sector insiders' welfare, which normally make the main part of the electorate, it is gainful to continue the reforms and admit outsiders (additional labour) as long as the changes in 'individual satisfaction' $\Omega_t \geq 0$.

$$\Omega_t = \left(\frac{Q_{t-1} + \Psi_t}{L_t - U_t - B_{P,t} - B_{E,t}} \right)\left(1 - \frac{B_{P,t} + B_{E,t}}{L_t - U_t} \right) - \left(\frac{Q_{t-1}}{L_{t-1} - U_{t-1} - B_{P,t-1} - B_{E,t-1}} \right)\left(1 - \frac{B_{P,t-1} + B_{E,t-1}}{L_{t-1} - U_{t-1}} \right) \quad (12)$$

Ceteris paribus, at the time t when $\Omega_t = 0$, the society runs enough good institutions but not yet optimal. There is still reason to continue improvement and enlargement of economy. The policy makers continue maximising their votes by means of providing society with better institutions 'free of charge'. Further improvement of the framework maybe reasonable in political sense until the decreasing function Ω_t becomes negative ($\Omega_t < 0$). After this critical point additional labour reallocation or immigration worsens the quality of life of insiders and may be negatively reflected on the rating of policy makers. Due to efficient labor allocation the insiders get total economic gain in time prospect $t_0 - t_{\Omega=0}$ equal to $\int_{t_0}^{t_{\Omega=0}} \Omega dt$ and society improves the institutions by $\{P(B_{P,t_{\Omega=0}}) - P(B_{P,t_0})\}$ and $\{E(B_{E,t_{\Omega=0}}) - E(B_{E,t_0})\}$ respectively.

5. Summary and conclusions

This paper tests the hypothesis of a positive impact of democratization on growth, economic development and welfare. We use a probit model to estimate the probabilistic indicator for democracy for a large sample of countries. Panel regressions are applied to explain the impact on growth by political institutions (democracy), economic institutions, financial sources in long-term projects with more traditional factors of labor and capital (proxied by market capitalization in our model). The empirical results show that the institutional and financial factors are significant in explaining changes in GDP per capita. Most indicators are significant at 1% confidence level.

Thus, for developing countries both democracy and sound financial management policies in the banking sector are important for generating both growth and capabilities enhancement for the citizens. Finally we must note that all these are necessary conditions rather than the straightforward factors of growth. Their proper combination (existence) is what economy needs for effective utilization of traditional factors of growth. On the other hand the main source to improve these conditions is the growth itself.

From the best allocation of resources viewpoint, it is important to determine the 'optimal' volume of labor in 'institution building industry'. There is a reason to increase the amount of labor in this sector as long as the benefits for the members of society are positive. These gains are formalized through indicators suggested in our analytical model (see the equations 6 and 12). We characterize the conditions under which the society obtains 'optimal' institutions and admits an optimal number of immigrants. Thus, our paper can be viewed as a contribution to the modeling and empirics of "optimal institutions" in this particular context.

Appendix 1
Data description for "democracy database"

	Freedom Status[1] (FS)										Religion[2]
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
Argentina	1	1	1	1	1	1	1	0	0	1	1
Armenia	0	0	0	0	0	0	0	0	0	0	1
Australia	1	1	1	1	1	1	1	1	1	1	1
Austria	1	1	1	1	1	1	1	1	1	1	1
Bangladesh	0	0	0	0	0	0	0	0	0	0	0
Bolivia	1	0	1	1	1	1	1	1	1	0	1
Brazil	0	0	0	0	0	0	0	0	1	1	1
Bulgaria	1	1	1	1	1	1	1	1	1	1	1
Chile	1	1	1	1	1	1	1	1	1	1	1
Colombia	0	0	0	0	0	0	0	0	0	0	1
Costa Rica	1	1	1	1	1	1	1	1	1	1	1
Cote d'Ivorie	0	0	0	0	0	0	0	0	0	0	0
Croatia	0	0	0	0	0	0	1	1	1	1	1
Czech Republic	1	1	1	1	1	1	1	1	1	1	1
Dominican Republic	0	0	0	0	1	1	1	1	1	1	1
Ecuador	1	1	0	0	1	1	0	0	0	0	1
Egypt	0	0	0	0	0	0	0	0	0	0	0
Finland	1	1	1	1	1	1	1	1	1	1	1
France	1	1	1	1	1	1	1	1	1	1	1
Germany	1	1	1	1	1	1	1	1	1	1	1
Ghana	0	0	0	0	0	0	1	1	1	1	1
Greece	1	1	1	1	1	1	1	1	1	1	1
Guatemala	0	0	0	0	0	0	0	0	0	0	1
Honduras	0	0	0	1	1	0	0	0	0	0	1
Hungary	1	1	1	1	1	1	1	1	1	1	1
India	0	0	0	0	1	1	1	1	1	1	0
Indonesia	0	0	0	0	0	0	0	0	0	0	0
Iran	0	0	0	0	0	0	0	0	0	0	0
Israel	1	1	1	1	1	1	1	1	1	1	0
Italy	1	1	1	1	1	1	1	1	1	1	1
Jamaica	1	1	1	1	1	1	1	1	1	1	1
Jordan	0	0	0	0	0	0	0	0	0	0	0
Kazakhstan	0	0	0	0	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0	0	0	0	1
Latvia	1	1	1	1	1	1	1	1	1	1	1
Lithuania	1	1	1	1	1	1	1	1	1	1	1
Malaysia	0	0	0	0	0	0	0	0	0	0	0
Mexico	0	0	0	0	0	0	1	1	1	1	1
Moldova	0	0	0	0	0	0	0	0	0	0	1
Morocco	0	0	0	0	0	0	0	0	0	0	0
Nepal	0	0	0	0	0	0	0	0	0	0	0
Netherlands	1	1	1	1	1	1	1	1	1	1	1
Nigeria	0	0	0	0	0	0	0	0	0	0	0
Norway	1	1	1	1	1	1	1	1	1	1	1
Pakistan	0	0	0	0	0	0	0	0	0	0	0
Panama	1	1	1	1	1	1	1	1	1	1	1

	Freedom Status[1] (FS)										Religion[2]
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
Peru	0	0	0	0	0	0	0	1	1	1	1
Philippines	0	0	1	1	1	1	1	1	1	1	1
Poland	1	1	1	1	1	1	1	1	1	1	1
Romania	0	0	1	1	1	1	1	1	1	1	1
Russia	0	0	0	0	0	0	0	0	0	0	1
Singapore	0	0	0	0	0	0	0	0	0	0	0
Slovakia	1	1	0	0	1	1	1	1	1	1	1
Slovenia	1	1	1	1	1	1	1	1	1	1	1
Spain	1	1	1	1	1	1	1	1	1	1	1
Sri Lanka	0	0	0	0	0	0	0	0	0	0	0
Sweden	1	1	1	1	1	1	1	1	1	1	1
Switzerland	1	1	1	1	1	1	1	1	1	1	1
Tanzania	0	0	0	0	0	0	0	0	0	0	0
Thailand	0	0	0	0	1	1	1	1	1	1	0
Tunisia	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	1	1	1	1	1	1	1	1	1	1	1
United States	1	1	1	1	1	1	1	1	1	1	1
Uruguay	1	1	1	1	1	1	1	1	1	1	1
Venezuela	0	0	1	1	1	0	0	0	0	0	1
Zambia	0	0	0	0	0	0	0	0	0	0	1

Note: 1)The binary indicator (FS) was created based on the "Freedom in the World Country Ratings 1972-73 to 2001-2002" by Freedom House. We grade "1" all the countries with the status "Free", and "0" the countries with "Partially Free" or "Non Free" statuses. Thus the created series can be considered as expert evaluations of democracy by "Freedom House". 2) Relevant to the subject of study a dummy indicator of dominant religion was built based on the information available from The World Factbook 2003. The countries where 50% and higher share of population are Christian were graded "1", while the rest countries got "0" grade. The idea is that Christianity is the best environment for developing democracy than any other belief. Without going deeper and arguing on the details why Christianity, we shall mention that the indicator is one of the most significant ones to explain democracy and allowed to improve our empirical model significantly.

Appendix 2
Shadow economy measures (% of official GDP)

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Argentina	**21.8**	25.6	33.4	35.9	40.0	47.4	52.9	61.7	63.2
Armenia	**108.0***	**80.0***	**74.0***	**93.0***	**65.0***	36.9	37.6	33.1	22.0
Australia	**13.1**	11.4	9.8	7.7	6.1	6.5	4.9	4.5	3.9
Austria	**5.8**	4.1	4.6	6.1	5.4	3.1	3.4	1.9	8.0
Bolivia	**65.6**	72.4	83.8	89.7	105.5	117.8	126.1	125.3	137.8
Brazil	**37.8**	37.1	40.8	43.8	49.3	53.5	55.2	58.6	45.5
Bulgaria	**34.0***	**32.0***	**44.0***	**70.0***	56.4	50.9	36.8	36.9	40.9
Chile	**18.2**	17.6	21.4	27.3	33.7	35.8	51.1	55.5	64.2
Colombia	**35.1**	35.5	35.4	36.9	29.1	22.6	15.4	15.2	18.8
Costa Rica	**23.2**	26.6	23.8	23.8	23.3	24.3	22.0	37.6	30.7
Croatia	**23.5**	21.9	24.5	27.8	34.6	34.3	42.2	41.0	40.0
Czech Republic	**13.4**	16.0	19.1	21.6	20.9	20.0	18.3	19.1	20.9
Denmark	**9.4**	6.9	4.1	3.4	0.5	0.0***	0.0***	0.0***	0.0***
Ecuador	**31.2**	37.9	41.0	52.1	63.3	68.1	57.8	57.7	54.3
Finland	26.0	28.2	24.8	24.0	26.2	26.6	26.5	23.8	25.6
France	**10.4**	9.9	9.4	12.3	10.1	10.7	9.9	8.7	9.3
Germany	**10.5**	7.6	7.4	7.8	7.5	6.6	4.9	7.1	8.6
Greece	**27.2**	31.4	35.3	39.7	43.5	49.8	52.4	59.9	63.0
Guatemala	**50.4**	55.8	59.6	60.6	65.0	69.7	88.6	74.8	86.5
Hungary	**30.7**	30.8	31.3	35.6	33.4	31.1	28.6	27.7	27.5
India	37.9	43.1	45.7	41.4	45.1	46.4	42.1	39.6	39.7
Iran, Islamic Rep.	13.0	14.0	9.7	11.9	15.7	17.2	18.4	**18.9***	22.0
Italy	**20.4**	22.5	23.6	23.7	25.8	27.7	29.3	32.8	33.8
Jordan	23.2	21.7	27.8	29.0	25.4	25.9	21.3	**19.4***	17.6
Kazakhstan	**41.0***	**30.0***	**46.0***	**33.0***	**27.0***	21.7	21.8	24.2	22.8
Kenya	76.0	72.0	68.1	68.7	62.8	62.5	51.0	**34.3***	47.7
Latvia	**40.0***	**35.0***	**38.0***	**39.0***	38.5	37.3	35.1	31.7	29.8
Lithuania	**36.0***	**43.0***	**38.0***	39.4	39.4	36.1	34.0	24.8	26.2
Mexico	**27.1**	32.2	38.6	43.4	48.1	49.6	53.9	59.1	58.0
Moldova	**41.0***	**130.0***	**127.0***	**140.0***	122.7	83.0	48.1	32.3	40.5
Morocco	51.8	55.3	60.1	55.6	62.1	66.7	52.8	67.9	71.1
Nepal	20.5	29.9	29.9	29.6	31.6	32.0	37.5	**38.4***	48.0
Netherlands	**11.8**	12.1	11.3	12.4	12.5	12.3	10.4	10.6	10.6
Nigeria	116.2	102.5	93.1	92.7	90.0	59.8	54.8	50.5	80.9
Norway	**5.9**	1.4	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***
Peru	**57.4**	53.9	52.2	62.4	65.3	74.9	78.3	84.1	90.7
Philippines	45.4	59.0	66.2	76.9	87.1	96.8	88.8	100.3	105.4
Poland	**20.3**	14.0	13.5	13.0	8.0	1.3	0.0***	0.0***	0.0***
Romania	**16.0**	5.2	5.4	12.0	13.7	12.8	5.8	5.0	7.8
Russian Federation	**35.0***	**45.0***	**53.0***	**54.0***	**52.0***	51.8	53.1	52.8	53.7
Singapore	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***
Slovak Republic	**19.0***	**16.0***	**11.0***	**18.0***	10.1	0	4.0	0	0
Slovenia	**30.0***	**33.0***	**35.0***	**34.0***	36.1	37.0	37.3	35.9	40.4
Spain	**16.1**	19.9	20.7	24.1	29.9	31.8	37.7	42.9	50.0
Sri Lanka	59.1	72.1	77.0	70.9	91.0	104.6	114.7	137.3	130.2
Sweden	**10.6**	7.3	4.7	4.8	2.3	0.0***	0.0***	0.0***	0.0***
Switzerland	**6.9**	5.2	5.6	5.6	3.2	2.7	5.3	2.4	4.0

Appendix 2 *(Continued)*

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Tanzania	28.5	27.0	34.3	43.5	31.2	35.6	23.3	23.0	20.4
Tunisia	53.9	62.8	65.7	65.5	72.4	80.2	98.9	105.0	116.0
Turkey	6.7	1.7	3.1	2.8	9.3	21.7	16.3	**32.1****	33.7
United Kingdom	**7.2**	1.4	2.0	4.0	1.4	0.0***	0.0***	0.0***	0.0***
United States	**13.9**	12.2	11.3	9.4	5.8	4.1	1.7	0.3	0.0***
Uruguay	50.5	50.2	58.6	61.4	70.3	76.9	85.9	91.5	90.3
Venezuela, RB	**30.8**	29.2	27.4	27.7	25.3	25.2	26.0	25.8	27.2
Zambia	122.4	126.4	106.0	94.0	84.2	65.7	61.3	**48.9****	50.8

Source: Authors own estimations based on the "initial information" from previous estimations by other authors. The bold and highlighted figures represent the "borrowed" estimates. The countries where the available initial estimates referred to 1989-1990 picked from Schneider (2000) are not reflected in the table. By default the initial estimates are made by different authors reflected in Schneider (2000). The marked (*) figures are the measures by Yair et al. (2000). Figures marked with (**) are from Schneider (2003). The Panel estimates were arrived based on Physical Input (electricity) method (Kaufmann and Kaliberda (1996)), which is suitable in terms of data availability. Negative outcomes of Physical Input method are replaced with 0 (***). Electric power consumption data was taken from WDI database.

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Table 1
Fitted Values of the Probit Model for Democracy [a] (P)

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Argentina	0.847	0.855	0.876	0.900	0.904	0.922	0.907	0.867	0.845
Armenia	0.088	0.134	0.139	0.180	0.269	0.270	0.298	0.327	0.401
Australia	0.964	0.975	0.972	0.977	0.979	0.979	0.986	0.984	0.990
Austria	0.967	0.968	0.977	0.977	0.983	0.983	0.990	0.989	0.981
Bolivia	0.196	0.245	0.258	0.290	0.311	0.315	0.311	0.318	0.324
Brazil	0.609	0.639	0.686	0.724	0.746	0.764	0.781	0.785	0.783
Bulgaria	0.591	0.600	0.591	0.642	0.656	0.687	0.733	0.757	0.762
Chile	0.741	0.773	0.814	0.835	0.841	0.855	0.845	0.865	0.845
Colombia	0.627	0.627	0.687	0.721	0.694	0.653	0.690	0.705	0.703
Costa Rica	0.701	0.720	0.731	0.747	0.789	0.836	0.816	0.814	0.827
Croatia	0.614	0.650	0.750	0.787	0.820	0.841	0.848	0.873	0.872
Czech Republic	0.866	0.904	0.905	0.907	0.926	0.939	0.944	0.953	0.962
Ecuador	0.367	0.359	0.373	0.401	0.421	0.406	0.434	0.462	0.470
Finland	0.952	0.950	0.957	0.970	0.984	0.981	0.988	0.985	0.988
France	0.962	0.968	0.969	0.972	0.977	0.982	0.984	0.987	0.987
Germany	0.954	0.961	0.957	0.968	0.975	0.983	0.990	0.982	0.985
Greece	0.878	0.885	0.894	0.904	0.710	0.913	0.936	0.949	0.899
Guatemala	0.319	0.339	0.347	0.361	0.468	0.413	0.444	0.479	0.413
Hungary	0.814	0.867	0.855	0.877	0.890	0.901	0.912	0.926	0.910
India [b]	0.006	0.010	0.013	0.016	0.017	0.019	0.022	0.029	0.029
Iran	0.023	0.056	0.061	0.085	0.072	0.088	0.100	0.105	0.120
Italy	0.941	0.956	0.954	0.958	0.958	0.969	0.978	0.981	0.982
Jordan	0.033	0.051	0.054	0.110	0.105	0.093	0.132	0.092	0.088
Kazakhstan	0.081	0.082	0.092	0.106	0.105	0.135	0.168	0.234	0.261
Kenya	0.015	0.028	0.022	0.030	0.030	0.031	0.041	0.033	0.032
Latvia	0.615	0.616	0.674	0.729	0.740	0.761	0.793	0.794	0.844
Lithuania	0.570	0.635	0.698	0.769	0.828	0.810	0.819	0.848	0.877
Mexico	0.745	0.738	0.749	0.777	0.788	0.797	0.820	0.834	0.815
Moldova	0.076	0.094	0.077	0.107	0.099	0.089	0.116	0.123	0.139
Morocco	0.059	0.044	0.055	0.073	0.065	0.085	0.068	0.117	0.082
Nepal	0.000	0.000	0.002	0.002	0.002	0.000	0.000	0.000	0.002
Netherlands	0.968	0.974	0.979	0.980	0.989	0.990	0.993	0.993	0.992
Nigeria	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002
Norway	0.985	0.986	0.989	0.991	0.993	0.995	0.995	0.993	0.989
Peru	0.525	0.542	0.563	0.567	0.553	0.571	0.542	0.560	0.615
Philippines	0.396	0.405	0.420	0.431	0.460	0.450	0.469	0.468	0.479
Poland	0.686	0.736	0.765	0.795	0.825	0.847	0.870	0.870	0.869
Romania	0.561	0.606	0.613	0.665	0.665	0.645	0.654	0.687	0.706
Russia	0.548	0.594	0.600	0.647	0.632	0.687	0.710	0.726	0.754
Singapore	0.732	0.761	0.776	0.800	0.779	0.819	0.849	0.835	0.834
Slovakia	0.772	0.783	0.819	0.817	0.865	0.864	0.914	0.919	0.941
Slovenia	0.856	0.872	0.889	0.917	0.917	0.914	0.931	0.956	0.972
Spain	0.930	0.927	0.934	0.942	0.956	0.963	0.975	0.976	0.979
Sri Lanka	0.030	0.026	0.035	0.056	0.051	0.056	0.064	0.064	0.074

Table 1 *(Continued)*

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Sweden	0.963	0.973	0.967	0.976	0.982	0.989	0.988	0.987	0.987
Switzerland	0.980	0.979	0.981	0.985	0.987	0.989	0.992	0.991	0.988
Tanzania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Thailand	0.152	0.191	0.218	0.244	0.244	0.249	0.244	0.266	0.229
Tunisia	0.141	0.129	0.144	0.170	0.203	0.200	0.251	0.253	0.279
Turkey	0.109	0.126	0.136	0.157	0.165	0.152	0.178	0.212	0.188
United Kingdom	0.954	0.966	0.971	0.976	0.981	0.984	0.988	0.986	0.983
United States	0.979	0.982	0.986	0.988	0.991	0.993	0.994	0.993	0.989
Uruguay	0.723	0.718	0.735	0.753	0.779	0.788	0.795	0.799	0.750
Venezuela	0.602	0.612	0.650	0.712	0.697	0.637	0.662	0.667	0.564
Zambia	0.017	0.020	0.026	0.030	0.030	0.029	0.029	0.027	0.038

Note:
a) The fitted values are obtained from the panel probit model with Freedom House Status (FS) as dependent and logarithm of GDP per capita, Religion and logarithm of FDI inflows as independent variables

Log(GDP per capita)	2.694** (5.80)
Log(FDI inflow)	0.276* (1.97)
Religion	1.213* (1.99)
Constant Term	-11.065* (-5.73)

N. obs. = 603, N. cross section = 67, Pseudo-R2 = 0.498, Wald chi-sqr.(3) = 36.64
The fitted values for only 55 of 67 countries (the countries dropped from the reported sample include Bangladesh, Cote d'Ivorie, Dominican Republic, Egypt, Ghana, Honduras, Indonesia Israel, Jamaica, Malaysia, Pakistan, Panama, for which there are different data limitations during the next step of research) are reported in the table, which we use in further analyses explaining growth.
The z-statistics are given in the parentheses. All the factors were significant at 5% confidence level.
** Significant at 1% confidence level, * Significant at 5% confidence level.
Data on binary indicators of FS and Religion constructed by the authors are reflected in the appendix 1.

b) The assessment above lead to unreliable results for India, which was granted "free status" by Freedom House since 1998. The danger of unreliable measurement of political institutions' efficiency in policy outcome based approaches was pointed by Glaeser et al (2004). This requires the important reminder that the statement is an empirical one only. Low per capita GDP may not necessarily lead to a lack of democracy, as the Indian case shows. Like the famous 'all swans are white' proposition such inductive statements are subject to refutation by contrary observations (see Khan, 2003a) for a detailed discussion of the methodological and philosophy of science issues. Substantively, in this case, however, the statement in the text still holds for the most part in a tendential sense.

Table 2
Institutional framework efficiency measures (E)

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Argentina	0.821	0.796	0.75	0.74	0.71	0.68	0.654	0.62	0.613
Armenia	0.481	0.556	0.57	0.52	0.61	0.73	0.727	0.75	0.82
Australia	0.884	0.898	0.91	0.93	0.94	0.94	0.953	0.96	0.962
Austria	0.945	0.96	0.96	0.94	0.95	0.97	0.967	0.98	0.926
Bolivia	0.604	0.58	0.54	0.53	0.49	0.46	0.442	0.44	0.421
Brazil	0.726	0.729	0.71	0.7	0.67	0.65	0.645	0.63	0.687
Bulgaria	0.746	0.758	0.69	0.59	0.64	0.66	0.731	0.73	0.71
Chile	0.846	0.85	0.82	0.79	0.75	0.74	0.662	0.64	0.609
Colombia	0.74	0.738	0.74	0.73	0.77	0.82	0.867	0.87	0.842
Costa Rica	0.812	0.79	0.81	0.81	0.81	0.8	0.82	0.73	0.765
Croatia	0.81	0.82	0.8	0.78	0.74	0.74	0.703	0.71	0.714
Czech Republic	0.882	0.862	0.84	0.82	0.83	0.83	0.845	0.84	0.827
Denmark	0.914	0.936	0.96	0.97	1	1	1	1	1
Ecuador	0.762	0.725	0.71	0.66	0.61	0.59	0.634	0.63	0.648
Finland	0.793	0.78	0.8	0.81	0.79	0.79	0.79	0.81	0.796
France	0.906	0.91	0.91	0.89	0.91	0.9	0.91	0.92	0.915
Germany	0.905	0.93	0.93	0.93	0.93	0.94	0.953	0.93	0.921
Greece	0.786	0.761	0.74	0.72	0.7	0.67	0.656	0.63	0.613
Guatemala	0.665	0.642	0.63	0.62	0.61	0.59	0.53	0.57	0.536
Hungary	0.765	0.764	0.76	0.74	0.75	0.76	0.778	0.78	0.785
India	0.725	0.699	0.69	0.71	0.69	0.68	0.704	0.72	0.716
Iran, Islamic Rep.	0.885	0.877	0.91	0.89	0.86	0.85	0.845	0.84	0.82
Italy	0.831	0.816	0.81	0.81	0.8	0.78	0.774	0.75	0.748
Jordan	0.812	0.822	0.78	0.78	0.8	0.79	0.825	0.84	0.85
Kazakhstan	0.709	0.769	0.68	0.75	0.79	0.82	0.821	0.81	0.815
Kenya	0.568	0.581	0.59	0.59	0.61	0.62	0.662	0.74	0.677
Latvia	0.714	0.741	0.72	0.72	0.72	0.73	0.74	0.76	0.771
Lithuania	0.735	0.699	0.72	0.72	0.72	0.73	0.746	0.8	0.792
Mexico	0.787	0.756	0.72	0.7	0.68	0.67	0.65	0.63	0.633
Moldova	0.709	0.435	0.44	0.42	0.45	0.55	0.675	0.76	0.712
Morocco	0.659	0.644	0.62	0.64	0.62	0.6	0.655	0.6	0.584
Nepal	0.83	0.77	0.77	0.77	0.76	0.76	0.727	0.72	0.675
Netherlands	0.894	0.892	0.9	0.89	0.89	0.89	0.906	0.9	0.905
Nigeria	0.463	0.494	0.52	0.52	0.53	0.63	0.646	0.66	0.553
Norway	0.944	0.986	1	1	1	1	1	1	1
Peru	0.635	0.65	0.66	0.62	0.6	0.57	0.561	0.54	0.524
Philippines	0.688	0.629	0.6	0.57	0.53	0.51	0.53	0.5	0.487
Poland	0.831	0.877	0.88	0.89	0.93	0.99	1	1	1
Romania	0.862	0.951	0.95	0.89	0.88	0.89	0.945	0.95	0.928
Russian Federation	0.741	0.69	0.65	0.65	0.66	0.66	0.653	0.65	0.651
Singapore	1	1	1	1	1	1	1	1	1
Slovak Republic	0.84	0.862	0.9	0.85	0.91	1	0.962	1	0.986
Slovenia	0.769	0.752	0.74	0.75	0.73	0.73	0.728	0.74	0.712
Spain	0.861	0.834	0.83	0.81	0.77	0.76	0.726	0.7	0.667
Sri Lanka	0.628	0.581	0.56	0.59	0.52	0.49	0.466	0.42	0.434
Sweden	0.904	0.932	0.95	0.95	0.98	1	1	1	1

Table 2 *(Continued)*

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Switzerland	0.935	0.95	0.95	0.95	0.97	0.97	0.949	0.98	0.961
Tanzania	0.779	0.788	0.74	0.7	0.76	0.74	0.811	0.81	0.831
Tunisia	0.65	0.614	0.6	0.6	0.58	0.55	0.503	0.49	0.463
Turkey	0.937	0.983	0.97	0.97	0.91	0.82	0.86	0.76	0.748
United Kingdom	0.933	0.987	0.98	0.96	0.99	1	1	1	1
United States	0.878	0.891	0.9	0.91	0.95	0.96	0.984	0.997	1
Uruguay	0.665	0.666	0.63	0.62	0.59	0.57	0.538	0.52	0.526
Venezuela, RB	0.765	0.774	0.79	0.78	0.8	0.8	0.794	0.79	0.786
Zambia	0.45	0.442	0.49	0.52	0.54	0.6	0.62	0.67	0.663

Source: Our own estimates.

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Table 3
The variables in the model

Indicator	Definition	Proxy
Q	GDP in current USD	-
L	Labor force	-
K	Market capitalization	A proxy for capital stock
P	Assessment for democracy	A proxy for the framework of political institutions
E	Institutional efficiency	A proxy for the framework of economic institutions
F	Financial Management Efficiency: Indicator of bank non-liquid assets share in total assets	An inverse variable for the bank liquid reserve/bank assets ratio

Table 4
GLS estimates of empirical model

Dependent Variable: Log(Q)

Factors	Estimates
Log(L)	0.656**
	(3.679)
Log(K)	0.050**
	(4.310)
Log(P)	0.179**
	(4.814)
Log($E^{[2]}$)[a]	0.242*
	(2.433)
Log(F)	0.200*
	(2.206)
Adj. R-sq.	0.932
F (model test)	1302.3
Prob.	0.00
F-stat (Sig.of group effects)	87.4[b]
F-crit. (54df, 354df,1%)	1.56
Fixed vs. Random Effects (Hausman test)	186.9[c]
Chi-sq. crit (5df,5%)	11.07
Chi-sq. stat (White test)	50.2[d]
Chi-sq. crit (11df,1%)	24.7
Total panel obs.	414
Obs. in cross sections	8

Note:
a) One year lag is considered.

b) $H_0 : b_{11} = ... = b_{n1}$ of common constant term is rejected.
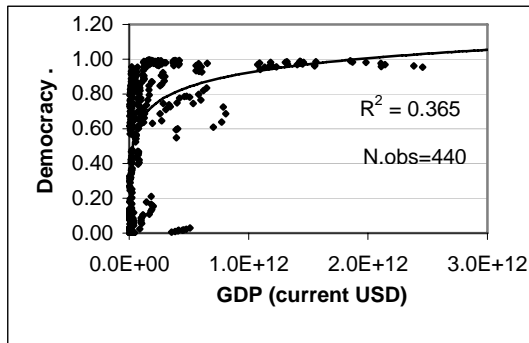
c) H_0 of consistent random effects estimator is rejected.
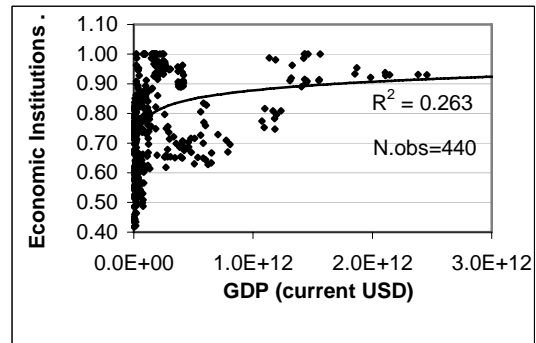
d) H_0 of homoskedasticity is rejected.

t-stats. are given in the parentheses.
Fixed effects are not reported (they may be provided upon request).
** significant at 1%, * significant at 5% confidence level.

(a)   (b)

Figure 1. Impact of institutional factors on growth

Note: The observations for USA, while included in the sample, are out of charts because of huge differences in GDP.