



Institutions, Democracy and Growth: A Long Run Analysis

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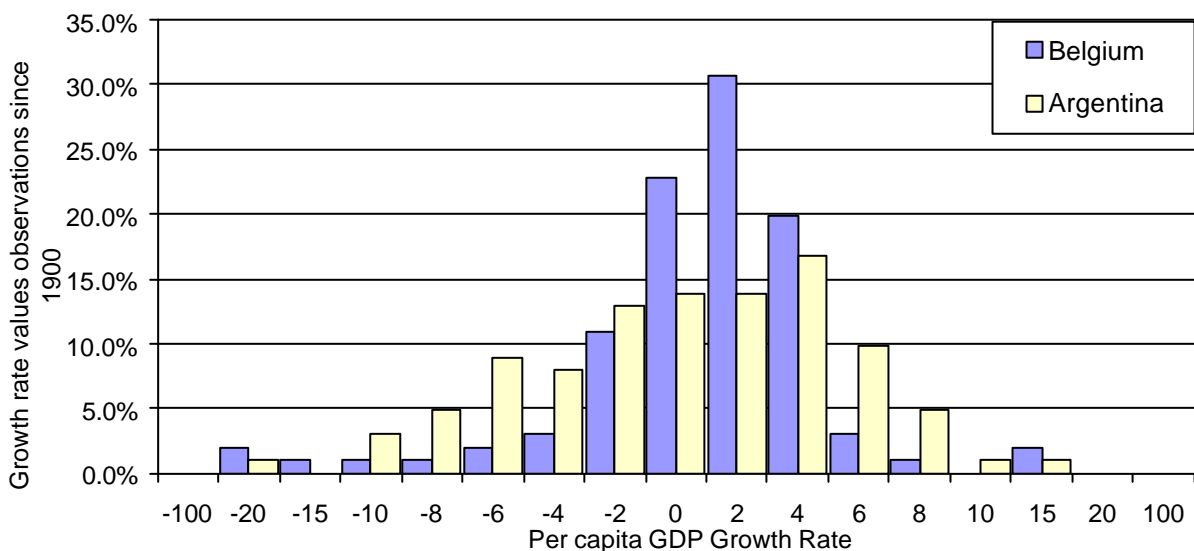
Introduction

In this paper – based on our past research – we have set ourselves the goal of testing the following hypothesis. Our basic assumption is that the fundamental precondition for the due protection of private property is personal immunity in the broad sense, i.e. guarantees of rights such as the protection of life, personal freedoms and the inviolability of private property, including the requisite institutions for the enforcement of the same, often conceived of in political terms.

The growth spurts achieved in authoritarian countries proved to be unsustainable. Rule of Law regimes which provide personal immunity and property guaranties for all economic agents consistently outperform all competing forms of socio-political organization in the Long Run. Indeed, these countries have always proved to be the source and accelerant for growth in all other economies, providing them with knowledge, capitals, and sometimes, by exporting their advanced institutions to underdeveloped countries.

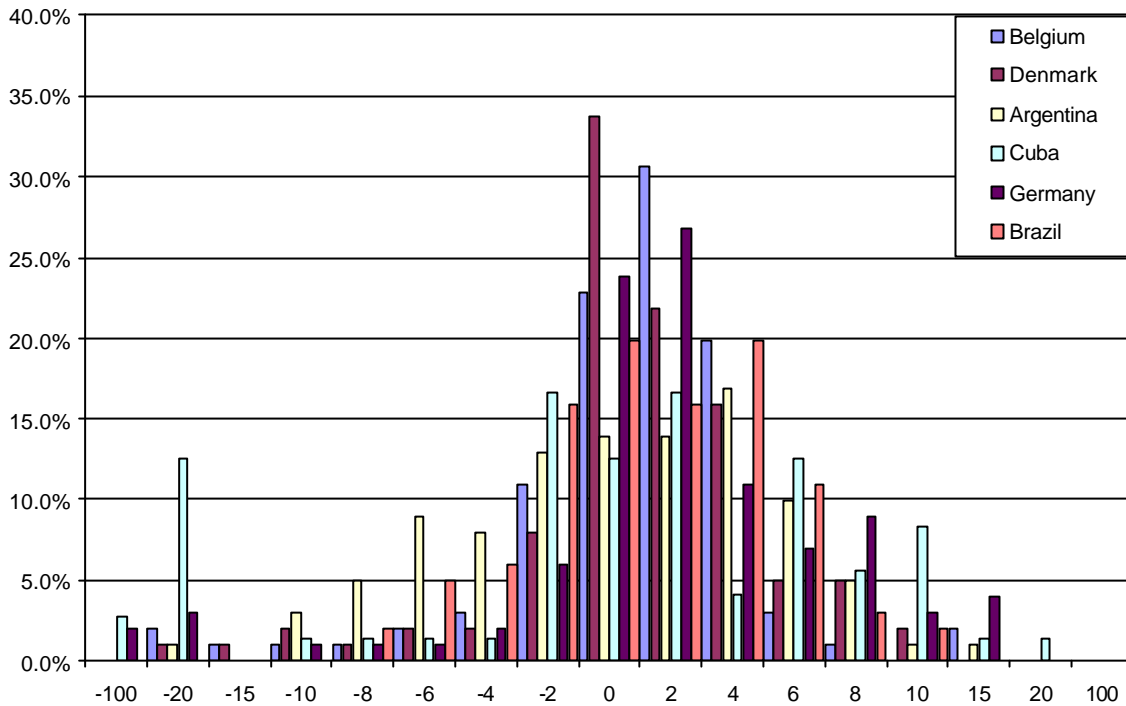
Figure 1 shows historical economic growth sustainability – how often the country in question increased its per capita GDP yearly at a sustainable rate¹.

For instance, taking the cases of Belgium and Argentina, with yearly growth rate observations for a period of 101 years: depressions greater than -20% – 0 instances for both countries; -20 to -15% a year – two instances in the case of Belgium and one in the case of Argentina; -15 to -10% – once instance in the Belgian case etc. The graph clearly shows that Argentina more often achieved yearly growth rates exceeding 6%, but suffered depressions more frequently as well.



¹ For the period 1900 - 2001 (Maddison, 2003)

Figure 2 shows the cases of two Rule of Law democracies, Belgium and Denmark, as compared to two catch-up development cases, Cuba and Argentina. The figures clearly demonstrate that the probability of depression for a Rule of Law democracy is significantly lower than for catch-up developing countries. The probability of remarkable boom for Rule of Law countries is also seen to be lower.



To date, history has provided no basis to suggest that any favorable “starting conditions”, or “initial capital”, or “impulse” are capable of securing long term economic growth over a period of centuries (with average rates of 1.5 – 2% or more per capita GDP growth) in the absence of “reasonable laws”². This inquiry can therefore be largely reduced to the question of which laws are to be regarded as reasonable, and what package of such laws might be said to constitute a satisfactory, or at least minimal, prerequisite for growth.

In the course of our research we had to formulate certain definitions and concepts.

Constitution — a set of basic values and norms, deeply rooted and accepted by an overwhelming majority of agents,³ relating to the interaction between these agents, as well as to their responsibilities and rights and their relationships with Government, both formal and informal, which can either be altered only at great cost⁴, or not be altered at all⁵.

² 1.5% over a period of 180 years would have been sufficient to transform a country, not affluent even by the standards of the late 18th century (such as China with a per-capita GDP of 600 USD in 1990), into a country of a medium level of development (like the Czech Republic or Argentina). At a rate of 2%, however, it would have taken 200 years for an extremely backward African country with a per-capita GDP of 400 USD in the early 19th century to become a highly developed one, with a per-capita GDP exceeding that of France, Finland and Belgium in 2000.

³ It follows that such norms are those that may be employed with minimum (close to zero) cost.

⁴ Such changes take decades, at a minimum.

⁵ The Biblical values which lay at the foundation of American institutions, for example, cannot be altered. In accordance with the above definition, changes to the US Constitution—not as a formal judicial act, but rather as an aggregate of

Rule-of-Law (RoL) societies and countries — societies governed in accordance with well known and published legal norms, based on the priority of the fundamental rights and freedoms of the individual over collective and state interests, providing the necessary guarantees of such rights and the implementation thereof, including by force.

Among such guarantees is the independence of the courts, provided for by laws and traditions, and evidenced by the fact that the State, represented by high officials and agencies, can not infrequently lose in a socially significant and widely publicized case to an individual citizen (many such examples may be easily accessed in press archives). An example of this is the US Supreme Court's decision on the illegality of procedures for detaining terrorists at the Guantanamo military base,⁶ which created serious problems for the US administration.

Rule-of-Force countries — regimes the “legitimacy” of which are based exclusively on their ability and readiness to resort to violence, and their application of force in critical situations. In such societies, institutionalized laws and norms are replaced by “direct action” mechanisms, such as law enforcement agencies endowed with extraordinary powers and discretion which are above and beyond the law.

Basic individual⁷ rights and freedoms — such as private property ownership, including the freedom of entrepreneurship and pricing in the sphere of trade; personal immunity in the broad sense, including the right to life; the inviolability of persons publicly criticizing the authorities or professing religious values not approved of by the authorities. These principles correspond to the “natural rights” as developed by J. Locke.

Basic institutions — law-enforcement structures guaranteeing the implementation of basic rights and freedoms; an independent judiciary (such as the non-removal of judges from office, the prohibitively high cost of so doing) etc.; the transparency of law enforcement agencies (judicial sanction of arrest etc.).

Free elections — it must be stressed that elections can only be so described where they take place under conditions of formal and actual freedom of unions, freedom of expression (evidenced by the existence of an opposition press, radio and TV⁸), and where personal immunity is upheld in practice⁹.

Revealed demand for such institutions — evidenced by actions undertaken by the public or part thereof aimed at acquiring or defending certain institutions, e.g. participation in mass actions demanding the introduction or abolishment of certain norms¹⁰.

norms—cannot be implemented in the medium term period. This is due to the fact that such amendments require the rather inert “soft infrastructure” to be changed. A majority of American leftists still consider voting rights to be linked to the payment of taxes—i.e. that “taxation” and “representation” are still inextricably related—despite the fact that said linkage was formally abolished by the 24th Amendment in 1964.

⁶ The decision on the *Hamdan vs. Rumsfeld case, 04-702*; the decision was announced on June, 29 2006.

⁷ We of course reject the propagandist clichés concerning so-called “national” or “collective” “class” rights.

⁸ The press is deemed to be an opposition force when it accuses the head of executive authority of illegal or immoral actions, or of inefficiency detrimental to society and country, or of inappropriate execution of his or her responsibilities in view of which he or she should be impeached or defeated in the coming elections — see Mau, Yanovskiy et al, 2007.

⁹ Otherwise, the most effective electoral strategy would be that practiced by R. Taylor in Liberia: “He killed my Ma, he killed my Pa, I’ll vote for him” (see comment by Yanovskiy, Shulgin, Zatkovecky, 2007).

¹⁰ As an action considered, for example, voting for the party, supporting or opposing to establishment of certain institutions, respective political activism (electoral campaign volunteering, donating, etc). The parties are formally classified according to their relationship to the Basic Institutions.

The Question of Dependence and Causality

The choice and elaboration of the essential set of institutions required for the support of long-term economic growth, as described by A. Smith, is still among the most fundamental problems of economic science.

M. Olson pointed to freedom as a key precondition for economic growth, in as much as it tends to provide long-term transaction guarantees against even stationary bandit discretion. A number of researchers (W.Wo, O.Davis) have concluded that the existence of some causal relationship is unclear. Further research and discussion are therefore needed in order to bring this discussion to a conclusion.

The task of catch-up development still confronts the majority of mankind. It is for this reason that taking the long view, a detailed description of more or less reliable routes and trajectories of such development is to be considered a matter of the utmost importance. In order to achieve this it is necessary to answer the following question: what needs to be copied, built, developed or obtained in some other way (capital, knowledge, reasonable laws, etc...) in order that an economy may embark on a course of long-term growth at a sustainable and stable rate, exceeding that of developed countries. Or are, perhaps, the institutions of rule-of-law democracies and notions of personal liberties simply luxuries available only to the rich?

An analysis of the recent history of post-socialist countries, together with comparative institutional analyses covering a lengthy period of economic history (the last century), would seem to provide an answer to these questions. Successful catching-up cannot be guaranteed by an influx of capital (or investments) alone. Nor is the import (or stealing) of know-how and technologies sufficient in and of itself. Without the importation of efficient institutions, such steps will ultimately prove unproductive.

Which institutions are efficient? Under what conditions? Based on earlier studies of data concerning institutions in post-communist countries, as well as on the basis of data pertaining to current Russian institutions (*Mau, Yanovskiy, 2002; Mau, Yanovskiy, Zhavoronkov, 2003*), we have arrived at the following conclusions. It is indeed possible to experiment with legislation relating to entrepreneurship (registration, licensing and bankruptcy), taxation or regulation of the stock market, as well as many other factors. However, the effect of these steps has been found to be rather limited during the first decades of transition. At the same time it is apparent that there is no room for compromise with regard to the accelerated establishment and constant strengthening of the basic institutions which are conducive to a combination of private property rights and the rights and inviolability of the individual (personal immunity in the broad sense).

These conclusions were arrived at, in the first place, on the basis of comparative analysis (including statistical analysis) of institutions in post-communist countries during the 1990s (*Mau, Yanovskiy, Zhavoronkov et al., 2003*).

The question of the influence of institutions on economic growth, other than that exerted by the institution of private property regarding which there is broad consensus, is generally examined on the basis of a larger number of countries than the number of post-communist nations. The circle of researchers dealing with this issue has been steadily expanding in recent decades.

R. Barro (*Barro, 1999*) stressed the issue of the rule of law (Rule of Law Index which is based on ratings and on expert opinion) and (1999, (2)) based his analysis on the Lipset's (1994) vision of the Democracy origins. Lipset supposed that the Democracy is caused and supported by sustainable economic development and political culture maturity.

Later, K. Okui (*Okui, 2005*) demonstrated the absence of a statistical connection indicating the interdependence of political and economic rights. The same view is shared by W. Wo, whose conclusions are based on his methodology for analyzing and testing mutual influence and causality (*Wo, 2005*). It should be noted that the absence of a statistical connection may be explained by the existence of complex cause-effect relationships between institutions and economic growth.

It is vital to note that the relative importance and direction of causality may vary from one society to another due to different levels of development. According to a number of researchers, the demand for institutions typical of rule-of-law democracies tends to take root among a significant percentage of the population only after a sufficiently high level of per-capita GDP has been achieved (*V. Mau and I. Starodubrovskaja, 2001*).

As noted above, Olson, who was convinced that the direction of causality is from democracy to economic growth, described one of the causes of this phenomenon (*Olson, 2000*). Long-term and complex transactions are sensitive to risk, to institutional peculiarities etc., and it is therefore essential that property rights are protected by ironclad guarantees which can only be ensured in a rule-of-law democracy. It follows, therefore, that persons who have achieved a certain level of economic success cannot continue to thrive when confronted by institutional limitations.

At the individual level, a more obvious rationale leading to a demand for such institutions is the necessity to protect the level of wealth and the accumulated resources already attained; the more numerous the people with high incomes and substantial property, the higher the demand for such institutions¹¹. The driving power behind, and indeed the leaders of, the English and American Revolutions were landowners. An awareness of these issues motivated the Finnish elite to redistribute portions of their estates in favor of the exiles from the Karelian Isthmus¹² in order to prevent their de-socialization and political marginalization. Also, many politicians viewed the growth of a class of property owners favorably, seeing them as natural supporters of the irreversibility of market and democratic reforms.

Next, we shall endeavor to single out those scientific schools and research centers where research into the impact of institutions on the economy has, in our view, produced significant results.

The first is the school of classical liberals who congregate around the Cato and Fraser Institutes. Some of these researchers participated in the development of the economic freedom index. These indices are useful when attempting to evaluate the various theses regarding the causality of economic growth by economic and other freedoms. In *Institutions and the Impact of Investment on Growth*, a report presented at the 2005 Annual Meeting of the Public Choice Society in New Orleans, Gwartney and his colleagues (*Holcombe, Gwartney, Lawson, 2005*) substantiate the existence of an influence exerted by qualitative institutions (measured by the Economic Freedom of the World Index – EFW) on economic growth by means of investments (predominantly private). In their work they apply the index of economic freedom (EFW) to data on economic growth during the period 1980-2000.

¹¹ Thus, the stipulations of the Coase theorem concerning the presence of well-established property rights and zero transaction costs are predicated on the existence of a strong rule-of-law State (or the necessity of its presence for achieving the optimum, outside the dependence on the initial distribution, which already exists under *rule-of-law democracy*).

¹² Eric Solsten and Sandra W. Meditz, editors. *Finland: A Country Study*. Washington: GPO for the Library of Congress, 1988 <http://countrystudies.us/finland/77.htm>

The largest and the most well financed project of this sort were funded by the World Bank over a period of 11 years. The data for the institutions quality assessment included political stability and the existence of a Rule of Law state based on public polls¹³ and experts' evaluations (see Kaufmann et al, 2007). This is a clear indication that the WB's board places considerable stock in the hypothesis of the direct causality of institutions' quality on the economic growth rate.

Another is the center founded by Olson, the IRIS. (Since the death of its founder, P. Murrell and L. Polishchuk have been its leading researchers). Their research methodology is similar to that of the Institute for Economy in Transition (IET). Specifically, they use judicial statistics and take note of calculable indicators as opposed to indicators based on expert assessments. Olson himself is firmly convinced that growth is favorably impacted by rights and freedoms.

In their investigations regarding the impact of institutions on economic growth, Shleifer and his colleagues have focused on the institutions directly related to guarantees of private property, the financial market, judicial procedures (common and codified or "civil law") etc. At the same time, they also devote their attention to such basic institutions as the freedom of speech (*Shleifer, Djankov et al., 2002*). These researches broadly apply the standard indices of economic freedom based on the assessments of experts, as well as on a sample based on a very large number of countries which frequently distorts these assessments. (Thus, the differences between legal regulation in Switzerland and the USA are known to be much less than those between Switzerland and, for example, Syria, although both Switzerland and Syria are countries where continental law applies).

D. Asemoglu and his colleagues conduct research based on historical context, which increases the comparability of analyses. The colonists' survivability index, quoted so frequently as an indication of institutional leadership that it has almost become a classic, is too complex and includes too many variables. The assertion of its critics (*Shleifer et al., 2004*), however, that the key factor of the advantages enjoyed by the USA, Australia, Canada and other "white" colonies may be human capital and not institutional, is equally vulnerable. During the historical periods under consideration, the advantages of the Europeans with regard to education, production skills, and the mastering of technologies over the Indians, Arabs, or the Chinese are far from being clear cut. Even the settled tribes of Native Americans, as early as the 16th and 17th centuries, frequently demonstrated superior skills (particularly in the field of agriculture, where their advantage was very considerable) as compared to the first European colonists. There can be no doubt, however, that the abilities of the Europeans in the fields of self-organization, coordination of action and the establishment of efficient institutions based on well established moral principles were the secret of their success. The line dividing between the institutional component and that of human capital seems therefore to be rather vague.

It goes without saying that the authors and research centers mentioned above are not the only ones who have obtained noteworthy results in this field.

The problem faced by the majority of the above listed authors (the least affected by it are Shleifer and his colleagues, and the IRIS-Center) is the reliance on indices which, although authoritative, are based on the assessment of experts and on ranking technologies.

¹³ The poll estimates the confidence in the police, judicial system and personal experience as the crime victim. Other indicators were defined by the consulting experts.

The IET's approach to institutional studies is characterized by a) an attempt to toughen the broad interpretation of compatibility requirements (which necessarily limits the number of countries sampled), and b) by ditch expert assessments and replacing them with judicial statistics and sets of logical variables. It is our view that any legal norm or law-enforcement practice can be described by means of a finite number of variables, even though such description might require considerable time and effort. Moreover, our previous research (*Mau, Yanovskiy, Zhavoronkov et al.*, 2002, 2003) has caused us to recognize certain institutions as fundamental and to therefore focus on these during the course of further analysis. We refer here to the right to life (or the risk of death at the hands of "roving" or "stationary" bandits), personal immunity (including persons with non-traditional convictions who are critical of the authorities, the prevalent religion etc.)

According to the extent to which these rights are guaranteed, it is possible to categorize all countries as either RoL (Rule of Law) countries where discrete regulation exists, or RoF (Rule of Force) countries.

It is also possible to speak of countries in transition as a distinct and separate category.

An overview of several papers devoted to the formal description of institutions and to an evaluation of their impact on economic growth and on investment climate, can be found in *Mau, Yanovskiy, Zhavoronkov et al.*, 2003.

This paper aimed to demonstrate the importance of those institutions ensuring guarantees of life and personal immunity by pointing out that, in the absence of these institutions, guarantees of universally recognized private property rights either cease to exist or are rendered meaningless. A person kept in detention and/or threatened with death, will, as a rule, agree to surrender any property rights he may have. Our research is predicated upon an important assumption as to the lexicographical character of demand (or preference) for life and freedom. We will attempt to substantiate this assumption by the following brief review.

Clearly, even statistically significant interdependence cannot be adduced as proof; it is at best an illustration, showing the possibility of an interrelation or causal relation. We believe the most acceptable approach on which to found this position and support this hypothesis is a combination of statistical analysis and reasonable micro-level interpretation of the economic agents' incentives. It is self evident that the propensity of the overwhelming majority of agents is to attain the goods of life and to enjoy freedom, and that they attach to these aims the highest priority. We shall attempt to describe this phenomenon by way of examining HLV in the fields of life insurance and hostage trades.

Human Life Value (HLV)

Economic theory offers a number of approaches for the evaluation of human life. HLV is the present value of all future income that a person can expect to earn.

In an "ideal" financial market, the HLV would reflect the maximum value of the borrowed funds available to a specific individual at a given moment. Such accurate estimations of the value of human life are utilized in the life insurance market, where the HLV represents a balanced estimation of the value of an insurance coverage in which both the insurer and the insured are mutually interested.

The insured party is interested in paying the minimum rate in the event of a "favorable" outcome and in being paid the maximum rate in the event of an "unfavorable" outcome, whereas the insuring party is interested in being paid the

maximum rate in an event of a “favorable” outcome and in paying the minimum rate in the event of an “unfavorable” one.

In some countries, a conditional assessment of human life value is established by legislation. The US Ministry of Transportation uses the conditional estimation of human life value¹⁴ when assessing the efficiency of investments in measures designed to ensure transport safety.

In the context of the present work, it is the market (insurance market) assessments that are most relevant. These demonstrate that as far as the market agents are concerned, the assessment of the value of life is comparable with the value of all the assets owned.

Demand for Health Care Services and Medical Insurance

On this subject there exists a vast body of literature, including studies based on empirical data (e.g., Liu, Chollet, 2006). The methodologies and assessments differ considerably, but all agree that the demand for such services is not elastic. This phenomenon has been observed even in the young Chinese market (Mokan, Tekin, Zax, 2003). In Russia, the development of the health care services and the medical insurance market is clearly insufficient. During the Soviet period, health care services, although of poor quality, were provided to the population free of charge and were widely available due to an incomparably higher standard of living and level of urbanization than that of China. In the post-Soviet period, this previous advantage in accessibility of free healthcare has considerably hampered the development of the health care services market. It is nevertheless a fact that the furtive proliferation of unauthorized commercial services began decades before the collapse of socialism. As might be expected, this hidden commercialization has been accelerating in recent years, which is yet another indirect testimony to the inflexible nature of the demand for health care services in Russia.

Chechen Region. Russia in the 20th Century and Iraq Since 2003

The trading of hostages during the 1990s in Russia – the center of this activity being in the de facto independent territory of Chechnya between 1991-94 and 1996-99 – is yet another confirmation of the fact that human life is assessed in relation not only to all the assets owned by a hostage, but also to all the assets owned by those who are potentially ready to assist in his liberation.

Regarding the hostage trade in Iraq – prices supposedly range from 150 thousand to 5-7 million USD¹⁵.

The Level of Protection of Human Life and Freedom

It must be emphasized that there exists no clear division between these two values. A person seized by terrorists or other “roving” or “stationary” bandits finds himself or herself in conditions that clearly threaten his or her life or dramatically lower the quality of life.

¹⁴ At present, the conditional human life value in the USA amounts to 3 million USD.

¹⁵ http://en.wikipedia.org/wiki/Foreign_hostages_in_Iraq

The level of protection can be defined as a value inversely related to the level of threats to life and freedom. Let us define the following levels of threats and list them in descending order.

1. A period of mass repressions, starvation, epidemics or war in a totalitarian State;
2. A totalitarian State in a “stationary” condition;
3. The same is true with the emergence of a small stratum of privileged individuals who cannot be subjected to arrest or execution without recourse to extremely involved procedures.
4. Same as above, but with a wide circle of privileged groups in an authoritarian state (but with the freedom to travel abroad, limitations on the activity of opposition politicians and print media);
5. The Government’s power is restricted by a Constitution (see definition above) and an independent judiciary (i.e. the authorities can and do lose a case in court). The situation is characterized by the presence of universal rights: personal immunity, the presumption of innocence with independent courts of justice and competitive court proceedings;
6. Same as above, but the Government’s power is additionally restricted by a competitive political system (democracy) with a powerful and independent mass media (a competitive media market).

It is evident that there exist numerous intermediate levels. It is also evident that only a tiny number of extremely profitable projects with very short periods of recoupment can be attractive at level (1). As we move to the subsequent levels, the types of projects that can be reasonably implemented (in terms of cost and recoupment time) increase.

It follows that the necessary condition for economic growth is a progressive reduction in the level of threats to life and freedom of a person. We have witnessed this process in China in recent decades (with an interval caused by the events of 1989). It is also clear that (as has been noted by Olson) that as projects become more time consuming and transactions more intricate, guarantees must be at Level 6 levels. For example, in China this problem has been solved to some extent by unofficially granting personal immunity to foreigners from developed legal democracies.

The Rise and Decline of a Totalitarian State Economy – the Case of the USSR

M. Olson (2000, pp. 100, 129) analyzed the causes and sources of the relative efficiency of the Stalinist economic model. He came to the conclusion that regular mass repressions of special interest groups ensured transparency of the administrative system for the dictator. However, Olson does not offer an answer to the question as to why the Stalinists themselves rejected such an efficient model almost immediately

after the tyrant's death. The Stalinist elite required that their own personal safety and inviolability be increased, which can explain the rapid abandonment of the Stalinist model. The price paid for these guarantees of safety and inviolability was the gradual growth and increasing power of special interest groups (Olson, 2000, Chapter 8) within governing agencies and those wielding power, which resulted in a progressive sclerosis of the system.

Statistical analysis

A. Przeworski (Przeworski et al, 2000) shows¹⁶ that in absence of peculiar advantages that would tend to affect economic growth, democracies exhibit a higher stability in terms of growth rates than do dictatorships.

It is equally apparent that the overwhelming majority of rich countries are democratic. Thus, it inevitably becomes necessary to test the hypothesis that in the historical very long run period (in excess of 100 years – VLR), a democratic regime (or to be more precise, a rule-of-law – RoL democracy) (see Mau, Yanovskiy, Zhavoronkov et al., 2003) will exhibit a positive statistical connection to growth rates of per-capita GDP.

Also a 180-year period offers considerably more possibilities for analyzing the existence of cause-effect relationships between democratic institutions and economic growth.

Of course, our analysis is by no means “proof” of democracy's advantages, and does not claim to be so. The statistical illustration presented below, which is actually a rough draft (due to the numerous “re-establishments” of missing data with a weakening of the connection¹⁷), demonstrates the presence of a clear and strong relationship between a number of variables.

The obtained interrelationships do not allow for the rejection of the hypothesis that a rule-of-law democracy provides advantages when compare to all alternative types of regime in the historical very long run; the available data is insufficient for such a conclusion.

Data

The statistical data (the values of per-capita GDP) are taken from the works of M. Maddison (Maddison, 2001, 2003). The values are summarized in Annex 3.

The Oil Monarchies are not included in the sample (the nineteenth – century data missing in M. Maddison's works were not “reconstructed”) because of the undesirability to complicate the model by the introduction of yet another variable.

The duration of the regime of rule-of law democracy in a country was determined on the basis of data found in Freedom House, Przeworski (Przeworski et al, 2000), Tanin-Lvov (Tanin-Lvov, 2001) and in a number of sources used for collecting the data for Annex 2.

At the same time, it becomes apparent that there exists an *incomplete comparability* of the rule-of-law regime as, for example, in the case of England of the 1890s and that of the majority of Latin American democracies in the first half of the 20th century (not in favor of the latter). A number of apparent problems or failures

¹⁶ He analyzes the forty year period 1950-90 based on a sample of 100 countries.

¹⁷ That is, so as not to artificially strengthen the interdependence.

were taken into account, (although roughly), by singling out the following conditions of democracy:

- (?) a rule-of-law democratic state (RoL Democracy);
- b) a rule-of-law state with elements of democracy (RoL&DemElements);
- c) basics of a democratic regime with elements of the rule of law (Dem_basis&RoLelements),
- d) a non-liberal democracy (IllibDemocracy)

The available data on a large number of countries and on practically all large worlds' regions (which makes it possible to approximately estimate the intervals of the initial per-capita GDP for another several scores of countries), presented by M. Maddison, have made it possible to perform these estimations with respect to 145 countries.

There is no GDP data on many countries for the 19th century. Where GDP data for a backward and undemocratic country was unavailable, we used the per-capita GDP index for the year 1820 at a minimum level for this category of countries (the region according Maddison).

For countries where democratic rule has existed for decades, maximum assessments were used for a particular region. For countries "less mature" in this respect, or those with only few years of democratic experience during the period 1820-2000, we chose the minimum level. This resulted in a reduction of the average rate of growth of per-capita GDP for democracies, and an increase of same for authoritarian countries (in order to not overestimate the significance of democracy¹⁸.) In other words, the "reconstructed" data inevitably reduces the explanatory capacity of the model.

The total number of countries in the sample is 149, including the regional data application for the relatively young countries (values of GDP for 1820). Of that number, the data of 100 countries have been "reconstructed" by respective regions' data.

The most common problems and failures of democracies noted (apart from the failure to sustain a rule-of-law regime or to protect the basic individual rights (Rule of Law) [**see original] were :

- an inability to change the Government (political competition failure);
- problems with fair and equal representation and with voter registration procedures;

A taxpayer democracy offers no less a guarantee of political competition than a democracy based on the universal suffrage. Representation (franchise) could be legally achievable and legally universal as well. At the same time, taxpayer democracy is free from a number of well-known and well-described moral problems arising when Mr B, Mr C and Mr D decide that Mr A is obliged to help Mr E, and when there exist appropriate incentives for uncooperative behavior of voters, elected politicians, and bureaucrats. The incentives include an uncontrollable desire to redistribute the benefits, to boost the functions and powers of the State, which would result in a decline in the quality of public benefits provided thereby, and would undermine the guarantees of individual rights and freedoms. No moral problems concerning fair representation would emerge when only those are entitled to vote who have paid taxes in excess of a certain established threshold, irrespective of any other parameters (religion, race, gender, place of residence). Problems would emerge when some of the

¹⁸ Naturally, this has overrated the significance of initial GDP for further growth, because in an absolute majority of cases, countries with an experience of democracy have significantly higher rates of growth than non-democratic countries during the 180-year period under discussion.

taxpayers have the right to vote while others are deprived of this right or are restricted in its exercise by an extremely uneven parceling out of electoral districts (a typical example is England before the 1832 Reform Act).

The impressive centuries of experience of self-organization accumulated by Jewish communities in Europe is taken into account in the following manner: the preceding taxpayer democracy index is set for the state Israel at 100 years.

Data set for the statistical analysis presented in Annex 1.

3.2.2. Variables

Table 1.

?	Variables' designation	Variables' description
1.	GDPavgrowth	Average rates of per-capita GDP growth for the period of 1820-2000
2.	StartGDP	Per-capita income at beginning of period – 1820
3.	DemocrTaxp	Duration of period of taxpayer democracy
4.	RoL Democracy	The duration the RoL period in a country (including the period of democracy based on the universal right of suffrage, despite the apparent injustice of the latter): USA, England after 1832, the Third Republic in France prior to 1940, etc. (supreme executive authority can lose a judicial cause, or can be removed as a result of elections, etc.)
5.	RoL&DemElements	A RoL state with elements of democracy (England prior to 1832, Holland in the 17 th and 18 th centuries, the July Monarchy in France) has turned out to be a rare type. “Elements” mean regular elections, Parliament with considerable powers (taxes, budget), and political competition. However, not all taxpayers may vote, or the representation of voters is unfair and may differ by one order of magnitude and more
6.	Dem_basis&RoLelements	The basics of a democratic regime with elements of an RoL state (e.g., Russia, Ukraine and Romania in the 1990s; such regimes exist mainly in backward countries and last typically more than one term of office); it is the most widespread form of democracy in underdeveloped countries
7.	IllibDemocracy	The basics of a democratic regime with universal suffrage, as a rule, without visible elements of RoL (e.g., Venezuela in the period from the beginning of Hugo Chavez’s presidency up until the introduction, by him, of the “one-party rule” of the United Socialist Party of Venezuela; the short lived attempts at democratic rule in African countries)
8.	RestrictGovt	Any restrictions imposed on the State (or Government) by a law, or by a court decision, or

		by political competition (the sum of years in rows 4, 5, 6, 7)
9.	“Relig_Peace” (Not-ethic_monotheism)	“Non-ethical monotheism” or simply the “Religion of Peace” – Islam as a predominant religion in a country
11.	Judeo-protest	The predominance of Judeo-Christian values in the period of development of democracy
12.	Polity IV, P4	The variable constructed through the use of the PolityIV data set. Polity IV = DEMOC – AUTOC + 10 DEMOC and AUTOC are variables constructed in Polity IV

In order to reduce the significance of subjective assessments, the period of relatively democratic development was divided into 4 categories (variables 4-7). The overall duration of such a period (when the State’s power was restricted both by formal legislation as well as by enforcement practices) was taken into account in the statistical analysis, and the results thus obtained were significant as well.

Causality Analysis

In regression analysis, statistically significant relationships between variables do not answer the question of the direction of the influence exerted by variables on one another, i.e. causality.

For data which is “time series” by its very nature, there exists the Granger (1969) approach which attempts to help determine whether the variables influence one another. The Granger test indicates to what extent the current values of Y can be explained by the previous values of Y, and shows whether the values of X with one or another lags improve the current explanation of Y.

It is believed that variable X is the Granger-cause for Y if X helps to improve the explanation of Y.

To test Granger-causality we run the following regressions:

- (1) $Y = c_0 + c_1 Y_{t-1} + \dots + c_n Y_{t-n} + k_1 X_{t-1} + \dots + k_n X_{t-n} + e_t$,
- (2) $X = d_0 + d_1 Y_{t-1} + \dots + d_n Y_{t-n} + l_1 X_{t-1} + \dots + l_n X_{t-n} + e_t$.

For the first equation, F-statistics are the Wald statistics for the hypothesis of the simultaneous equality to 0: $k_1 = k_2 = \dots = k_n = 0$. The zero-hypothesis is as follows: X IS NOT the Granger-cause of Y. I.e., the values of variable X taken with a certain lag do not influence the current value of variable Y.

We believe that X is the Granger-cause of Y if, on the one hand, it is possible to reject the hypothesis that X is not the Granger-cause of Y (*i.e. coefficients k in regression (1) significantly differ from 0*), and, on the other hand, it is impossible to reject the hypothesis that Y is not the Granger-cause of X (*i.e. coefficients d in regression (2) cannot be differentiated from 0 at the required level of significance*). We have used Granger causality tests in order to assess the causality direction of RoL (Rule of Law) variables and the rates of economic growth in the period 1820-2003.

On the basis of data regarding the size of population of European countries and by using the RoL variable for each of these countries, we constructed the RoL_TOTAL1 variable¹⁹ for 12 European countries by assessing the RoL of every country according to its population.

In the Granger test performed on a model with two-year lags, we observe the causality direction from RoL to economic growth (i.e. we can reject the zero-hypothesis at the 1% level of significance) and, conversely, we do not observe the causality direction from the rates of economic growth to RoL (i.e. we cannot reject the hypothesis of all the coefficients being equal to zero, [**meaning unclear] under rates of economic growth taken with certain lags, as regards their influence on RoL).

The same result is observed in the model with 5 lags. That is, RoL is the Granger-cause for the rates of economic growth.

The results of models assessed with 10 and 15 lags. In these cases it is safe to say that there exists a mutual influence between RoL and the rates of economic growth.

We obtained similar results regarding causality with data relating to rates of economic growth and variables constructed on the Polity IV data base.

Assessment of models with short lags show the direction of Granger-causality is from RoL to high rates of economic growth. When the lags are increased, there remains only the mutual influence of variables.

However, if the 30's and 40's of the 20th century are excluded from the period under study, we find that short-term dependence is preserved in the causality direction from RoL to high rates of economic growth. In models with longer lags, however, the influence of rates of economic growth on RoL weakens. [**see original]

In the models with variables based on the Polity IY data causality remains in evidence in the short run, while with the exclusion of the 30's and 40's of the 20th century, the relationship between RoL and economic growth loses significance in models with a large number of lags.

When analyzing causality direction between the Restricted Government variables (RG) and the rates of economic growth, it is possible to find another causality direction (differing from that observed for European countries).

For 15 Latin American²⁰ countries, as well as for countries with longer statistical rows of economic growth (for Salvador, Nicaragua and a number of other countries, such statistics are available beginning with the 1920's) models with small number of lags display no significant relationships.

At the same time, when additional lags are included in the model, the emergence of a Granger-causality direction from rates of economic growth to RG variable is observed.

We have analyzed the causality direction between the Restricted Government variable and the rates of economic growth for individual countries of Eastern Europe. (We considered countries with GDP data sets available for the past 50 years, in particular, Hungary, Bulgaria, and Czechoslovakia (Czechia and Slovakia).

With regards to Hungary, one cannot deny the absence of a causality relationship direction from the RG variable to the rate of economic growth.

¹⁹ Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Sweden, Switzerland and the UK.

²⁰ GDP_Bolivia, GDP_Costa Rica, GDP_Cuba, GDP_Dominican Republic, GDP_Ecuador, GDP_El Salvador, GDP_Guatemala, GDP_Haiti, GDP_Honduras, GDP_Jamaica, GDP_Nicaragua, GDP_Panama, GDP_Paraguay, GDP_Puerto Rico, GDP_Trinidad and Tobago

A similar causality direction is obtained when using the variable based on the Polity IV data.

For all models – both those where use is made of the Restricted Government variable, as well as those where the variable based on the Polity IV data is used – the hypothesis of the existence of Granger-causality directed from institutional variables (Restricted Government or Polity IV) to the rates of economic growth cannot be rejected.

The very same conclusions regarding Hungary can be made with regard to Czechia and Slovakia, both in terms of the Restricted Government variables and the Polity IV variable.

When applying similar models to Bulgaria, it is apparent that the hypothesis that the variables influence each other, with a certain lag, at a sufficiently high level of significance, can be rejected. That is, the values of the RG variable in previous periods do not influence the rates of economic growth at the present moment.

However, Granger-causality manifests itself in models with more than 5 lags tested on a sample where per-capita GDP is more than 2000. [**meaning unclear – does this refer to Bulgaria?]

Comments

The duration of a RoL regime is explained by the initial level of GDP, the presence of Judeo-Protestant values, and the experience of a taxpayer democracy (Dependency 7, Table 2), as well as by the predominance of Islam (negatively) in combination with taxpayer democracy (positively) (Dependency 8, Table 2).

On the basis of the foregoing we can considerably augment Przeworski and his colleagues' observation that dictatorships, while demonstrating more frequent periods of considerably higher economic growth than democracies, also cause equally spectacular economic collapses, i.e. that they demonstrate economic growth instability. Even where democracy does not demonstrate any economically measurable advantages over a forty-year period under observation, it still ensures higher rates of long-term (150-200 years and more) economic growth due to the long-term stability it provides.

The long-term period of observation alleviates the problem of comparability regarding the technical conditions of economic growth. Recent decades, characterized by acceleration of technological progress, have provided higher rates of economic growth. However, it is true that this factor has also decreased the relative significance of democracy as a factor of growth. Technological progress, is conducive to acceleration of economic growth in any country which avails itself of its achievements. The typical tendency of institutionally backward countries to adopt innovations is largely compensated for by the incomparably lower costs of access to the results of research and development, even where these results are legally acquired. Frequently, such advancements are acquired in such countries by way of theft of intellectual property rights. Thus, even projects with a short period of recoupment and small sensitivity for failure in protecting property rights, can be implemented with significantly greater efficiency, which result in the acceleration of economic growth.

The acceleration of scientific and technological progress in the 20th century has influenced the rate of economic growth (the average annual rate of 1% was quite satisfactory in the 19th century, while long-term rates of growth during periods of peace in the 20th century have exceeded 3%). This factor could grant a significant advantage to a democracy based on the universal right of suffrage over a taxpayer democracy in a comparative analysis of these two institutions. For this reason we have

not conducted such an analysis in the present study, although we consider the difference between the two institutions to be very significant.

An historical analysis of the source of investments is another very significant factor reducing the possibility of demonstrating the importance of a democratic regime and one or another set of legal norms for economic growth.

As opposed to more backward parts of the world, countries which can be considered to have achieved “developed” status by the middle to the end of the 19th century were characterized by their experience of a Rule-of-Law State and democratic rule. These countries, the majority of which were Protestant, became the source of investment in the broadest sense – from finance to knowledge and human capital – for the rest of the world.

This capital was not, to be sure, used efficiently in all countries and regions. It is apparent, nevertheless, that the success achieved by various eastern Asian countries, none of which have ever experienced democracy, or have become democratic only recently, is the result of the efficient use of capital from developed countries. Clearly no active trade balance between these countries and Europe or North America would have been possible without the investments or the necessary know-how, technical specialists and managers provided by the latter.

Table 2.

#	Dependent variables	Independent Variables	Coefficient (adjusted)	Number of observations	T-statistics	R ² - adjusted
1.	GDPavgrowth	Democr&RoL	0.549	145	7.863	0.297
2	GDPavgrowth	RestrictGovt	0.582	145	8.567	0.335
3.	GDPavgrowth	StartGDP	0.333	49	2.420	0.092
4.	Democr&RoL	DemocrTaxp	0.869	145	20.970	0.753
5.	Democr&RoL	StartGDP	0.808	49	9.412	0.646
6.	GDPavgrowth	RoLDemo- cracy; Relig_Peace	0.513 -0.162	145	7.213 -2.275	0.324
7.	RoL Democracy	StartGDP Judeo-protest DemocrTaxp	0.289 0.308 0.392	145	4.763 5.199 5.615	0.761
8.	RoL Democracy	"Relig_Peace" DemocrTaxp	-0.107 0.792	145	-2.131 15.779	0.671

Conclusions

The successes of authoritarian modernizations, as demonstrated by Przeworski and his colleagues (*Przeworski et al, 2000*), are unreliable achievements (even for the period of 1950-90), because a period of rapid growth can be followed by periods of profound and lengthy slumps. The economic successes of authoritarian regimes are much more sensitive to political shocks (due simply to the lower level stability of such regimes as compared to legal democracies). **Such regimes are less stable and robust in comparison to democracies, all appearances of power and**

stability notwithstanding. It is this factor which made a mockery of the forecasts of almost all sovietologists.

The results of our research covering the period 1820-2000 confirm the hypothesis that, in the long run, rule-of-law democracy provides conditions for much higher rates of economic growth. More importantly, such regimes demonstrate an ability to export capital, knowledge and, in rare cases (where political will exists), even efficient institutions, thereby stimulating the growth of global economy as a whole. Authoritarian and totalitarian regimes (Nazi Germany, USSR, PRC) export only war, starvation, and economic collapse, or, at best, make up for the failures of their vassals by paying for their loyalty from their own internal resources (USSR in the post-Stalinist period).

The hypothesis regarding Causality direction could not be rejected. (RoL Democracy provides the best guarantees of private property and thus the best framework for private investment and economic growth).

Our analysis supports the hypothesis regarding the ability of RoL Democracies to provide the best framework for VLR economic growth. RoL Democracies induce economic growth throughout the world by the export of capital, knowledge and institutions, just as Autocracies export only inefficient institutions (USSR to Central and Easter European countries, China etc.) and war. Even the supply of free oil and gas, weapons and educational services to **allied states** proved to be inefficient.

Private property can be said to be protected only if a person's life and immunity (liberty) is guaranteed. A regime where an independent court system and opposition media (this term being defined quite formally) exist provides much more favorable conditions for economic growth in post-communist countries, as long as **stable voter demand for such institutions exists over an extended period so that such values become deeply-rooted and broadly shared in a given society. This in turn should lead to a constitutional basis for the above in terms of formal legislation, as well as informal societal standards.**

The advantages of a Rule of Law Democracy are rooted in the due guaranties of personal immunity. Such provisions must be potent enough to guarantee the immunity even of a person whose religious faith is at odds with the government or someone who is critical of government. The level of personal immunity guaranties described above is the necessary condition for the effective protection of private property and for the VLR economic prosperity of the citizenry.

References

1. Acemoglu D., Robinson J.A. "Economic Origins of Dictatorship and Democracy" Cambridge University Press 2006
2. Adams J. "Defence of the Constitutions of the United States" Vol.1 London: Minted For C.Dilly, in the Poultry, 1787-1788
3. Barro R.J. "Determinants of Economic Growth" London, MIT Press, 1999
4. Barro R.J. "Determinants of Democracy" Journal of Political Economy, Vol. 107, No 6 Part 2: Symposium on the economical Analysis of Social Behavior in honour G.S.Becker (Dec. 1999) pp. S158- S183
5. Conley B. C. The value of human life in the demand for safety //The American Economic Review.- March, 1976.-V.-66.-? 1.-p.45-55. Jones-Lee M.W. The value of Life. An Economic Analysis.-Chicago.: The University of Chicago Press, 1976.-162 p.

6. Djankov S., Shleifer A., et al, "Who owns the Media?" World Bank research paper #2620, Harvard University, HIER, research paper # 1919, 2001
7. Grubel Herbert. G. "Economic Freedom and Human Welfare: Some Empirical Findings //Cato Journal, Vol. 18, No 2, pp. 287-304, 1998
8. Granger, C. W. J.: 1969, Investigating causal relations by econometric models and cross-spectral methods, *Econometrica* 37, 424-438.
9. Gwartney, J.D., Lawson, R.A. & Block, W.E., *Economic Freedom of the World: 1975-1995* (New York, Cato Institute, 1996).
10. Gwartney James and Lawson Robert August "Measuring Economic Freedom", 15, // Cato Journal, 1997
11. Gwartney James, Holcombe Randall, Lawson Robert "The Scope of Government and the Wealth of the Nations" // Cato Journal, Vol. 18, No 2, pp. 163-190, 1998
12. Holcombe R., James Gwartney, Robert Lawson Institutions and the Impact of Investment on Growth; papers New Orleans Public Choice Annual meeting, 2005 www.pubchoicesoc.org
13. Human life value calculator (web site of "The Life and Health Insurance Foundation for Education (LIFE) non-profit organization" representing and promoting the insurance business) [http://www.life-line.org/build/human life value calculator/index.php?pt=lfhlc&m=1](http://www.life-line.org/build/human%20life%20value%20calculator/index.php?pt=lfhlc&m=1)
14. Kaufmann D., Kraay A., Mastruzzi M., 2007 "Governance matter IV. Aggregate and individual Governance Indicators 1996-2006" World Bank policy research working papers 4280, WB Washington, D.C. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/07/10/000016406_20070710125923/Rendered/PDF/wps4280.pdf
15. Klyamkin I, Timofeev L., "Tenevaya Rossia" (Shadow Russia or Dark side of Russia) Moscow Russian State Humanitarian University Press, Moscow, 2000
16. Kuznets S. "Modern Economic Growth: Rate, Structure and Spread" New Heaven; London: Yale University Press, 1966
17. Liu S., Chollet D, "Price and Income elasticity of the Demand for health Insurance and Health care services: critical review of literature" *Mathematica Policy Research*, # 6203-042, 2006
18. Maddison Mangus "Monitoring The World Economy 1820-1992" Paris, OECD 1995
19. Maddison Mangus "The World Economy. A Millennial Perspective" Paris OECD, 2001
20. Maddison Mangus "The World Economy Historical Statistics" Paris OECD, 2003
21. Mau, V. & Starodubrovskaya, I. *The challenge of Revolution* (Oxford, Oxford University Press, 2001).
22. Mau V., K.Yanovskiy «Political and Legal Factors of Economic Growth in Russian Regions" "Post-Communist Studies", Vol.14, No. 3, 2002;
23. V.Mau, S.Zhavoronkov, D.Maslov «Institucionalnye predposylki sovremennogo ekonomicheskogo rosta» , IET, wp# 106r (Institutional preconditions of the modern economic growth) 2007
24. McMahon G. (ed.), M.Dabrowski, V.Mau, K.Yanovskiy et al "Understanding Market Reforms Volume 2: Motivation, Implementation and Sustainability" Palgrave Macmillan, 2006

25. Mijiyawa A.G. "Economic Growth Sustainability: Do Institutions Matter and which one prevails?", ISNIE, 2006 Conference, Boulder, Colorado (USA)
26. Mogan N.H., Tekin E., Zax J.S. "Demand for medical care in urban China", UNPAN, January, 2003
unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN011041.pdf
27. Olson, Mancur, 'The Hidden Path to a Successful Economy', in C. Clague & G. Rausser (eds), *The Emergence of Market Economics in Eastern Europe* (Oxford, Blackwell, 1992), pp. 55-75
28. Olson, Mancur, *Power and Prosperity* (New York, Basic Books, 2000)
29. Okui K. Causality between Political Freedom and Economic Freedom papers New Orleans Public Choice Annual meeting, 2005 www.pubchoicesoc.org
30. Pipes R. "Property and Freedom" Vintage Books, 2000
31. Przeworski A., Alvarez M.E, Cheibub J.A., Limongi F. "Democracy and Development. Political Institutions and Well-Being in the World 1950-2000" Cambridge University Press, 2000
32. Richard Roll, John Talbott "Why Many Developing Countries Just Aren't", UCLA, http://www.anderson.ucla.edu/acad_unit/finance/wp/2001/19-01.pdf, 2001
33. Shleifer A., Glaeser E., La Porta R., López de Silanes, F. "Do Institutions Cause Growth" // *Journal of Economic Growth* 9:271-303
34. Solsten E. and Sandra W. Meditz, editors. Finland: A Country Study. Washington: GPO for the Library of Congress, 1988
<http://countrystudies.us/finland/77.htm>
35. Trunov I. "Eqvivalent stoimosti chelovecheskoy zhizny" (Equivalent of Human Life Value) // "Yuridicheskyy konsultant" #9, 2006
36. Wikipedia: Foreign Hostages in Iraq
http://en.wikipedia.org/wiki/Foreign_hostages_in_Iraq
37. Wo W., Otto A. Davis "Freedom and Growth: A Dynamic Panel Data Model" papers New Orleans Public Choice Annual meeting, 2005
www.pubchoicesoc.org
38. K.Yanovskiy, V.Mau, O.Fomitchev, S.Javoronkov, L.Lederman "Investment Risks in Russia's Regions: Political and Legal Origins", IET – CEPR 2002
39. K.Yanovskiy, V.Mau, S.Javoronkov et al «Importirovannyye instituty v stranah s perehodnoy ekonomikoy : effektivnost i izderjki» (Imported institutions in the Transitional countries : efficiency and costs) 2003 IET, WP#68
40. Yanovskiy K., Zhavoronkov S, Zatskovetskiy I. "Demokratia kak sredstvo tushenia pozhara" ("Democracy as a Tool for extinguishing of the Fire") // *Obshestvennyye nauki I sovremennost* (Social Science and Contemporaneity) # 2, 2007 pp. 47-58
41. <http://confinder.richmond.edu/> The constitution finder (links collection)
42. <http://www.freedomhouse.org/template.cfm?page=15&year=2006> The freedom in the World, <http://www.freedomhouse.org/template.cfm?page=16> The freedom of the press in the World Freedom House, USA