

The Relationship between Economic Development and Institutional Environment

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Abstract

The literature stresses the relation between institutions and economic performance. Series of studies have demonstrated a strong link between institutional environment (measured by property right, rule of law, corruption, bureaucratic quality and other institutional variables) and economic growth and development. What is unclear whether the institutions can also explain variation in per capita income across countries, in which institutional environment is to some degree alike.

This article focuses on economic development in 1996–2006 in countries, grouped according to their institutional environment quality. This article aims to analyze to what extent variation in GDP per capita across these countries can be associated with institutional environment.

Positive and strong relationship between GDP per capita and institutional environment variable proves out across 153 analyzed countries sample and in sub-sample of 60 countries where institutional environment in 1996–2006 on the average was “positive”. But at best only weak relationship was established in sub-sample of 93 countries where institutional environment on the average was “negative”.

Key words: institutional environment, governance indicators, economic development

Introduction

Research problem and relevance. Economic theory emphasizes various factors, determining economic growth and development. In the neoclassical growth model the inputs of capital, labor, and total factor productivity provide the source of growth. However this model offers neither explanation of what drives total factor productivity nor practical guidance for its improvement. We confront with the same problem in examining accumulation of physical capital and human capital. The question also arises why in some countries capital accumulation and technological progress is faster than in others. Due to the men-

tioned problems development economists switched their attention from the variables in the neoclassical growth equation to the ‘deep determinants’ of economic growth and development, namely, geography, integration and institution. Bloch and Tang (2004) present the discussion on the contribution of these determinants to economic growth.

Portes (2006) pointed out that the impact of institutions on economic growth and development has gained increased attention in the economic literature when Nobel laureate in economics Douglass North declared that “institutions matter”.

Many economists argue that definite institutional environment is the key precondition of economic development. A series of studies by Scully (1988), North (1990), Knack and Keefer (1995), Barro (1996), Knack (1996), Keefer and Knack (1997), Hall and Jones (1999), Acemoglu et al. (2001, 2003), more recent studies by Cavalcanti and Novo (2005), Eicher and Leukert (2006), Eicher et al. (2006) and many others explored the positive link between institutional environment and economic performance. Institutional environment in these studies is measured through various indicators: Gastil’s index of political rights and civil liberties, Economic Freedom of the World index constructed by Fraser Institute, the Index of Economic Freedom constructed by *The Wall Street Journal* and The Heritage Foundation, governance indicators presented by the World Bank, the subjective political risk ratings compiled by various organizations, namely Business International (BI), the International Country Risk Guide (ICRG), and Business Environmental Risk Intelligence (BERI). While the measures of “institutions” vary across studies, the results are consistent: institutions help to explain variation in per capita incomes across countries. Eicher and Leukert (2006) raised the question whether institutions matter to the same degree across all countries. Generally the literature examines either the global sample or developing countries. Eicher and Leukert (2006) examined the impact of institutions on economic performance across OECD and Non-OECD samples and concluded that the impact is more important in Non-OECD countries.

Trying to answer the question, raised by Eicher and Leukert (2006), another approach is made in this article: countries are grouped not according to the level of development, but according to their institutional environment quality. There is a broad agreement in the literature that weak institutions (rule of law, bureaucratic quality, corruption, government repudiation of contracts, civil liberties, etc.) inhibit economic development while strong ones lead to prosperity. What is unclear whether institutions can also explain variation in per capita income across countries, in which institutional environment is to some degree alike. The problem is: does it matter in respect of explaining variation of per capita income, if the country's institutional environment is "good" or "better" and "bad" or "worse"?

Research object: the relationship between economic development and institutional environment.

Research aim: to examine the strength of the relationship between the income level and institutional environment across countries, grouped according to their institutional environment quality.

Research tasks: to present theoretical reasoning of the relationship between economic development and institutions and the results of empirical research of this relationship; to compare the average level of per capita income in 1996–2006 across two countries' groups, formed according to institutional environment quality in the same period; to examine the ability of institutional environment (measured through governance indicators) to explain variation in per capita income across countries, in which institutional environment is to some degree alike.

Countries' economic performance is measured by GDP per capita based on purchasing power parity (PPP). The measures of institutional environment are governance indicators presented by the World Bank.

The paper is organized as follows. The next section deals with the definitional aspects of institutions and presents analytical and empirical findings on the relationship between institutions and economic performance. The second section introduces data and methodology analysis is based on. The third section presents empirical analysis and discusses the results. The article ends with conclusions.

Institutions and their relationship with economic performance

According to Portes (2006), interest to institutions in economic community has been particularly influenced by Nobel laureate in economics Douglass North. After North's declaration that "institutions matter," other analysts started to take them into account.

According to North (1990), "institutions are

the humanly devised constraints that structure human interaction". They are made up of formal constraints (laws, constitutions) and informal constraints (taboos, customs, and traditions). Rodrik (2000) defines institutions as "a set of humanly devised behavioral rules that govern and shape the interactions of human beings, in part by helping them to form expectations of what other people will do." Glaeser et al. (2004) point out essential aspect of institutions: the constraints need to be reasonably permanent or durable. The term "institution" is often used as a synonym of "organization". Burki and Perry (1998) explain the difference; organizations are entities composed of people who act collectively in pursuit of shared objectives and that actions are shaped by institutional structure defined by formal and informal rules and their enforcement mechanisms.

Research on the impact of institutions on economic performance highlight the importance of the economic, politic and legal institutions. An appropriate set of institutions defines incentives for individuals and organizations to invest in both physical and human capital, which are the proximate determinants of economic growth.

A series of studies support a positive link between various measures of institutions and economic growth: Knack and Keefer (1995), Barro (1996), Knack (1996), Keefer and Knack (1997), Acemoglu et al. (2001, 2003), Henisz (2000) and development: Scully (1988), North (1990), Hall and Jones (1999), Cavalcanti and Novo (2005), Eicher and Leukert (2006), Eicher et al. (2006), Gwartney et al. (2004) and many others.

Many economists argue that definite institutional environment is the key precondition of economic development. According to Easterly (2001), foreign aid, foreign investment, education, big infrastructure projects, conditional aid, debt forgiveness and so on won't have any impact on economic development if countries do not meet the basic institutional requirements: rule of law, protection of property rights, efficient bureaucracy, corruption-free government and political constraint on executive. Of course, institutional factors provide constraints which may inhibit policy makers' efforts to respond to external shocks and quickly correct policy mistakes. However, an assumption in the literature is made that the benefits of constraints outweigh the costs of lost flexibility (Henisz, 2000).

The impact of institutions on economic performance is indirect, as institutions do not produce goods or services. According to an institutional approach, both the amount and productivity of resources depend on institutional environment. Well defined institutions lower uncertainty, reduce macroeconomic volatility and thus foster investments and innovation.

Knack (2002) argues that there is greater technological progress and innovation in countries where institutions related to property rights are in place (in Bloch and Tang, 2004). A study by Tang et al. (2003) confirms that better institutional quality accelerates technical change, which enhances economic growth.

Knack and Keefer (1995) find cross country econometric evidence to support a positive link between measures of institutional environment (particularly measures of property rights) and investments. The World Bank report 1997 presents a similar conclusion that investment and growth rate are higher in countries with stable government, clear and predictable law, protected property rights and reliable judiciary. Gwartney et al. (2004) reach the conclusion that the quality of a country's institutions exerts a strong impact on the rate of investment.

Hall and Jones (1999) analysis shows that differences in physical and human capital can only partially explain the variation in output per worker across countries. The authors claim that the differences in capital accumulation, productivity, and therefore output per worker are driven by differences in institutions. According to Eicher and Leukert (2006), the impact of Hall and Jones' (1999) economic institutions on income is stronger in developing countries. The authors conclude that the impact in OECD countries is only one third of the effect that the same institutions exert in non-OECD countries. Eicher et al. (2006) results show that the largest impact of institutions is through its effect on the physical capital productivity.

Gwartney et al. conclude that institutions variable alone explains 63,2% variation in income across countries (2004). Cavalcanti and Novo (2005) results show that 1% improvement in institutions (as they measure them) generates on average a 5% increase in output per worker.

In the literature the relationship between institutions and economic growth was clarified by using various indicators of institutions in various time span and different country samples. Due to this reason the results are hardly comparable.

Data and methodology

The measures of economic performance and institutions are taken from the World Bank databases. The countries' economic performance is measured by GDP per capita based on purchasing power parity (PPP). GDP (PPP) is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. Data are in current international dollars [23].

As the measures of institutional environment governance indicators are used. Indicators are based on several hundred individual variables measuring perceptions of governance, drawn from 31 separate data sources constructed by 25 organizations. All scores lie between -2.5 and 2.5, with higher scores corresponding to better outcomes. For more detailed methodology used to construct the indicators see Kaufmann et al. (2007).

The governance indicators measure the following six institutional dimensions of governance:

- *Voice and accountability*, the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, association and free media.
- *Political stability and absence of violence* refers to the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means.
- *Government effectiveness*, the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- *Regulatory quality*, the ability of the government to formulate and implement policies and regulations which permit and promote private sector development.
- *Rule of law*, the extent to which agents have confidence in and abide by the rules of society, the police, and the courts, as well as the likelihood of crime and violence.
- *Control of corruption*, the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Different dimensions of governance are not analyzed in this article. The values of all governance dimensions are summed into aggregate governance index (AGI) as the overall measure of institutional environment quality. In this case AGI value can vary from -15 to 15. Countries for which GDP per capita and governance indicators data was available are separated into two groups. One sample constitutes countries with AGI 1996–2006 average value from 0 to -15, another one – from 0 to 15.

Countries' economic development and institutional environment are analyzed using descriptive statistics (mean, std. deviation, minimum and maximum values). The empirical assessment of the relationship between economic performance and governance indicators is estimated using regression analysis. The analysis is performed with computer program SPSS.

Variation in per capita income in relation to institutional environment

1996–2006 was available; (2) countries with AGI 1996–2006 average value from 0 to 15; (3) countries with AGI 1996–2006 average value from 0 to -15.

Table 1 presents data on GDP per capita average in three samples: (1) all countries for which GDP per capita and governance indicators data for

Table 1

Aggregate governance index (AGI) and GDP (PPP) per capita (current international dollars, thousands) average in 1996–2006

Sample	Variable	N	Minimum		Maximum		Mean	Std. Deviation
All countries	AGI	153	-11,26	Congo Dem. R.	11,23	Finland	-0,33	5,37
	GDP per capita		0,57	Tanzania	52,33	Luxembourg	8,78	9,98
AGI average from 0 to 15	AGI	60	0,15	Vanuatu	11,23	Finland	5,29	3,54
	GDP per capita		1,69	Mongolia	52,33	Luxembourg	17,38	11,10
AGI average from 0 to -15	AGI	93	-11,26	Congo Dem. R.	-0,11	Romania	-3,96	2,40
	GDP per capita		0,57	Tanzania	12,39	Argentina	3,23	2,46

As we can see from Table 1, that across 153 analyzed countries the highest GDP per capita average in 199–2006 was in Luxembourg and the lowest – in Tanzania. Average GDP per capita in the richest and poorest nations differs 91,8 times, i.e. the average income level in Tanzania constitutes only 1,1% of the average income level in Luxembourg. The GDP per capita mean is 8,78 and standard deviation is 9,98 indicating that true values of the GDP per capita average across countries vary a lot from the presented mean.

It is clear that countries where institutional environment is “positive” (AGI average varies from 0 to 15) are richer than those where environment is

“negative” (AGI average varies from 0 to -15) as these countries’ GDP per capita 1996–2006 average is 17,38 and 3,23 respectively.

The differences of the GDP per capita levels within sub-samples are significant but not so high when compared to all sample. The average GDP per capita levels in the richest and poorest countries differs 31 times across 60 countries where institutional environment is “positive” and 21,7 times across 93 countries where institutional environment is “negative”.

To what extent the variation in the GDP per capita across countries can be associated with institutional environment can be seen from Figure 1.

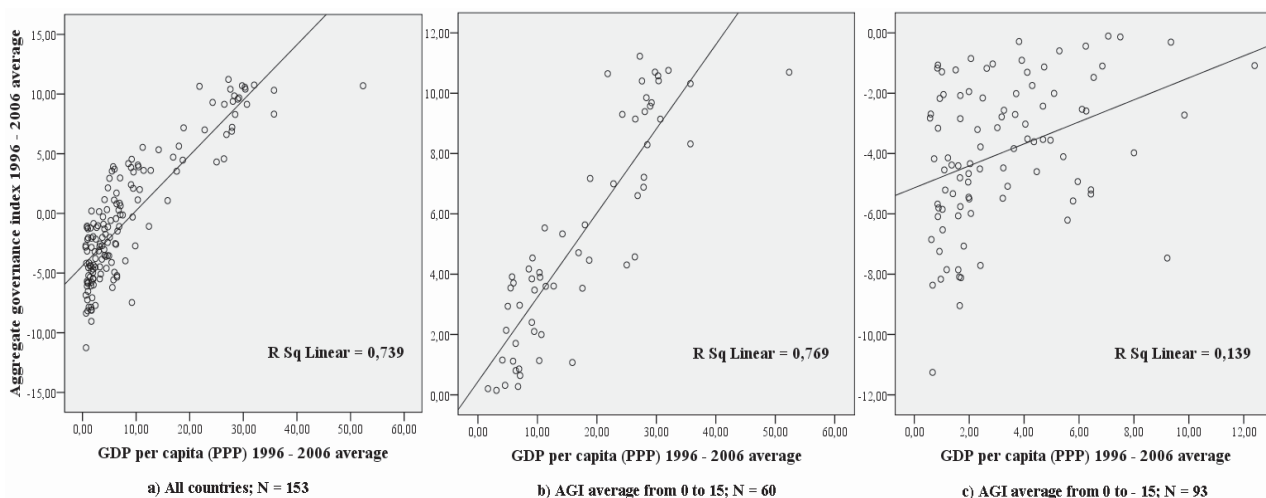


Fig. 1. Aggregate governance index (AGI) and GDP per capita relationship

From figure 1 we can see that aggregate governance index explains about 74% of variation in the GDP per capita across 153 countries. These results come in line with a series of studies in which a strong and positive link between various measures of institutions and economic development was established. This positive and strong relationship also proves out in 60 countries where aggregate governance index 1996 – 2006 average varies from 0 to 15. The negative AGI index values failed to explain the GDP per capita variation. Why the explanatory power of positive AGI values is very strong while the explanatory power of negative values is only weak? The literature suggests that institutions affect economic development through their impact on investments and innovations. It can be expected that all negative AGI values from 0 to – 15 indicate not favorable environment for investments and innovations and the degree of “badness” doesn’t make much difference, contrary, the degree of “goodness” means a lot. In order to empirically confirm this statement a further investigation needs to be done.

Conclusions

1. The literature stresses the relationship between institutions and economic performance. A series of studies support the strong link between institutional environment (measured through property right, rule of law, corruption, bureaucratic quality and other institutional variables) and economic growth and development. According to an institutional approach, well defined institutions lower uncertainty, reduce macroeconomic volatility, protect property rights and thus foster investments and innovation, which are the proximate determinants of economic growth and development.
2. Across 153 analyzed countries the GDP per capita average in 1996–2006 in the richest and poorest nations differs 91,8 times. The gap between the richest and poorest countries is smaller across countries, in which institutional environment is to some degree alike.
3. It is clear that countries where institutional environment is “positive” (AGI average varies from 0 to 15) are richer than those where environment is “negative” (AGI average varies from 0 to -15) but the differences of the GDP per capita within sub-samples are also significant.
4. According to an institutional approach, institutions can explain a large amount of variation in the GDP per capita across countries. The results of this research support this statement as the aggregate governance index (used as the overall measure of institutional environment’s quality) explains about 74% of variation in the GDP per capita average levels (1996–2006) across 153 countries. This positive and strong relationship also proves out in 60 countries where institutional environment is “positive”. But this relationship at best is weak across 93 countries where institutional environment in 1996 –2006 on the average was “negative”. According to the literature the main channels of institutions’ impact on economic are investments and innovations. It can be expected that all negative AGI values from 0 to – 15 indicate environment where investments and innovations cannot flourish and the degree of “badness” doesn’t make much difference, contrary, the degree of “goodness” means a lot. In order to empirically confirm this statement a further investigation needs to be done.

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Ekonomikos plėtros ir institucinės aplinkos tarpusavio ryšys

Santrauka

Literatūroje akcentuojamas institucijų ir ekonomikos plėtros ryšys. Daugelyje tyrimų patvirtintas tiesioginis ir stiprus ryšys tarp institucinę aplinką įvertinančių rodiklių (nuosavybės teisių apsauga, teisinė viršenybė, biurokratijos kokybė, korupcija, ekspropriacijos rizika, vyriausybės atsisakymas vykdyti kontraktus ir kt.) ir ekonomikos augimo bei plėtros. Nors institucijų rodikliai įvairiuose tyrimuose yra skirtingi, rezultatai nekelia abejonių: institucijos padeda paaiškinti didelę dalį pajamų lygio variacijos tarp šalių. Nekyla abejonių, kad tokie instituciniai aspektai, kaip užtikrinta nuosavybės teisių apsauga, žemas korupcijos ir biurokratijos lygis, užtikrinta teisės viršenybė, suformuoja ekonomikos augimui ir plėtrai palankią institucinę aplinką. Tačiau nėra aišku, ar institucinės aplinkos skirtumai taip pat gali paaiškinti pajamų lygio variaciją tarp šalių, kuriose institucinė aplinka yra panaši. Ar svarbu, aiškinant pajamų lygio skirtumus, jei šalies institucinė aplinka yra „gera“ ir „geresnė“ arba „bloga“ ir „blogesnė“?

Straipsnio tikslas – nustatyti ryšio tarp pajamų lygio ir institucinės aplinkos stiprumą šalių imtyse, sudarytose remiantis institucinės aplinkos kokybę įvertinančiu valdymo indeksu.

Straipsnyje analizuojamas pajamų lygio rodiklis – BVP vienam gyventojui (PGP) 1996–2006 m. vidurkis; institucinės aplinkos rodiklis – to paties laikotarpio valdymo indekso vidurkis (apskaičiuota naudojant Pasaulio Banko pateikiamus valdymo rodiklius).

Teigiamas ir stiprus ryšys tarp BVP vienam gyventojui bei institucinės aplinkos rodiklio pasitvirtino analizuotose 153 šalyse. Analizuojamas ryšys taip pat pasitvirtino šalyse, kuriose institucinės aplinkos kokybė 1996–2006 m. vidutiniškai gali būti įvertinta kaip teigiama, tačiau silpnas ryšys buvo nustatytas šalyse, kuriose institucinės aplinkos kokybė įvertinta kaip neigiama.