Building institutions for growth and human development: an economic perspective applied to the transitional countries of Europe and CIS

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1. Introduction

The collapse of the communist system during the late 1980's redefined the hierarchy among Central and Eastern European Countries (CEECs) and the former USSR. Some of these countries joined the EU[3]; some did not[4]; others formed the CIS[5]. In particular, institutions, mainly market and political one, appear to be a strong foundation for a rapid but irreversible shift from socialism to market-oriented economy (JOHNSON, KAUFMANN & SHLEIFER, 1997; NAGY, 2002). The relationship between economic performance and the quality of domestic institutions has emerged recently as a major subject of interest. The literature shows that the higher the quality of domestic institutions (RODRIK & SUBRAMANIAN, 2003) the better the effects on the Human development and growth of a country (DE LONG & SHLEIFER, 1993; EASTERLY & LEVINE, 2002; KAUFMANN & KRAAY, 2002; KAUFMANN, KRAAY & ZOIDO-LOBATÓN, 2002; KAUFMANN, KRAAY & MASTRUZZI, 2005; KNACK & KEEFER, 1995; MAURO, 1995; MÉON & SEKKAT, 2004).

The aim of this paper is to analyse in a more qualitative way the role of institutions in transitional countries in the CEECs and CIS. The main question we address is: what kind of institutional arrangement leads to Human development? We propose an analytical pattern where global performance (i.e. Human development) is the final outcome of a new institutional arrangement.

As NORTH and THOMAS (1973) and NORTH (1981, 1990) stressed, institutions are important for the development of a country and are an endogenous element of a country's economic growth. For NORTH (1990, p.3), institutions are *"the humanly devised constraints that structure human interaction"* including formal institutions (law and regulation) and informal ones (convention). Similarly SCOTT (1995, p.33) defines institutions as *"cognitive, normative and regulative structures and activities that provide stability and meaning to social behaviours"*. SCHOTTER (1981, p. 11.) shows that institutions do not only represent legal and governmental structures and regulations. They also represent the different interests of organisations and the regularity in social behaviours that specify action in recurrent situations. For HARE (2001, p. 5) institutions have four major characteristics: *"(a) they regulate economic behaviour in ways which, in the short run, often conflict with individual preferences; (b) they are*

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[3] Czech Republic, Hungary, Poland, Slovakia, Slovenia, Estonia, Latvia, Lithuania in 2004, Bulgaria and Romania in 2007.
[4] Croatia, Albania, Bosnia & Herzegovinia, Macedonia, Serbia, Montenegro.
[5] CIS (Commonwealth of Independent States) : Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Federation of Russia, Tajikistan, Turkmenistan (associated State), Ukraine, Uzbekistan.

based on shared expectations, derived from custom, trust, legal provisions, etc.; (c) they make most sense if the economy is thought of as a "repeated game" in which most types of transaction occur many times; and (d) anonymity, in the sense that the functioning of a given institution should not be dependent upon the identity of the economic agents seeking to conduct the types of transaction to which this institution relates."

In the new institutional economics perspective, the creation and preservation of market supporting institutions, centred on property rights, commercial law, regulation concerning licensing, credit, and the setting up of business enterprises, have been seen as important. In transition countries, economic institutions (i.e. market institutions) are a necessary condition but, as we will notice it later, they aren't a sufficient one.

After 1989, the transition process has introduced a breakdown in economic efficiency and has generated an '*institutional vacuum*' (GROGAN & MOERS, 2001, p. 327; MOERS, 1999). Former communist institutions needed to be adapted and reshaped to fit the new economic rules. Simultaneously, new institutions needed to be introduced and built to support a market-oriented economy and also democracy (DABROWSKI & GORTAT, 2002). Moreover, local reluctances could appear among actors unwilling to get rid of their former but outdated practices and/or unable to adopt new ones. Hence, the success of the transition process was depending on the willingness of local governments to set up an institutional pattern able to boost the economic development and the political reform. As GLOBERMAN and SHAPIRO (2002, p. 42) wrote: "*political governance matters and improved political governance does not necessarily oblige governments to make large investments of taxpayers' money (…..) Indeed, improved governance might be more consistent, in many cases, with a smaller economic and regulatory role for governments.*"

As shown by various authors, the weak and not adapted institutional pattern, inherited from the communist era, has been a barrier to development (BEVAN, ESTRIN & MEYER, 2004; BEVAN, ESTRIN, 2004; DABROWKI & GORTAT, 2002; POURNARAKIS & VARSAKELIS, 2004; TIDRICO, 2006; YEAGER, 1999). Indeed, political institutions i.e. "new" rules of the political game[6] should be considered. In other words, a broader institutional pattern needs to be constructed in order to embrace wider concepts able to explain the mechanism underlying economic development. Among them the complementarities between economic and political institutions and the quality of the institutional arrangement seems to be particularly relevant.

We will organise our research as follow. In a first part (2), we analyse the relationship between institutions, growth and Human development in a transitional context. In a second part (3), we test our hypotheses and finally (4), we will conclude on the relevance of our results.

2. Institutions, Growth and Human development in Transition: a complex relationship

The question we address in this section is: what does theory tell us about growth and Institutions relationship (2.1) and to what extent do institutions matter to enhance Human development (2.2). Transitional countries suppose we develop an

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[6] constitutional rules, election rules, political parties, justice administration, and limitation to the government activity

analytical pattern able to explain the wide variations in the impact of institutional reform across countries (2.3).

2.1. Institutions, Growth and Human development: a short survey

The quest of reliable and safe institutions has recently emerged in the economic literature. Since the beginning of the 90's, numerous authors have studied the relationship between institutions and growth (BARDHAN, 2005). They stressed on the sense of the causality between good institutions, growth and development. For HALL and JONES (1999), ACEMOGLU and al. (2004), KAUFMANN and KRAAY (2003), good institutions stimulate growth and development rather than the contrary. KAUFMANN and KRAAY (2002) noticed that the quality of institutions has an impact on growth but the reverse influence depends on the democratisation process and on the public governance. ACEMOGLU and al. (2001, 2002, 2005) show that quality of institutions have a more important effect on long term growth than on short term one. RESNIK and BIRSNER (2006) are not sure that good institutions governance has a positive effect on economic development. Finally, for CAROTHERS (2003) the transfer of market institutions to developing or transitional countries is difficult. As numerous authors pointed it out, the success of these transfers depends on path dependence and local abilities to make them effective within a local institutional arrangement (EDISON, 2003; GWARTNEY, HOLCOMBE & LAWSON, 2004; RODRIK & SUBRAMANIAN, 2003).

Nevertheless, the authors have developed different methodological approaches so that the results aren't homogenous. Moreover, most of the contributions consider institutions as a bloc and do not make a difference between endogenous and exogenous institutions. In our opinion, taking into account such differences is particularly relevant in transition. For example, exogenous institutions like informal rules, social norms or values may be "sticky" so that it may take a long time to reshape them. Accordingly, in a context of transition, the *'communist past dependency'* is important (FABRY & ZEGHNI, 2006; ZWEYNERT & GOLDSCHMIDT, 2005).

2.2. Building an institutional framework

Two kinds of institutions should be distinguished: first, the *formal institutions*, mainly endogenous, at the economic, legal and political level; second, the *informal institutions*, exogenous, rooted in the social area and, for those reasons, more complex to capture.

The functional typology of *formal Institutions* proposed by RODRIK and SUBRAMANIAN (2003) helps us to specify what a good market oriented institutional pattern could be. The first institution represents the rule of law and the next three institutions contribute to the emergence of a social consensus about risks, burden and prosperity sharing in a context of a market-oriented economy.

- The *Market creating institutions* represent the rules of law that clearly define and protect property rights and make contracts fair and reliable for all actors. Based on a clear legislation and on an efficient and fair judicial system, they reduce transaction costs and create incentives for investment and private sector development. In such a context of transparency, the degree of corruption should be low.

- The *Market regulating institutions* help to regulate market externalities, imperfect and asymmetric information or scale economies in sectors like transportation, telecommunication or environment. The regulation focuses on Fair competition (for example, access to land and construction permit), minimize distortions, and enhance Privatisation and Deregulation.
- The *Market stabilising institutions* reduce macroeconomic instabilities (low inflation rate, currency rate stability, balanced budget, financial discipline, fiscal rules, tax burden, trade policy, and banking system). They should also prevent major political risks and crisis (political and governmental stability, public administration and quality of local bureaucracy improvement).
- The *Market legitimising institutions* support social protection and manage social conflicts. It can be an insurance system or a welfare system that protects *a minima* people from a social dropping out. These institutions create favourable socio-economic conditions (Insurance system, welfare system, Education, infrastructures, and business development).

As far as political institutions are concerned, GERRING and THACKER (2001) consider the *Democracy* (i.e. free election, exit voice phenomenon), the *Constitutional structures* (i.e. Federalist or unitary State), and the *State capacities* (i.e. technical and administrative capacity to rule the country, corruption) as important elements. Political institutions are not only complementary to economics ones but they are also mutually reinforcing. For example, the transparency of the government actions contributes to shape a stable environment for actors.

Informal institutions rely on culture, mentalities, habits, trust, norms, conventions, codes, networks and even on nationalism (acceptance to sell national assets to foreigners, Ethnic tensions) or religion (Religious tensions). As KNOWLES & WEATHERSTON (2006) noticed, informal institutions, assimilated to *culture* (TABELLINI, 2005) or *social capital* (PUTNAM & al., 1993), are fundamental in explaining development and income differences. In some transitional countries, informal institutions play a major role (JÜTTING, 2003). They may pave the way to social and cultural stickiness (i.e. reluctances to change practices and habits) in case of inadequacy with formal institutions.

Formal institutions are introduced and imposed by the State in a top down logic and informal institutions are developed by the community in a bottom up logic. To avoid constraints and institutional uncertainty, transitional countries need to set up rapidly a new institutional pattern. Therefore, the quality and the speed of the local arrangement becomes a key factor to human development (NAGY, 2002).

2.3. Transition and the quality of the institutional arrangement

RODRIK (2004) argues that each stage of economic development implies different *'institutional arrangements'*. A catching up process may involve some originality in an institutional pattern, depending on each country's characteristics. We consider that a good institutional arrangement is the interplay between a new set of formal economic and political rules (mostly imported or inspired from western practices[7]) and a set of informal institutions. That compatibility (or incompatibility) between

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[7] It is the case of candidate countries willing to enter the EU and having to respond to the *Acquis communautaire* requirements.

these types of institutions may explain the wide variations in the impact of law and institutional reform across countries.

To understand the nature of the local institutional arrangement we need to consider different areas of interactions such as the social structure of the country, the rules of the games, the play of the game, the allocation mechanism (JÜTTING, 2003). If the rules are efficient, the economic, political, legal and social interactions will create effective conditions for growth and Human development. Consequently, our first hypothesis is: *(H1) Institutions have a direct link on Human development.*

A complete set of formal institutions is composed of market institutions supported by political institutions to avoid stickiness or incompatibility between imported rules and local practices. Our second hypothesis is: *(H2) Market institutions supported by reliable political institutions will enhance human development ceteris paribus.*

The local Institutional arrangement is a recombination (DJELIC & QUACK 2003) that includes institution building (creation) but also institution reshaping (i.e. redeployment of resources in a context of communist legacy) in order to create a new environment for business. Our last hypothesis is: (H3): *A rapid institutional recombination will enhance Human development ceteris paribus.*

The speed of institutional recombination depends on the matching of formal institutions with informal once. For the new EU Members States, the process of integration, the cultural proximity and historical links with old members should make easier the matching process than for CIS members. The analytical framework is resumed in figure 1.

Figure 1: The hypothesis of our model

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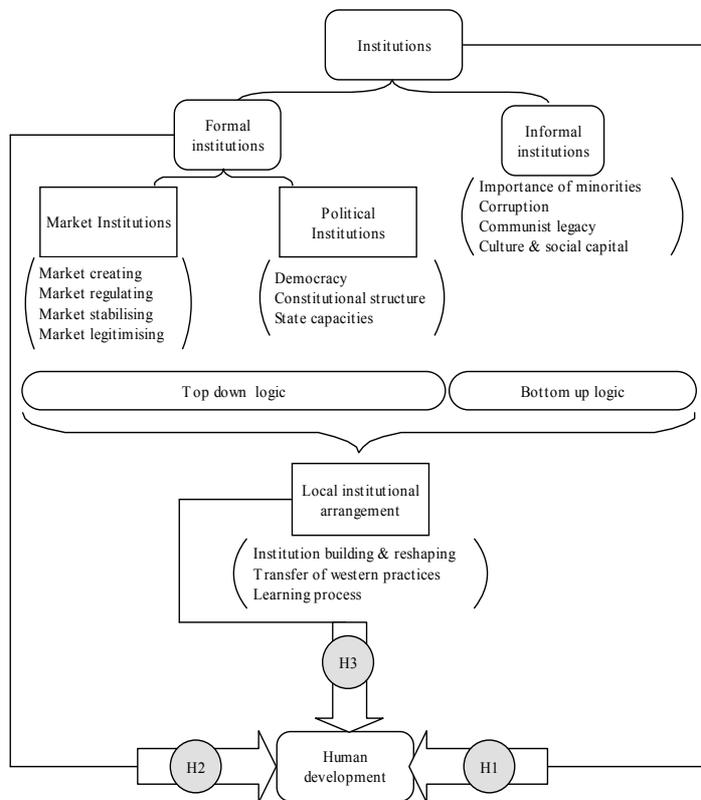
Our purpose now is to give more content to the link "Institutions and Human development" by doing an empirical analyse.

3. Empirical Analysis

In the present section we will present our methodology and data (3.1.), our model specification (3.2.) and finally our results and comments (3.3.).

3.1. Methodology and data

We test the hypothesis stated in the previous section. The choice of representative variables to measure institutions (3.1.1) and Human development (3.1.2) is important in a context of abundant but controversial literature.

3.1.1. Measuring institutions

Measuring Institutions is subjective and complex. Formal institutions are measured by various proxies resuming the assessments of experts on different aspects of the institutional environment such as corruption, bureaucracy, law, property rights protection, etc. It is subjective because based on the economic actors' *perceptions and feelings.* Nevertheless, an objective measure of such institutions does not exist[8].

Informal institutions play an important role in Human development process (DENZAU & NORTH, 1994; HELMKE & LEVITSKY, 2004; MANTZAVINOS, NORTH & SHARIQ, 2004; OECD, 2006; ROGOFF, 2003). NORTH (1990, p.36) wrote: "*it is much easier to describe and be precise about the formal rules that societies devise than to describe and be precise about the informal ways by which human beings have structured human interaction. But although they defy, for the most part, neat specification and it is extremely difficult to develop unambiguous tests of their significance, they are important.*"

Informal institutions are generally captured by survey data based on *people's declarations about their beliefs and wisdoms.* To estimate informal institutions, authors (KNACK, 2001; KNACK & KEEFER, 1995, 1997; KNOWLES & WEATHERSTON, 2006; LA PORTA & *al.,* 1997) use the World Value Survey[9] (WVS) which is based on a great survey data covering 85 countries and describing people's beliefs on 7 topics (Perceptions of Life, Environment, Work, Family, Politics and Society, Religion and Morale, National Identity). Data are not available for all the countries we have selected in our panel, and the set of questions available within the WVS do not fit all our needs. We have introduced two other criteria: the percentage of national or ethnic minorities in the population of a country and, the degree of corruption.

The percentage of national or ethnic minorities in the population of a country is relevant because most of the countries of our panel have a strong national or ethnic minority. For example, it's an important phenomenon that had led to civil war in former Yugoslavia or in Tajikistan last decade. Moreover, the good treatment of

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[8] For a more extensive view concerning Data Bases on Governance Index see DUC C. & LAVALLEE E. (2004)

[9] http://www.worldvaluessurvey.org

the national or ethnic minority by the government is one of the Amsterdam's criteria to access to the EU Membership. The degree of corruption is a proxy of informal practices in a society. For example, a high level of corruption deters foreigners to develop business or to set up affiliates. Corruption creates an unstable and unsafe environment for business because of the opacity of the rules for the outsiders (GRAY & al., 2004).

Table 1 - Measure of Formal Institutional quality and choice of representative variables

PRS Index	The *International Country Risk Guide* (*ICRG*) published by the PRS Group rating comprises 22 variables in 3 subcategories of risk: political, financial, and economic. The *Political Risk index* provides a means of assessing the political stability of the countries. It is based on a score of 100 points. The *Economic Risk index* provides a means of assessing a country's current economic strengths and weaknesses. In general terms when strengths outweigh weaknesses, the country will present a low economic risk and reversely, when weaknesses outweigh strengths, it will present a high economic risk. The Index is based on a score of 50 points. The *Financial Risk index* provides a means of assessing a country's ability to pay its way. In essence, this requires a system of measuring a country's ability to finance its official, commercial, and trade debt obligations. It is based on a score of 50 points. The total points from the three indices are divided by two to produce the weights for inclusion in the composite country risk score. The composite scores, ranging from zero to 100, are then broken into categories from Very Low Risk (80 to 100 points) to Very High Risk (zero to 49.5 points). Source: http://www.prsgroup.com (Free and open data)
Index of Economic Freedom	The Index of Economic Freedom is provided by Heritage Foundation and concerns 161 countries. It is composed by 50 independent variables split into 10 categories of economic freedom. For each country, this index gives an economic freedom score that is the simple average of the ten categories average score. The score is ranking from 0 (bad) to 100 (best). Source: http://www.heritage.org (Free and open data)
Frazer Index	The Frazer index is provided by the Frazer Institute and covers 5 categories: the size of governments, the legal structures and security of property rights, the access to sound money, the freedom to trade internationally the regulation of credit, labour and business. It concerns in 2004, 132 countries. The score is ranking from 1 (very bad) from 9 (excellent). Source: http://www.freetheworld.com (Free and open data)
World Bank Governance Indicators	KAUFMANN, KRAAY & MASTRUZZI (2005) have developed the World Bank Governance Indicators concerning the period 1996-2004, covering 6 categories of governance: voice and accountability (measuring political and civil right); the political instability and violence (measuring the likelihood of violent threats to or changes in government), the government effectiveness (measuring the competence of the bureaucracy and the quality of public service delivery), the regulatory burden (measuring the incidence of market unfriendly policies), the rule of law (measuring the quality of contract enforcement, the police and the courts…) and the control of corruption (measuring the exercise of public power for private gain including corruption and state capture). The 6 governance score are ranking from -2,5 (bad governance) to 2,5 (best governance). Source: http://www.worldbank.org/wbi/governance/data/html (Free and open data)
EBRD Indicators	The EBRD provided 2 main types of indicators : *The structural change indicators* are a quantitative foundation for analysing progress in transition. They contain structural and institutional indicators in the areas of enterprises, markets and trade, financial sector and infrastructure. The data are based on a wide variety of sources, including national authorities, other international organisations and EBRD staff estimates. To strengthen the degree of cross-country comparability, some of the data were collected through standardised EBRD surveys of national authorities. *The transition indicators* have to track reform developments in all countries of operations since the beginning of transition. Progress is measured against the standards of industrialised market economies, while recognising that there is neither a "pure" market economy nor a unique and rapid end-point for transition. The measurement scale for the indicators ranges from 1 to 4+, where 1 represents little or no change from a rigid centrally planned economy and 4+ represents the standards of an industrialised market economy. Assessments are made in 9 areas: large scale privatisation, small scale privatisation, governance and enterprise restructuring, price liberalisation, trade and foreign exchange system, competition policy, banking reform and interest rate liberalisation, securities markets and non-bank financial institutions, and infrastructure. Source: http://www.ebrd.org (Free and open data)

3.1.2. Measuring Human Development

As shown by DESAI (1991) or GERRING and THACKER (2001), it is not easy to measure Human development. The current literature uses three types of indicators resumed in table 2:

The *Infant Mortality Rate* (IMR) seems to be the best criteria because it is easily available and its variance between the countries composing our panel is important and reflect the differences in level of development (see graph 1 & 2 in annex). Furthermore, as LAZAROVA (2006) or MISHRA and NEWHOUSE (2007) stressed, good institutional governance is supposed to have a positive effect on infant mortality rate. Moreover, ZWEIFEL and NAVIA (2000) or NAVIA and ZWEIFEL

(2003) have shown that the level of IMR is linked to the political regime: IMR is higher in a dictatorship than in a democracy.

Table 2 – Measure of Human Development

Type	Indicator	Choice criterion
Income measures	Index of poverty rate	It's very ambiguous to use this type of index in the case of the poorest economies where informal market and informal revenue play an important role.
Combinatorial indices	Human Development Index Physical Quality of Life Index	For these two index, the risk of endogeneity between variables is very high
Measures of mortality	Child Mortality Rate (1-5 year) Life expectancy Infant Mortality Rate (0-1 year)	Child mortality is not sufficiently available for our panel. Life expectancy is too stationary for a short period. IMR is more convenient for an analysis and well reflect the differences of quality of life between different countries (its variance is greater than the variance of life expectancy).

3.2. Model specification

We distinguish two categories of host countries, the **new EU members** (Estonia, Latvia, Lithuania, Poland, Hungary, Czech Republic, Slovenia, Slovakia, Romania and Bulgaria); and the **CIS** (Russia and Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Ukraine, Uzbekistan)[10]. The new EU members are middle income countries and may be considered as leading reformers (DABROWSKI & GORTAT, 2002). They entered the European Union in 2004 and in 2007, and have more efficient institutions thanks to the close fulfilment of the *Acquis communautaire criterion* (i.e. the convergence towards EU best practices). The CIS countries are late-comers in transition and thus are less advanced in reforms. They have a lower income than new EU members and still have an immature capitalism and Democracy.

The period concerned by our empirical analysis is 1994-2006. Traditionally, authors use cross sectional analysis (GROGAN & MOERS, 2001; POURNARAKIS & VARSAKELIS, 2004) but few use pooled regression which combine time series and cross sectional data (DEMEKAS & al. 2005). In the present empirical analysis, we use pooled regression which we consider as a relevant methodology for heterogeneous data and a relative short time series. The equation is tested through the generalized least square (GLS) method to avoid heteroscedasticity. Our empirical model is built for each year t and for each host country c. The specification of the model is as follows:

$$IMR_{ct} = c0 + \acute{\alpha}1\ GDPPC_{ct} + \acute{\alpha}2\ FORMAL_{ct} + \acute{\alpha}3\ INFORMAL_{ct} + \varepsilon$$

The explained variable IMR_{ct} is the infant mortality rate for each year t in each host country c. It is the number of child death under 1 year per 1000 birth. Among the *independent variables*, $GDPPC_{ct}$ represents the real growth rate of GDP per capita for each year t in each host country c. It should be a proxy for growth (CHAKRABARTI, 2001) and will be used as a control variable to capture the demand impact that may boost the economic activity (see annex, graph 3 & 4). An improvement of GDPPC should enhance a decrease of IMR so that the expected sign should be negative.

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[10] Turkmenistan has been excluded from our panel because of it discontinued membership. Since August 26, 2005 it is an associate member of the CIS.

As developed in Table 3, the variable FORMAL represents formal institutions. To measure *market institutions* we have chosen some EBRD Transition Index. All these indexes vary from 1 (very bad) to 4+ (excellent). An improvement of market institutions should enhance a decrease of IMR. The expected sign of all market institutions variables should be negative.

Table 3 – Representative Variables for Formal and Iformal Institutions

| Institution	Indicators	Description	Exp. sign
FORMAL INSTITUTIONS - Market institutions			
Market creating institutions	Enterprise Reform (ER)	The variable ER represents the EBRD index of enterprise reform for each country j and year t. To capture progress in enterprise reform, EBRD retains, for its evaluation, criteria such as the reduction of budgetary subsidies to enterprises, the improvement of tax collection, the share of industry in total employment and the change in labour productivity. ER varies from 1 (no progress) to 4+ (excellent near standard of advanced economies *(Source: EBRD, Transition Report)*	-
Market Regulating Institutions	Competition Policy (CP)	The variable CP is for country j and year t the EBRD index of competition policy. CP should measure the progress in the reform of competition policy. This is an evaluation of privatization in a quantitative perspective (share of private enterprise) but also in a qualitative one (efficiency of privatization method, the result of a privatized enterprise, and a share of foreign investor in capital). CP varies from 1 (low) to 4+ (excellent). *(Source: EBRD, Transition Report)*	-
Market Stabilizing Institutions	Banking Reform & Interest Rate liberalization (BR)	The variable BR is for country c and year t the EBRD Index of Banking Reform. BR should measure the progress in the reform of banking sector. This is an evaluation of privatization, and performance of regulation system of this sector. BR varies from 1 (low) to 4+ (excellent) *(Source: EBRD, Transition Report)*	-
Market Legitimizing Institutions	Expenditure on Health and Education (EHE)	The variable EHE is for country c and year t the expenditure on health and education as a percentage of GDP. These expenditures are those from general government, excluding those by state-owned enterprises. The expected sign should be positive because EHE reflects the improvements of the local social and human capital. *(Source: EBRD, Transition Report)*	-
FORMAL INSTITUTIONS - Political institutions			
Democracy	Democracy Score ranking (DSR)	The ratings are based on a scale of 1 to 7, with 1 representing the highest level of democratic progress and 7 the lowest. DSR is an average of ratings for Electoral Process (EP); Civil Society (CS); Independent Media (IM); National Democratic Governance (NGOV); Local Democratic Governance (LGOV); Judicial Framework and Independence (JFI); and Corruption (CO), *(Source : Freedom House)*	+
Constitutional Structures	Federalism degree (FD)	Dummy = 0 for unitary country Dummy = 1 for semi-federalism or federalism	?
State Capacities	General Government Debt (GGD)	GGD is the percentage of General Government Debt in the GDP. *(Sources : EBRD, Transition Report.)*	+
INFORMAL INSTITUTIONS			
Importance of Minorities	% of Minorities in the Total population (M)	Minorities> 10% of Total population = Dummy = 1 Minorities< 10% of Total population = Dummy = 0	?
Index of Corruption	Corruption Perception Index (CPI)	This factor relies on Transparency International's Corruption Perceptions Index (CPI), which measures the level of corruption in 152 countries. *(Source : Transparency International)*	-

For the *political institutions* we have chosen three indicators. The first is the *Democracy Score Ranking* provided by the Freedom House. The expected sign is positive because we suppose that an improvement of DSR (ie. an improvement of democracy) should also induce and improvement of IMR. The second index is the *federalism degree (FD).* To measure it we have chosen a dummy variable (0 = Unitary

State, 1 = Semi-Federalism or Federalism). The expected sign is not obvious in the case of transition countries and could be influenced by the history of each country. The third index is the percentage of *General Government debt* (GGD) in he GDP provided by EBRD. The expected sign is positive. A reduction of GGD means an improvement of the financial situation of the country and should facilitate a reduction of IMR. Consequently, we suppose that GGD and IMR vary in the same way.

The Variable INFORMAL represents informal institutions. To measure informal institutions we use the percentage of *national or ethnic minority (M)* in the population of a country. If the minority represent more than 10% of the population the dummy takes the value 1 and if the minority represent less than 10%, the dummy takes the value 0. The expected sign is not clear. We also use the Corruption Perception Index provided by Transparency International. The expected sign is negative because we suppose that CPI and IMR vary in an opposite way.

The pattern of our model is resumed in figure 2 below. All these variables are proxies of the perceived quality of the formal and informal institutions. These measures are subjective but close to the actor's perceptions of the local business environment climate.

Figure 2: The model tested
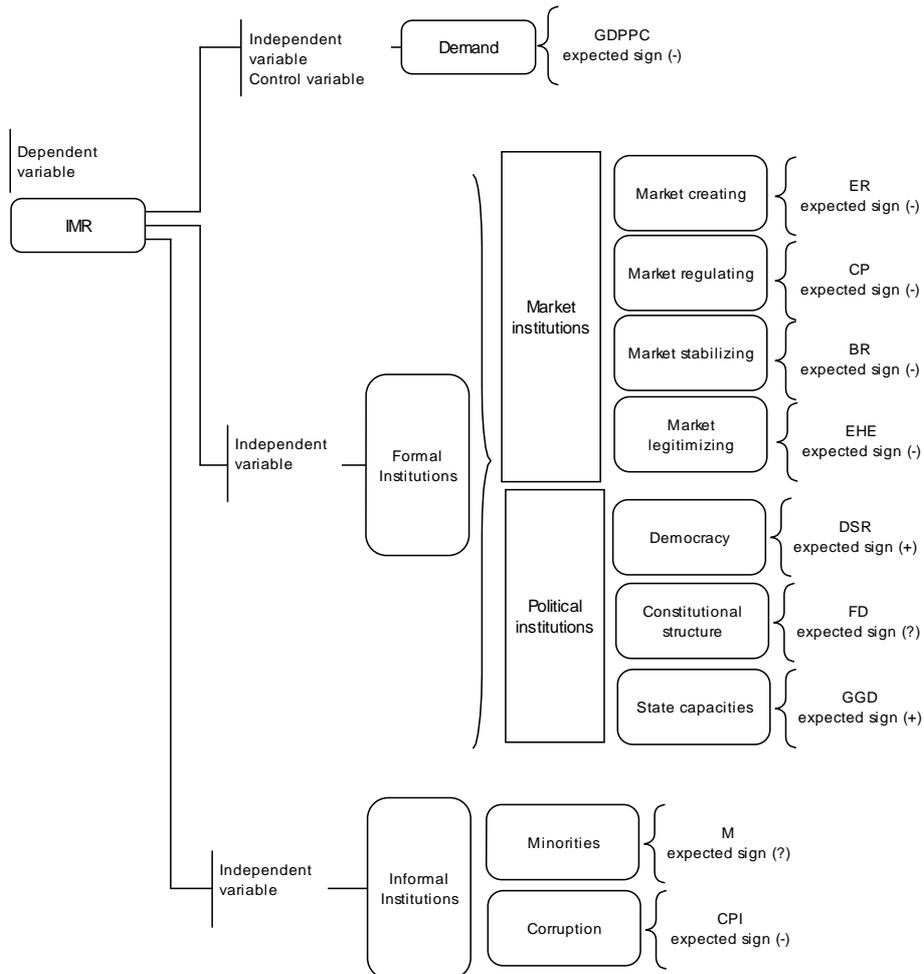
3.3. Empirical Results

3.3.1. The new EU Members

For the *New EU Members panels* (Table 4), in all the equations tested, adjusted R^2 and the F-test results have acceptable values; the control variable has the expected sign and is statistically significant. The sign of the intercept is positive and significant, informing us that, if all independent variables where null, IMR would increase. The control variable (GDPPC) is negative and significant. An increase in income per capita plays a positive role on IMR improvement. This effect is relatively weak because GDPPC does not reflect the inequalities in income distribution among the population.

Table 4 – Results for the New EU Members

Variable	Eq. (1)	Eq. (2)	Eq. (3)	Eq. (4)	Eq. (5)
C	20.67490 (0.0000)	30.10685 (0.0000)	9.414700 (0.0000)	20.92548 (0.0000)	16.76249 (0.0000)
GDPPC	-0.000276 (0.0000)	-0.000511 (0.0000)	-0.000632 (0.0000)	-0.000496 (0.0000)	-0.000863 (0.0000)
ER	-2.112393 (0.0006)	-1.250172 (0.1224)		-1.715347 (0.0137)	
CP	-2.223382 (0.0000)	-2.049618 (0.0008)		-1.597968 (0.0016)	
BR	-0.243262 (0.6098)	-0.614309 (0.2487)		0.582632 (0.2756)	
EHE	-0.075099 (0.5250)	-0.686977 (0.0000)		-0.295312 (0.0061)	
DSR	1.426482 (0.0000)		3.460413 (0.0000)	2.041604 (0.0000)	
FD	-4.116091 (0.0000)		-1.260707 (0.0213)	-1.636114 (0.0002)	
GGD	0.013009 (0.0014)		0.009846 (0.0182)	0.005875 (0.1649)	
M	3.295334 (0.0000)				0.309289 (0.5720)
CPI	0.054823 (0.0001)				-0.059389 (0.0004)
Adjusted R2	0.894870	0.858903	0.880267	0.849701	0.888161
S.E. of reg.	1.700233	2.090106	2.143648	1.825054	2.925273
DW.	0.787510	0.436321	0.665013	0.612625	0.395557
Prob. (F-stat)	0.0000	0.0000	0.0000	0.0000	0.0000
Total panel : 130 – period: 1994 – 2006 – Numbers in brackets are probabilities					

The results for the *market institutions* are ambiguous. CP has the expected sign and is significant; ER has the expected sign but is significant at 12% in equation (2); BR is never significant and EHE has the expected sign but is not statistically significant in equation (1). Nevertheless, in equation (2) where market institutions are tested alone, only CP and EHE are significant and have the expected sign. We can

note that in equation (2) EHE becomes significant but plays a weak role. This weakness of the influence of EHE (not significant in eq. (1) and weak role in eq. (2 and 4)) may be explained by the fact that in the New EU Members, the reform of Health System has reduced the positive impact of Health Public Spending on IMR. Market institutions influence IMR when they are estimated alone (eq. 2).

For the *political institutions* in equation (1), all variables are significant. DSR plays a positive and important role on IMR confirming most of the precedent studies. FD plays a negative role. The existence of semi-federalism or federalism may facilitate greater inequalities between regions than in a unitary State. Nevertheless, when political institutions are tested alone in equation (3), DSR plays the major role on IMR. Finally, GGD is significant and has the expected sign in equation (1) and (3) but the influence on IMR is weak.

In equation (4) we have tested all the variable representing formal institutions. The results confirm the equation (1) where all variables where tested. The major difference is for GGD who become not significant on equation (4).

The results for *informal institutions* are not really satisfying and stable. M is positive and significant in equation (1) but not in eq. (5) and CPI is significant but has not the expected sign in equation (1). One explanation may be that in the new EU countries, the minority problem seems to be resolved because it was a prerequisite to entry the EU. Corruption has a positive impact on IMR. One explanation may be that corruption permits a better access to the new health and care system[11]. Equation (5) where informal institutions are tested alone, confirm that M is not significant but CPI has the expected sign contrary to equation (1). The interpretation for informal institutions is difficult and ambiguous.

3.3.2. The CIS Members

For the *CIS members* (Table 5), except in equation (3), the sign of the intercept is positive but not always significant (eq. 1,3,4). The control variable (GDPPC) is negative but significant for equation (2, 4 and 5). An increase in income per capita plays a positive role on IMR improvement. This effect is relatively weak because GDPPC does not reflect the inequalities in income distribution among the population which is important in CIS countries.

As far as the formal institutions are concerned, the results aren't always significant for ER and CP. In equation (1), the results are relevant but in equation (2) and (4), only EHE is significant. BR has unstable results: it is not significant in equation (2) and has not the expected sign in equation (1 and 4). The reform of the banking system may not be efficient and the banking system may not be spread out in the society. These results may be confirmed by the importance of EHE for these countries. Public Health Spending seems to play a major role contrary to the New EU Members. Nevertheless equation (2) where market institutions are tested alone, ER remains not significant, CP and BR become not significant and EHE stays statistically significant and has the expected sign. Market institutions seem to be less important than in the New EU Members. The impact of European integration and the proximity (geographically and historically) of the New EU Members with "old" EU members States could be an important explanation for this differences.

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[11] It corresponds to the payment of a specific amount of money to avoid queuing and so to access rapidly to health care on a "private" base.

For the political institutions in equation (1) all variables are significant. DSR plays a positive and major role on IMR but DSR plays a higher role in the case of CIS Members than in the case of New EU ones reflecting the gap in term of democracy between CIS members and New EU Members. FD has a negative sign confirming that a unitary State is more favourable to an improvement of IMR than federalism. GGD is significant and has the expected sign reflecting that a high level in debt deters IMR. In equation (4) where all variables concerning formal institutions are tested, political institutions seem to have a major role. Compared to New EU Members, in the CIS countries, the role of market institutions is less important. On the contrary, EHE and BR have a higher importance.

Table 5 – Results for the CIS Members

Variable	Eq. (1)	Eq. (2)	Eq. (3)	Eq. (4)	Eq. (5)
C	9.905933 *(0.3467)*	84.01087 *(0.0000)*	-1.653600 *(0.7000)*	3.480493 *(0.7836)*	55.87661 *(0.0000)*
GDPPC	-0.001459 *(0.3195)*	-0.008738 *(0.0000)*	-0.001159 *(0.4096)*	-0.004758 *(0.0093)*	-0.009020 *(0.0000)*
ER	-8.268912 *(0.0494)*	-0.305862 *(0.9640)*		-3.237669 *(0.5126)*	
CP	-12.29782 *(0.0008)*	-2.827724 *(0.6697)*		-5.922477 *(0.1876)*	
BR	17.89340 *(0.0000)*	-5.577435 *(0.2779)*		9.681831 *(0.0314)*	
EHE	-2.299500 *(0.0000)*	-2.160779 *(0.0002)*		-1.288856 *(0.0005)*	
DSR	10.37315 *(0.0000)*		8.653749 *(0.0000)*	10.19060 *(0.0000)*	
FD	-19.28310 *(0.0001)*		-21.71945 *(0.0000)*	-11.68529 *(0.0405)*	
GGD	0.212563 *(0.0000)*		0.137135 *(0.0005)*	0.095150 *(0.0499)*	
M	18.01376 *(0.0000)*				10.55482 *(0.0000)*
CPI	-0.704215 *(0.0000)*				-0.462366 *(0.0103)*
Adjusted R2	0.712332	0.222837	0.687899	0.703000	0.856644
S.E. of reg.	12.51766	21.53323	17.15373	15.13772	21.17066
DW.	0.721405	0.064627	0.231776	0.241569	0.135381
Prob. (F-stat)	0.0000	0.0000	0.0000	0.0000	0.0000
Total panel : 143 – period: 1994 – 2006 – Numbers in brackets are probabilities					

In equation (1) as in the equation (5), the *informal institutions* are significant and have the expected signs. We can observe the influence of minorities in the negative evolution of IMR. It is not really surprising in countries with a high degree of minorities no protected and most of the time excluded from the political decision process. Finally, the existence of corruption plays a negative role on IMR.

The two groups of countries have specific results. The initial level of development combined with the historic and political anchorage to EU *versus* Russia, explain these results. The results of our empirical test appear to confirm our expectation that IMR is sensitive to specific and local institutional arrangements telling us that our first hypothesis (H1) may not be rejected. (H2) through the equation (4) is also confirmed for both panel so as (H3). The combination of formal and informal institutions may explain the improvement of the Human development of each country.

4. Conclusion

IMR in new EU members is linked to demand and among institutions, market creating and regulating institutions (ER, CP) have the most important impact so as DSR and FD for political institutions. IMR is more sensitive to institutions in CIS countries than in the new EU members. How may we explain this differentiated sensibility to institutional arrangements?

A first element of explanation is certainly the EU Enlargement process and mainly the *Acquis communautaire* criterion. Before joining the EU, new members had to improve considerably their institutions in order to fulfil most of the EU requirements. Such an improvement created an institutional shift towards more stability and transparent rules. The *Acquis communautaire* was an accelerator for institutional building and reshaping in candidates countries.

A second element of explanation is that, compared to EU members, CIS' institutional arrangements may be seen as immature, unstable and less reliable because the informal institutions and political institutions have a relative important effect on IMR. The role of institutions in improving IMR should be explored and deepened.

This last point suggests that the initial level of development and the starting conditions of transition should be taken seriously in consideration. CIS countries have deep cultural and ethnical specifications that create conditions for a strong informal Institutional pattern which influences the formal Institutions building. This situation develops specific conditions for change and generates a large *socialist past dependence* process. A major question we should answer in a future paper is whether the differentiated IMR is linked to the UE integration process, to a cultural and historical proximity and/or a geographical distance effect.

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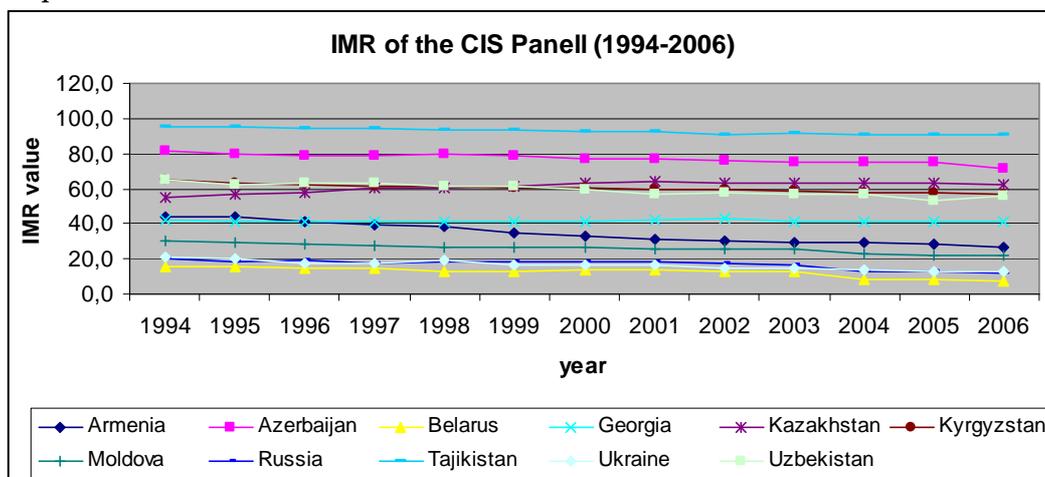
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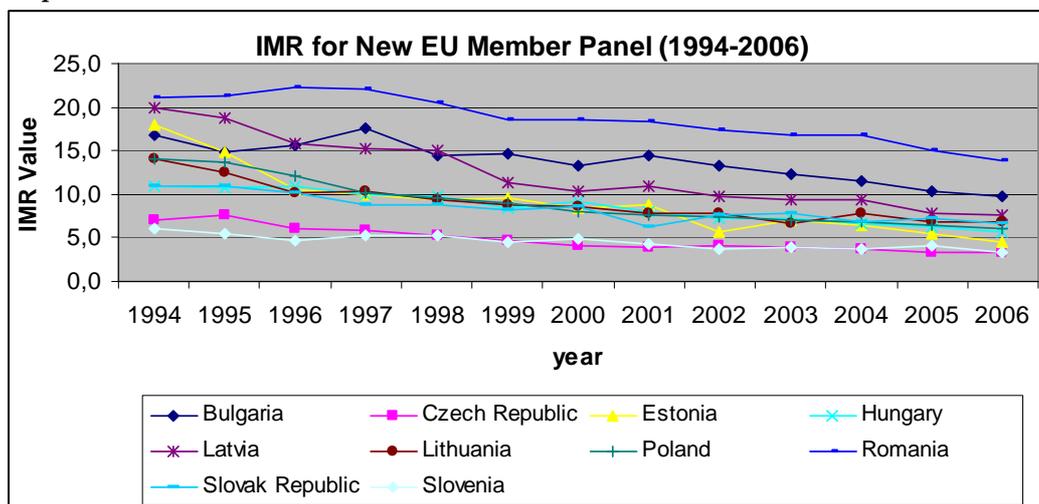
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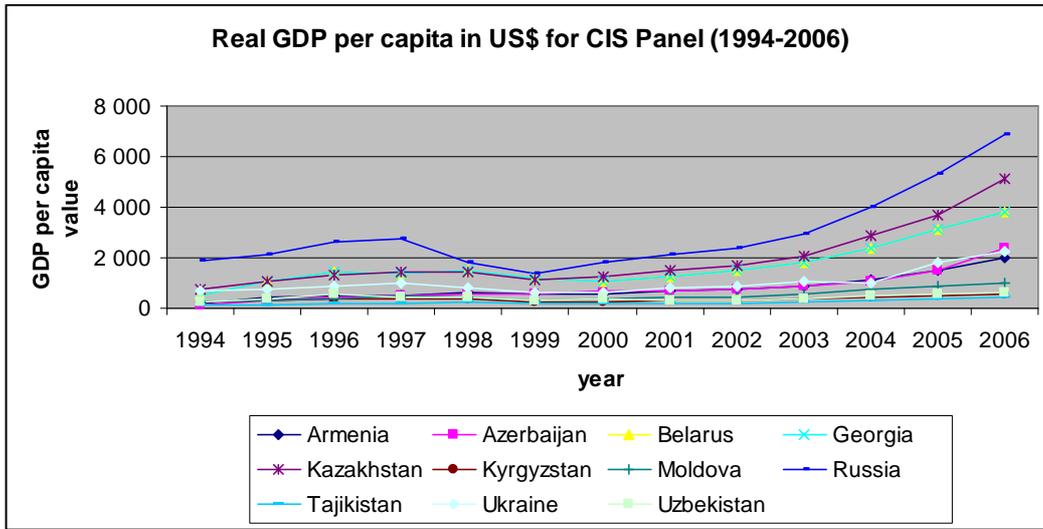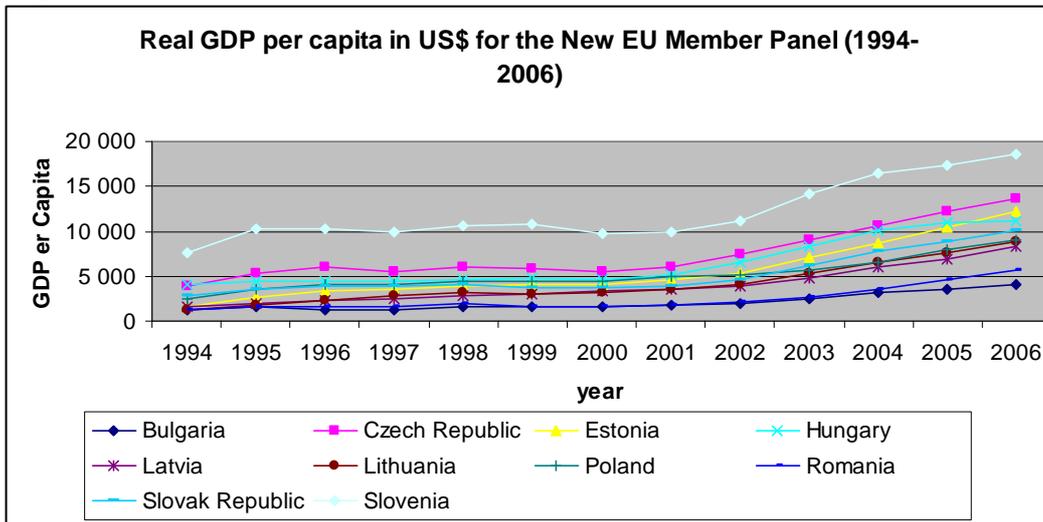
Annex

Graph 1

Graph 2

Graph 3

Real GDP per capita in US$ for CIS Panel (1994-2006)

Graph 4

Real GDP per capita in US$ for the New EU Member Panel (1994-2006)

Graph 5

Real GDP Growth Rate in % (1995-2005)