



# Institutional Change and Governance Indexes in Transition Economies: the case of Poland

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## Abstract

In the former communist countries, institutional change, i.e. transition towards market economy, is affected not only by introduction of law and formal institutions (change “by design”), but also by social norms, old values and habits (informal institutions). I present an empirical paper focusing on transition of the Polish Economy. I used a questionnaire which was administered to a sample of about 1000 Polish firms in order to verify the impact of economic institutions on the “residual productivity”. Throughout the questionnaire I built six governance indexes. Then I tested the impact of the governance indexes on the productivity of firms. I observed that the economic performance of the eastern regions of Poland, where governance indexes are worse than western, are poorer than that of the western regions of Poland.

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## 1. Introduction

There has been burgeoning literature within economics that discusses and analyses institutions (see North 1990; Nugent and Lin 1996; Nelson and Winter 1982; Jones and Hall 1998; Olson et al. 1998; Rodrik 1999; Robinson et al. 2001; Glaeser et al. 2004; Bardhan 2005). The attention of international organisations and policy makers has focused more on the importance of institutions for economic growth. Institutional economists, economic research centres and international organisations have built indexes of governance which measure an institutional quality of developing and advanced countries.

Generally, institutional indexes have common aims, namely measuring governance capacity and the quality of institutions. However, they use different methodologies and they are commissioned by different organisations such as the IMF, the World Bank, the EBRD and business clubs. Hence, these indexes are dissimilar because they depend on the commissioners’ focus of research, for example, investment risk taxonomy, corruption level, the quality of bureaucracy, political stability, etc. Some indexes, such as EBRD indexes and indexes of Kaufmann, Kray and Zoido-Lobatio 2003, are essential for a comparison of formal economic institutions among countries and measuring the impact of formal institutions. However, very little attention has been paid to informal institutions.

In this paper I will propose some governance indexes which can capture the reality of transition economics in Central and Eastern European Countries (CEECs). They

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encompass different dimensions of institutional change occurring in those countries. I have built some indexes of governance which take into account elements that are evolving in transition economies, such as: property rights, habits, values, informal institutions, quality of bureaucracy, support of public institutions to business and a cost of institutional transformation. I think that formal and informal economic institutions captured by my indexes have a significant impact on the productivity as a “residual”.

I have used a questionnaire administered to a significant sample of Polish firms in order to discover formal and informal spheres of economic institutions affecting an economic agent's behaviour. In particular, my indexes aim to capture the following concepts: 1) Support of public institutions for the firms; 2) Lobbying and rent seeking; 3) Persistence of informal institutions and previous habits; 4) Corruption; 5) Other official and unofficial costs coming from institutional transformation such as: acquiring new property rights, building new public institutions and governmental agencies, etc; 6) Harmonisation of formal economic institutions to EU law; 7) Impact of foreign direct investments; 8) Legal system and reinforcing of property rights; 9) Trust between economic agents and, generally, trust in the public institutions. The governance indexes which I have proposed are the following six: Trust; Support of Public Institutions; Corruption and Extra-Costs; Adjustment of Formal Institutions; Persistence of Informal Institutions; Legal System and Property Rights. In addition, I propose also some measurements of economic performance of the firms, such as: productivity, employment and turnover.

The aim of this paper is to evaluate the impact of economic institutions, both formal and informal, on the economic performance, during the institutional change of CEECs. I use both subjective answers of firms concerning productivity trend and actual productivity data of the same firms. My hypothesis is that certain informal rules of former planned economies such as lobbying, rent seeking, privileges, old habits and values are predominant in the new market economies and influence relations between economic agents. Moreover, my analysis attempts to explain the difference, in terms of GDP and economic development, between eastern and western Poland. I claim that in the West, better governance allows for a better economic performance than in the East. The paper is composed as follows: in section 2 I explain my hypotheses; in 2.1 I describe the adopted methodology; in 2.2 I discuss the sample composition; in 2.3 I describe the questionnaire; in section 3 I present the construction of my governance indexes; in section 4 I prove a statistical difference between East and West Poland's indexes; in section 5, through a chi-square ( $\chi^2$ ) analysis and contingency tables of the questionnaire responses, I start to observe a correlation between indexes and productivity; in section 6 I use an ordered probit model in order to see how far indexes and productivity are correlated, then in section 7 and 7.1 I discuss and withdraw some implications of governance index differentials for the Polish dualism. Moreover, in 7.1 I use an OLS model to correlate my indexes and actual productivity data of respondent firms. I conclude with some final remarks.

## **2. Concepts and Hypotheses**

My empirical research focuses on the economic transition of Poland, using a questionnaire addressed to a sample of Polish firms. The aim is to build some governance and institutional quality indexes. Hence, I will estimate the impact of these indexes on the economic performance of Polish firms. The indexes I built differ from

other governance indexes because they capture two important features: informal institutions and an extra-cost factor.

The extra-cost factor is the transformation institutional cost which seems to be very important in former communist countries and which is entailed by acquiring costs of property rights in uncertain circumstances, by starting-up costs of new governmental agencies, by corruption, by unofficial and official costs of bargaining between agents in the economic transactions, by costs of emerging market institutions. The features of the extra-cost factor are captured by the Index: Extra-Cost and Corruption, which I suppose (H.1) has a negative impact on economic growth.

Informal institutions are norms, values, routines and social rules which affect in several ways the economic behavior of agents and their choices (Nugent and Lin 1996).

Informal institutions can be divided in two groups:

Informal institutions which, I assume (H.2), have a negative impact on the economic growth (old rules from the previous regime inconsistent with the new ones, old lobbies linked to particular groups, inertia to the institutional change, privileges, lobbying and rent seeking). They are captured by the index "Persistence of Informal Institutions"

Informal institutions which imply trust, respect of the agreements and of agreed rules, cooperation relations between agents, mutual confidence among parties to an economic transaction, exchange of information and circulation of knowledge, in a broader sense "Social Capital" (Raiser 1999). I assume (H.3) that they have a positive impact on the economic growth. These are captured by the index "Trust".

Other hypotheses which I aim to test are the following:

H.4 Economic institutions, both formal and informal, affect the economic behaviour of agents by imposing social constraints and structuring social interactions, and have a strong impact on the economic performance.

H.5 The better the governance and the quality of formal economic institutions are (legality, property rights, support of the public institutions, bureaucracy, and adjustment of the national institutions to EU norms) the greater positive impact on economic performance is.

H.6 Governance, quality of economic institutions, and formal and informal institutions are very different in the East and the West of Poland.

H.7 The difference in productivity and in general the dualism between eastern and western Poland is due, under the same conditions (i.e. technology, human and physical capital), to the institutional factor, i.e.: diversity of economic institutions, different governance and above all to the informal sphere of the economic institutions.

Some of the hypotheses listed have been extensively discussed in the institutional economic debate (H.1: Commons 1934, Knight 1992; H.3: Arrow 1975, Olson 1982; H.4: Kaufmann et al. 2003; H.5: Alchian 1950). Moreover, all of them are strongly linked. This means that verifying some of them could justify the others. Therefore, I will test those hypotheses by groups: (H.1 H.2 H.3 H.4 H.5); (H.6 H.7).

## **2.1 Methodology**

In order to verify my hypotheses I used a Business Survey methodology. I built a questionnaire, composed of 40 questions addressed to a sample of Polish firms and structured according to the criteria that I will present below. The questionnaire contains

questions about the sphere of institutional economics and governance, from the support of public and administrative institutions, to the trust relations between economic agents, corruption, illegal costs, bribes, the informal economy, property rights, persistence of old economic institutions, harmonisation to EU norms and other national law, the impact of Foreign Direct Investment (FDI), the legal environment, the presence of lobbies, interest groups, etc. To sum up, my questionnaire tries to test the impact of economic institutions on the Polish economy during institutional change by applying a concept of institutions which reflects a wider definition of economic institutions and embraces both the formal and informal sphere of institutions.

In particular, I want to verify, from an empirical point of view, whether informal institutions and not only formal institutions, affect the behaviour of economic agents and have an impact on economic performance (productivity) and on economic development. The economic agents examined in this research project are only the firms. The measurement of the impact will be analysed through the comparison of six indexes of governance with productivity. I will analyse the impact of the indexes on economic performance by dividing the 16 Polish *voivodships* into two macro-regions, the regions of the East and the regions of the West. The line of division between the East and West is a geographic border, the Vistula river. The reason why I decided to analyse Poland dividing it into 2 macro-regions finds its fundament in the history.<sup>2</sup> The Vistula divides Poland nearly in half, from the Baltic Sea to the south of Poland. The Vistula is also a cultural, political and economic border for Poland. For centuries it has represented the dividing line between two very different political and administrative systems.

Economic, political and social factors of these two regions seem to be very different in many aspects, similar to those observed in the Italian North/South dualism (Gorzela 1999). The differences between the East and West are apparent in terms of GDP, unemployment and infrastructure (Walsh, 2000). The split between the East and the West emerges in the dimension of the informal institutions (the indexes "Persistence of the informal institutions" and "Trust" seem to capture this division). Although the law and formal institutions are the same throughout the country, the informal rules often differ significantly and consequently also the economic performance differs. This dualism emerges also in the quality of the administrative divisions, in the effectiveness of the law, and, therefore, in the quality of formal institutions and governance capabilities. Hence, it is necessary to have, as I proposed, disaggregate indexes for macro-regions, in order to capture these significant differences between western and eastern Poland.

The economic divergence between the East and West is a phenomenon based on 3 important elements: 1) higher income, 2) lower unemployment, and 3) better economic development in western than eastern Poland (Transition Report 2000; Country Report Poland - EIU 2000; Gorzela 1999; Blazyca and Rapacki, 2001). The explanation of these differences can be found, I predict, in the difference of the economic institutions, both formal and informal. Consequently, I will test how economic institutions impact on "residual" productivity in eastern and western Poland.

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<sup>2</sup> The origin of the Poland's East/West dualism can be found in the different *partitions* of Poland between 1776-1918 which divided the country into several administrative parts under foreign powers such as: Prussia, the Austrian Empire and Russia. Russian occupation was consolidated to the East of the Vistula river, while the German occupation was attested to the west side. For interesting information on the history of the partition and occupation of Poland see: Norman Davies (2001).

## 2.2 Sample Composition

My sample is composed of 812 Polish firms. It is structured so as to have a representative sample of the entire Polish economy. The firms are sampled from a directory of the Polish Chamber of Commerce which contains more than 200.000 firms representing the whole Polish business environment.<sup>3</sup> The criteria I used are as close as possible to the ones used by the European Bank for Reconstruction and Development (EBRD) and by the World Bank<sup>4</sup> which carry out research in the CEECs and the former Soviet Union. These criteria should control for problems correlated with location, size, ownership, sector, and export activity.<sup>5</sup> Moreover, differences in technology and in physical and human capital among firms, although could affect, in a second phase, productivity differently, are theoretically considered to be initially available in the same way. The institutions and the governance should affect the way how firms reach certain levels of knowledge and not the opposite (Antonelli, 2005). The criteria are the following:

Geographical: at least 15% of the firms were required to be allocated in towns with less than 50,000 inhabitants or in rural areas.

Size: at least 15% of firms were required to have under 50 employees and 15% were required to have over 250 employees.

State Ownership: at least 20% of the firms should be state-owned.

Foreign Ownership: at least 15% of the firms were required to be under at least 51% foreign ownership .

Sector: each productive sector has to be represented by at least 15% of the sample.

Export: at least 15% of the firms have to be to exporters (by at least 20% of output).

Below, I present a table with a detailed description of the sample by region, ownership, and sector of production.

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<sup>3</sup> Business CD 2003, Hoppenstedt Bonnier, Chamber of Commerce of Poland.

<sup>4</sup> I refer, in particular, to a periodic Survey carried out jointly by the EBRD and the World Bank, called BEEPS, "Business Environment and Enterprises Performance Survey", (Transition Report 2005) and conducted in 26 countries of Central and Eastern Europe and the former Soviet Union (except Turkmenistan). The first one was published in 1999, the second one in 2002, and the last in 2005.

<sup>5</sup> Doing so I will avoid weighting the final indexes - which I will build through the questionnaire answers - by location, firm size, sector, ownership and export activity (See Hellman *et al.* 2000).

Table 1. Sample composition

WOJEWÓD ZTWA (REGIONS)	OWNERSHIP				Productive Sectors			TOT. by owner ship & sector s
	State/ Muni- cipal firms	Privat e firms	Coopera tive Firms	Foreig n owners hip	Agricul ture	Indu stry	Servi ces	
DOLNOŚLĄSKIE	6	35	5	5	12	22	17	51
KUJAWSKO-POMORSKIE	15	35	7	5	15	34	13	61
ŁÓDZKIE	16	20	7	7	19	19	12	50
LUBELSKIE	15	12	12	6	15	19	11	45
LUBUSKIE	2	5	2	4	3	4	6	13
MAŁOPOLSKIE	25	25	11	10	23	20	28	71
MAZOWIECKIE	13	18	11	80	21	9	92	122
OPOLSKIE	7	7	12	3	5	15	9	29
PODKARPACKIE	12	29	9	3	6	22	25	53
PODLASKIE	25	14	12	16	9	34	24	67
POMORSKIE	16	29	12	9	22	37	7	66
ŚLĄSKIE	27	30	5	8	26	27	17	70
ŚWIĘTOKRZYSKIE	10	11	5	9	10	17	8	35
WARMINSKO-MAZURSKIE	8	12	8	3	8	16	7	31
WIELKOPOLSKIE	8	20	7	4	7	21	11	39
ZACHODIO-POMORSKIE	5	6	5	5	6	6	8	21
<b>TOTAL</b>	<b>210</b>	<b>308</b>	<b>131</b>	<b>177</b>	<b>207</b>	<b>316</b>	<b>287</b>	<b>826</b>

The following table summarizes the percentage, by main dimensions, of the sampled firms. This table confirms again the strong and genuine productive dualism between East and West Poland. In fact in the East one can notice a lower presence of firms. Therefore in my sample there were 201 firms from the East (Warminsko-Mazurskie, Podlaskie, Podkarpackie, and Lubelskie)<sup>6</sup> and 625 from the West (the rest of the listed regions above).

<sup>6</sup> However, few firms from Mazowieckie and Malopolskie Regions were considered to be part of the East, since Vistula River, our conventional border between East and West, passes right across these two regions.

**Table 2. Sample composition in percentage by main dimensions**

	State	Private	Cooperative	Foreign ownership	Total by ownership
Firms	25%	39%	10%	26%	100%
	Agriculture	Industry	Service		Total by sector
Firms	24%	39%	37%		100%
	West	East			Total by two macro-regions
Firms	77%	23%			100%

As regards the respondent firms to my questionnaire, their composition seems to reflect the sample structure well. This is because, in line with the usual EBRD procedure, in order to obtain a greater number of answers to the questionnaire, I proposed an under-sample of about 200 firms with the same features as the original sample. The firms were reminded to participate in the survey. This contributed to obtaining a sufficiently high rate of answers for a statistical significance (more than 11%), and the outcome structure was similar to the sample structure with 91 responding firms.

The respondents reflect the genuine business environment of the two parts of Poland as represented by the above-mentioned Directory of the Polish Chamber of Commerce. In this directory (which closely reflects the Polish environment), around 76% of firms are from the West and 24% from the East, considering the Vistula River. Hence the difference in the answers received (80% from the West and 20% from the East) seems to reflect this Polish East-West diversity. Moreover the three sectors (industry, service and agriculture) are represented in the respondent outcome with more or less the same proportion as my sample (respectively 35%, 46%, 19%). Other features were considered, such as ownership, size of firms and export. Each dimension is present in the outcome of the sample with not less than 20% (as regards size), and 15% as regards ownership. This reflects more or less the sample composition without serious selection bias in the outcome of the sample.

### 2.3 The Questionnaire

The questionnaire (attached in Appendix) composed of 40 questions, was written in Polish and in English, and was administered to the sample previously selected via e-mail and fax.<sup>7</sup> The questions can be conceptually divided into six groups, as given in the indexes that I have built.

Each group of questions is aggregated in order to build a coherent index. Moreover, there is a group of questions about performance of the firms. It encompasses the productivity trend, employment and turnover. In order to aggregate answers, I translated the firms' answers into various indexes following the simple method of the Likert scale.<sup>8</sup> The respondents were managers or owners. Each respondent was asked to answer the questions picking one of five alternatives as in the following example:

**Table 3. (example). Likert Scale**

<sup>7</sup> The questionnaire was administered during June-July 2003 while I was conducting a field research in Poland.

<sup>8</sup> The respondents are presumed to know how to distinguish the scale and therefore to choose the right answer.

5	4	3	2	1
Very Good	Good	Sufficient	Bad	Very Bad
Fully Agree	Agree in most cases	Tend to agree	Disagree in most cases	Completely disagree
Always	Usually	Sometimes	Seldom	Never
A lot	Quite a lot	Few	Very little	None
No obstacles	Very few obstacles	Few obstacles	Quite a lot of obstacles	A lot of obstacles

The answers to the questionnaire try to capture certain concepts which, when aggregated compose the indexes. The aggregation of answers was possible thanks to the fact that all the possible answers range between 1 and 5 as in the indexes having the same range. Moreover, the aggregated answers have in common the concept that they try to capture. For example, all the questions about the quality of the services offered by the public administration, public agencies, bureaucracy, the government etc., are aggregated in the same group under the index: "Support of Public institutions". At the same time, the questions about unofficial costs, bribes, illegal costs in the transaction and in the distribution of new property rights, etc., are in the group under the index Extra-Cost and Corruption.

Table 4.

INDEXES	Content of the questions
Support of Public Institutions ( <b>Support</b> )	Quality of bureaucratic services; government policy supporting business; public information agencies; banking and financial services.
Adjustment to Formal Institutions ( <b>Formal</b> )	Harmonization to EU law; FDI impact; respect and introduction of new national law; enforcement of competition policies and, in general, of market rules.
Persistence of Informal Institutions ( <b>Informal</b> )	Old rules of the previous regime; old lobbies linked to particular groups; informal information network; privileges; rent-seeking; resistance & inertia of particular social groups to the change.
Legal System and property rights ( <b>Legal</b> )	Quality of legal and judicial Systems; introduction and reinforcing of property rights.
Trust ( <b>Trust</b> )	Trust between agents; trust towards foreign investors; trust in the public institutions; cooperation with other agents.
Extra-Cost Factor and Corruption <sup>9</sup> ( <b>Extra-Cost Corruption</b> )	Corruption; bribes; unofficial payments; other off board and illegal costs; bargaining costs of economic transaction and acquisition costs of property rights (a cost of the institutional change) in situations of uncertainty.

Notes: (in parentheses, the abbreviations of the name of the indexes)

The aggregation of answers is calculated on the basis of the answers given by a firm for each group of questions throughout the arithmetic mean. I have six groups of questions and I have six indexes. In this way I obtained an indicator for each firm. This is not yet the final index but only that of the firm. In order to find the final index, I calculated the mean of the indicators, for each group of questions, for the firms in the East and for the

<sup>9</sup> This index would also have to include the cost of the creation of new market institutions, laws, governmental agencies, competition authorities, offices for consumer protection, etc. However, my questionnaire was administered only to firms and not to legislators, public offices and representatives of Government. Therefore, it could not capture this kind of cost.



firms in the West of Poland. Finally, for each group of questions, I calculated the weighted mean of the indexes weighting the means  $\bar{X}_1$  and  $\bar{X}_2$  for the firm population respectively in the East and West of Poland<sup>10</sup>, obtaining the final six indexes for Poland (see footnote 11).

To sum up, the final index, which embodies a relevant group of questions, is a weighted mean of the average of answers of all the firms, for each group of questions: in other words, the weighted mean of firms' indicators.

### **3. Indexes of governance and of institutional quality**

My indexes range from 1 to 5. They reflect the "real perception" of entrepreneurs expressed by answering the questions in a range between 1 and 5. However answers about productivity, employment and turnover represent the actual figure of firms. In fact I could check those answers against data available in the directory of the Polish Chamber of Commerce, above mentioned, which contains information about productivity, employment and turnover.

The indexes, which are independent variables, should be interpreted as follows:

The index "Support of Public Institutions" means that the greater the index is, (closer to 5), the greater the support of public institutions is for the economic agents.

The index "Adjustment to Formal Institutions" means that the greater the index is, the greater the adaptation of the entrepreneurs to formal economic institutions is.

The index "Persistence of Informal Institutions" is a significant index. It implies that with the increase of the index, the influence of the rules and institutions of the old regime and the resistance to the change increases. This index measures the impact of the path-dependency on the new institutions, persistence of old values, routines and habits. Moreover, this index captures the persistence of old lobbies and rent-seeking. The higher the index is the worse the situation, because it means that the conflict and inconsistency between old and new institutions are significant. In that case the uncertainty increases and, hence, the transaction costs increase.

The index "Legal System and property rights" measures the quality of the legal and judicial system, property rights and effectiveness of law, as judged by the economic agents. The quality improves with the increase of the index.

The index "Trust" is simple but very important. It measures the level of confidence between economic agents and, more generally, the level of trust that economic agents have for the Polish economic system. The higher the index, the better (because it implies more trust).

The index "Extra-Cost Factor and Corruption" is a complex index because of its definition, and because of the difficulty in capturing such concepts as bribes, corruption, bargaining transaction costs, and acquisition costs of new property rights (costs of the

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<sup>10</sup> Doing so I will avoid to weight the final index by firm size, sector, ownership export activity avoided

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institutional transformation in situations of uncertainty). It increases with the increase of these costs.

Productivity is a dependent variable. However, there is no quantity that expresses productivity in absolute terms or its exact increase. There is, however, a value, extracted from the entrepreneurs' answers, which indicates that the productivity of the firm in the last two years (2001/2002) improved (2), decreased (0) or did not change (1). Hence, on the one hand it is easy to estimate the direction of the impact of the firms' indexes on their own productivity, in the sense that it is easy to observe how the productivity changes when the indexes change. On the other hand it is not possible, methodologically, to estimate exactly the impact of the indexes on productivity and its level. In order to observe the impact of institutional indexes on the productivity change, I will use an ordered probit model which seems to be the most appropriate statistical tool, as my dependent variable (productivity change) can assume only three discrete values (0, 1 and 2). However, in order to verify the reliability of these "subjective" answers I will use also actual productivity data for each firm, withdrawn from the CD of the Chamber of Commerce. Then, I will correlate, through an OLS model, institutional indexes and actual productivity data.

As regards a definition of productivity, the entrepreneurs should consider the relationship between the amount of output obtained and the number of inputs used in the production process.<sup>11</sup> Generally, the calculation for the firm is the following:

$$P = \frac{Q}{aL + bK}$$

where P (productivity) is equal to the relation between the product (Q) and all the inputs used. In the equation, I indicated the inputs with L and K, multiplied by the correspondent prices a and b. In order to have a more reliable answer I also asked for the turnover and the employment level of the firm, which relation can easily be linked to the total productivity trend. Finally, I tried to elicit the importance of the informal economy for the respondent firms, asking a direct question about that, to which entrepreneurs could answer "yes, no, or partly" (see Table 7). In the following table I present the initial results of the indexes of governance and institutional quality obtained from the questionnaire:

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<sup>11</sup> Intentionally, the calculation for the entrepreneurs was subjective as they did not have to tackle theoretical and methodological problems relating to the measurement of inputs such as human capital, education etc.

Table 5

INDEXES OF GOVERNANCE AND OF INSTITUTIONAL QUALITY			
	INDEXES EAST ( $\bar{X}_1$ )	INDEXES WEST ( $\bar{X}_2$ )	INDEXES ( $\mu$ ) POLAND (Weighted <sup>12</sup> )
SUPPORT	2.4292	2.8369	2.7766
FORMAL INSTITUTIONS	2.9854	3.5327	3.4517
INFORMAL INSTITUTIONS	a.5765	3.0052	3.0897
TRUST	a.1844	3.5073	3.4595
LEGAL System and Property Rights	2.4455	2.8109	2.7568
EXTRA-COST-CORRUPTION	3.4229	1.9731	2.1877

Source: Author's calculation

Moreover, I present data for other variables: productivity, employment and turnover. I have the percentage of firms whose productivity, employment and turnover in the last two years (2001/2002) increased (2), decreased (0), did not change (1).

Table 6

PRODUCTIVITY 2001-2002	EAST	WEST	POLAND
% Improved (2)	47%	59%	57%
% Decreased (0)	30%	11%	14%
% Did not change (1)	23%	30%	29%
EMPLOYMENT 2001-2002			
% Improved	23%	38%	35%
% Decreased	29%	46%	44%
% Did not change	47%	16%	21%
TURNOVER 2001-2002			
% Improved	35%	46%	44%
% Decreased	30%	34%	34%
% Did not changed	35%	20%	23%

Source: Author's calculation

Finally, the following table represents the percentages of Informal Economy obtained on the basis of a "direct answer" given by the firms to a specific question:<sup>13</sup>

<sup>12</sup> I calculated the final indexes of Poland weighting the indexes in the East and West for the effective population of firms in the East and the West. In particular,  $\mu = (\bar{X}_1 \cdot 0.24) + (\bar{X}_2 \cdot 0.76)$ , where the two coefficients 0.24 and 0.76 represent the weights of the population of firms respectively in the East and West. They reflect the population of the firms in the East and the West, following the database of the Chamber of Commerce of Poland which I used.  $\bar{X}_1$  and  $\bar{X}_2$  are the indexes in the East and the West, that is the sample mean of the indicators of firms.

Table 7

<b>% INFORMAL ECONOMY <sup>14</sup></b>	<b>EAST</b>	<b>WEST</b>	<b>POLAND</b>
Answer YES	35,5	54,2	52,5
Answer PARTLY	39	29,5	30
Answer NOT	25,5	16,3	17,5
Tot. Respondents	100%	100%	100%

Source: Author's calculation

The next issues I addressed were: 1) if the indexes are effectively different in the population and not only in the sample, between the East and West of Poland; 2) why the indexes between the East and West of Poland may be so different; and, 3) if this diversity has a different impact on the economic performance of the regions.

#### 4. Statistic diversity between East and West Poland's Indexes: hypothesis test

In order to answer the first question mentioned above a statistical tool will be used to give statistical significance to the information about population and not only to the information about the sample.

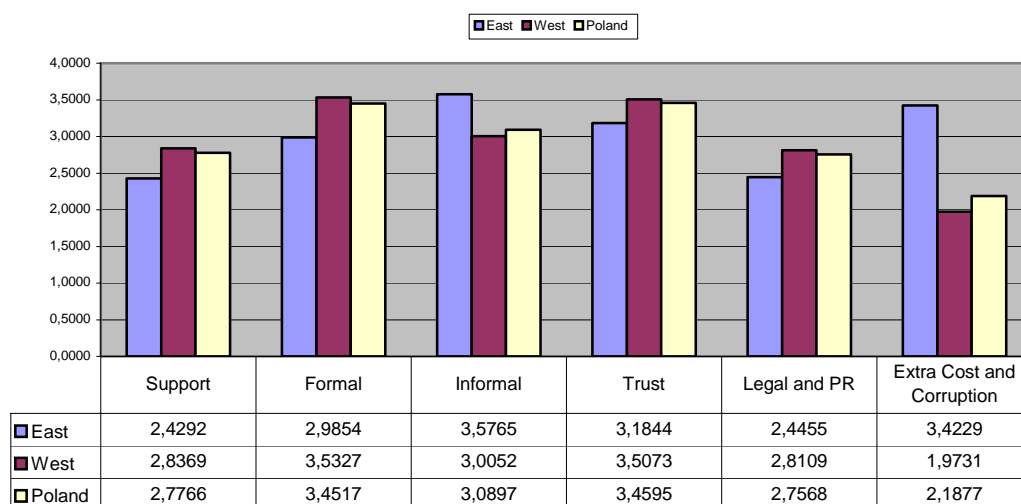
The sample analysis shows that East and West indexes are very different. However, in order to test the 6th Hypothesis I had to test whether the indexes are also different in the population. Hence, I made a test of a difference between means in a population with unknown variances (S) but supposed equal, on two samples (the East and West) whose distributions (N1 = 18; and N2 = 73) are approximately normal. The test statistic is:

$$t' = \frac{\bar{X}_1 - \bar{X}_2}{S_p \sqrt{(1/n_1) + (1/n_2)}}$$

<sup>13</sup> The question, in the English version of the questionnaire, was: "Does your company declare all year's turnover to relevant authorities (Tax Office)?" The possible answers were: Yes; Partly; No. (In Polish: "Czy Pani/Pańskie przedsiębiorstwo deklarowało urzędowi podatkowemu całoroczny obrót?" Tak; Częściowo; Nie).

<sup>14</sup> Informal Economy, in this case, means everything that has a legal market but which is produced in an illegal way (tax evasion, non respect of law, illegal work, etc.). One can notice from the chart a higher level of informal economy in the East, according to the different answers, i.e.: "Not", "my company does not declare all year's turnover" (25% in the East, 16,3% in the West); "Yes" it does (35,5% in the East, 54,2% in the West). Interestingly enough, the aggregate data for Poland of the answer "Not" (17,5%), which represents for us the most reliable level of informal economy, is very close to the one estimate by Kaufmann *et al* (1997), who found out a level of informal economy between 15% and 20%, using an energy consumption methodology.

Figure 1. INDEXES OF GOVERNANCE



Source: Author's calculation

The results of  $t'$  for each index according to that formula are:<sup>15</sup>

Support	Formal	Informal	Trust	Legal.P.R	Extra-Cos.-Corruption
3.014398	5.56305	-4.81082	2.482988	2.492641	-9.79256

Under the hypothesis of normality of the population distribution,  $t'$  approximates a Student's  $t$  distribution with  $(n_1+n_2)-2$  degree of freedom (d.o.f.), like this:

$$t_{\alpha(n_1+n_2-2)} = d.o.f.$$

Hence, after making the relevant calculations, the results show a statistical diversity:

		Support	Formal	Informal	Trust	Legal.P.R	Extra-Cost-Corruption
$P(t' > t\alpha) = \alpha$		$t' > t\alpha$	$t' > t\alpha$	$t' < t\alpha$	$t' > t\alpha$	$t' > t\alpha$	$t' < t\alpha$
<b>with <math>\alpha=0.01</math></b>	$t_{\alpha(89)}$ dof =	2.358	2.358	-2.358	2.358	2.358	-2.358
$H_0: \mu_E = \mu_O$							
$H_1: \mu_O > \mu_E$				$H_1: \mu_O < \mu_E$			$H_1: \mu_O < \mu_E$
Reject $H_0$ because $t' - t\alpha$ yields the following difference:		0.656398	3.20505	-2.45282	0.124988	0.134641	-7.43456

<sup>15</sup> The results have been gained through the formula of a statistic test  $t'$  presented above. In particular,  $X_1$  and  $X_2$  are the sample means, that is, the indexes, for each group;  $n_1$  and  $n_2$  are the observations, and  $S$  is the variance in the sample distributions.

To put it differently, given a very small  $\alpha$ ,  $H_0$  ( $\mu_E = \mu_O$ ) is rejected if the quantity  $t'$  is in the rejection region and the alternative hypothesis  $H_1$  ( $\mu_O > \mu_E$ ) is accepted. The rejection region is  $R = \{t': t' \geq t\alpha\}$ , with  $P(t' \geq t\alpha) = \alpha$  (meaning, with an  $\alpha = 0.01$  level of significance). Alternatively, if the quantity  $t'$  is negative the rejection region is  $R = \{t: -t' \leq t\alpha\}$  with  $P(t' \leq -t\alpha) = \alpha$  (meaning, with an  $\alpha = 0.01$  level of significance).

In all the cases we reject  $H_0$  (the null hypothesis that subtends the equality of the two amounts  $t'$  and  $t\alpha$ ). In other words we reject the hypothesis according to which the mean in the East ( $\mu_E$ ) is equal to the mean in the West ( $\mu_E = \mu_O$ ) and, instead, we accept the hypothesis that in the population the mean in the West is greater than in the East ( $\mu_O > \mu_E$ ) in all cases except for the indexes "Informal" and "Extra-cost-Corruption" which on the contrary is  $\mu_O < \mu_E$ , as I expected. All this confirms Hypothesis 6.

### 5. Initial results about indexes and the productivity: $\chi^2$ analysis

The analysis responses confirm a strong correlation between the six indexes and productivity. The coefficients are statistically significant. I tested the relationship through the analysis of  $\chi^2$  (Chi square). First of all, I built the contingency tables<sup>16</sup> for each index with "productivity". Then, I tested if:

$H_0$  = Productivity and the indexes (Formal/Support/Legal/Informal/Extra-Cost-Corruption/Trust) are not correlated. Or:

$H_1$  = Productivity and indexes (Formal/Support/Legal/Informal/Extra-Cost-Corruption/Trust) are correlated.

I started testing the relationship between the Productivity variable and the index Support. I present a contingency table from which I withdraw the  $\chi^2$  equation testing the relationship between the variables.

Table 8. Productivity/Support

Classes of Indexes Support	Productivity			Total
	D=0	D.n.C=1	I=2	
1.5-2	5	3	2	10
2-2.5	1	3	9	13
2.5-3	6	16	18	40
3-3.5	0	5	19	24
3.5-4	0	0	4	4
Total	12	27	52	91

By calculating the marginal distribution from the Table 8 I found out the test statistic, which is:

$$X^2 = \sum \sum \frac{(n_{ij} - c_{ij})^2}{c_{ij}} = X^2 \approx \chi^2 \text{ with } (k-1) \cdot (t-1) \text{ degrees of freedom (dof).}$$

<sup>16</sup> In the columns there are the classes of indexes, and in the rows there is the trend of productivity as usual for the years 2001/2002: 0 =Decreased; 1=Did not change; 2=Improved.

Based on the information in the table, I found out  $n_{ij}$  and  $c_{ij}$ . The first represents all the elements within the table.<sup>17</sup> The second is given by multiplying partial totals of rows and columns and by dividing the product for the total (91). The greater  $\chi^2$ , the greater the probability that the null hypothesis ( $H_0$ = not correlation between variables)<sup>18</sup> is false.

In the case of correlation between Productivity and Support,  $\chi^2$  is equal to 25.067. From the table of  $\chi^2$  distribution one can easily observe that the value of  $\chi^2$  with 8 degrees of freedom<sup>19</sup> is in the rejection region, well beyond the acceptance region with a high probability,  $P(\chi^2 \geq 25.06)$ , and with  $\alpha = 0.005$ . In fact, we reject  $H_0$ , which is not statistically significant at the 0.005 level. That means that Productivity and Support are strongly correlated ( $H_1$  is true). In fact, the contingency table above shows that when there is a lower Support index (classes: 1.5-2 and 2-2.5) the productivity tends to be 0 or 1; while when the index increases, the productivity tends to be 2 (meaning that firms with a higher index of support have a higher productivity). The economic meaning of this is that the firms that get insufficient support of public institutions have a lower productivity (or to be more precise, have a productivity, with a decreasing trend, in the last two years), while the ones that get that support seem to have higher productivity (increasing trend). On the contrary, the firms that declare a greater support of public institutions have a productivity with an increasing trend in the last two years. Below I present the results of  $\chi^2$  analyses withdrawn from contingency tables. However, contingency tables from the other 5 indexes are omitted.

**Table 9  $\chi^2$  analysis of contingency tables between Productivity and the indexes**

Indexes	$\chi^2$	dof	Level of significance $\alpha$	$H_0$ , null hypothesis (no correlation)	$H_1$ , alternative hypothesis (correlation)
Index Support /productivity	25.06	10	0.005	Rejected	Accepted
Index Formal/productivity	32	10	0.001	Rejected	Accepted
Index Trust/productivity	63.3	4	0.0001	Rejected	Accepted
Index Legal/productivity	20.08	10	0.025	Rejected	Accepted
Index ExtraCost/productivity	17.27	12	0.1	Rejected	Accepted
Index Informal/productivity	18.49	10	0.05	Rejected	Accepted

<sup>17</sup> The order is the following: first row, first column, first row, second column, etc. ... second row, first column, second row, second column, etc. ... in the table we would have: 5, 3, 2, 1, 3, 9, 6, 16 etc.

<sup>18</sup> In fact a  $\chi^2$  value above 15/20 allows for rejection of the null hypothesis, with a high level of probability.

<sup>19</sup> From the composition of the table one can see that the degrees of freedom are 8 because  $k$  (that is the number of the classes of indexes) = 5, and  $t$  (the possible answers for productivity, 0, 1,2) = 3, hence  $(5-1)(3-1)=8$ .

To sum up, the  $\chi^2$  analysis confirms a strong correlation (hence not a casual relation) between the variable productivity and the indexes. Throughout the contingency tables I verified that the null hypothesis on independency between variables is false and I always accepted the alternative hypothesis of correlation between productivity and indexes. Hence my hypotheses seem be confirmed. The next step now is to run an ordered probit model between those variables in order to calculate the impact of the variables on productivity.

## 6. Ordered probit model analysis

The most appropriate statistical tool that we can use with the data available in order to test correlation between indexes (as independent variables in a range between 1-5) and productivity (as dependent variables) is an ordered probit model, which measures the impact of qualitative data on a restricted number of discrete values (in my case: 0, 1 and 2 as the measure of productivity trend, respectively decreased, unchanged, increased) obtained from the questionnaire.

Table 10

Dependent Variable: Productivity change				
Method: ML - Ordered Probit				
Included observations: 91; (no. of ordered indicator values: 3 i.e.: 0, 1, 2)				
IDEXES	Coefficients	Std. Error	P>  z	Significance
Informal	-1.499169	0.640857	0.0193	**
Trust	3.866324	0.922648	0.0000	*
Extra-Cost Corruption	-0.461726	0.309254	0.1054	***
Formal	0.114677	0.735899	0.8762	-
Support	0.866745	0.533818	0.1044	***
Legality-Property Rights	0.597882	0.531395	0.2605	-

Pseudo R<sup>2</sup>=0.658409; Asterisks denote significance levels: \* at 1%; \*\* at 5%; \*\*\* at 10%.

Source: Author's calculation

The ordered model analysis shows very clear results as regards a direction of the impact of the indexes on productivity. The estimator used is robust towards heteroskedasticity variance problems.<sup>20</sup> What is important in this analysis are the signs of the coefficients which indicate the direction of the relationship between change of productivity and the indexes, and not the level of productivity.<sup>21</sup>

The results of the model show a positive relationship between productivity and the four indexes (in order of magnitude of coefficients, i.e.: Trust, Support, Legal and Formal),

<sup>20</sup> Some tests carried out through the statistical-econometric program EViews confirm that.

<sup>21</sup> The sign of  $\beta_i$  (coefficients) shows the direction of the change in the probability of the dependent variable (in my case  $y=0$  or  $y=2$ ) falling in the endpoint rankings (0, M) when  $x_i$  (the indexes) changes.  $\Pr(y=0)$  changes in the opposite direction of the sign of  $\beta_i$  and  $\Pr(y=2)$  changes in the same direction as the sign of  $\beta_i$  (Greene 1997).  $\Pr(y=1)$  can change in both directions of  $\beta_i$ . The effects on the probability of falling within any of the middle rankings ( $k$ ) are given by:  $\frac{\partial \Pr(y=k)}{\partial \beta_j} = \frac{\partial F(\gamma_{k+1} - x' \beta)}{\partial \beta_j} - \frac{\partial F(\gamma_k - x' \beta)}{\partial \beta_j}$  for  $K=1, \dots, M-1$  (in my case is just 1) and  $\gamma_k$  is the limit point of the dependent variable.



while the relationship is negative between the productivity and the Informal and Corruption indexes. All the indexes, except for Legal and Formal, are significant at 1%, 5% or 10% level; moreover the Pseudo R<sup>2</sup>, which tells us about the explanatory power of variables, is quite important.

In general, we can therefore state that the bigger the indexes Formal, Support, Trust and Legal are, the more the firms that have an increasing productivity trend are. At the same time the greater the indexes Informal and Extra-Cost and Corruption are, the more the firms that have a decreasing productivity trend are. Consequently, in order to increase the productivity it would be necessary to have higher values of the four indexes (Support, Formal, Trust and Legal) and smaller values of the 2 indexes (Informal and Extra-Cost Corruption). The results confirm my first group of hypotheses (H.1, H.2, H.3, H.4, e H.5). Interestingly the magnitude of Trust coefficient is very consistent. Its impact on productivity change seems to be very important confirming several research studies in such field (among others Raiser et al. 2001; Kornai et al. 2004).

The extensive form of the equation explaining the model would be the following:<sup>22</sup>

$$\text{Productivity} = -1.49 \cdot \text{Index Informal} + 3.86 \cdot \text{Index Trust} - 0.46 \cdot \text{Index Extra} + 0.86 \cdot \text{Index Support}$$

In particular there is a negative relationship between the Productivity and the Informal Institution index which captures a part of informal institutions. That is, with the increase of the presence and persistence of informal rules, habits and old values of the previous planned economy system, privileges, old lobbies and rent-seeking, productivity tends to drop (both in the East and in the West of Poland). It is important to add that this negative relationship concerns only a part of informal institutions. In particular it is referred to those informal institutions which are in contrast with the formal rules imposed by the new institutions of the market economy.<sup>23</sup> In other words, only if there is dissonance in the behavioural models of the agents does there seem to be a negative effect on the productivity. I will give an example: the informal index of State Enterprises (SOE) is higher than the private enterprises' informal index, but their economic performance in terms of productivity is better. This confirms a thesis of Saul Estrin (1996). According to Estrin there is no significant evidence that during the 1990's private firms performed better than SOE. In the first case, the labour and managerial organization of the firms did not change so much, hence it is very similar to the previous organization of socialist type (subsidies, soft budget constraints, trade protection, privileges, etc.). In the second case, the private firms underwent a restructuring process. At present they do not have privileges and subsidies, they have built new lobbies and they cope with more formal, and hard constraints (competition, trade opening, harmonization to EU law). The following Table 11 illustrates the problem.

**Table 11. Productivity trend by ownership of the firms**

PRODUCTIVITY	Total composition
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<sup>22</sup> The variables Formal and Legal are not presented in the equation because they are statistically not significant.

<sup>23</sup> On the contrary, the relationship between productivity and the other *part* of informal institutions, captured by the index "Trust" is strongly positive.

Type of ownership	0 (decreased)	1 (did not change)	2 (increased)	of the sample by ownership (%)
Cooperative	29%	29%	42%	15%
Foreign (FDI)	0%	38%	62%	15%
Private	20%	30%	50%	43%
State-owned (SOE)	7%	26%	67%	27%
Total number of firms (%)	14%	31%	55%	100%

Source: Author's calculation

## 7. The East-West dualism captured by the governance indexes

The diversity of the indexes of governance between the East and the West represents a well known phenomenon in Poland, the dualism between the East and the West. Similar to Italy's North-South dualism, the Polish dualism is revealed by strong differences in the GDP per-capita, poverty, education levels, unemployment and deficiencies of infrastructures in the East when compared with the West (Walsh 2000). Moreover, the East remains traditionally agricultural and rural while the West is more industrialized and urbanized. Finally, the size of the informal economy in the East is greater than in the West. In short, the East is poorer and economically less developed than the West as in the North-South Italian dualism. Fadda (1999, pp. 99-100) lists four institutional categories through which he explains the fundamental differences in the processes of growth between the North and the South of Italy. They are the following:

Property Rights system;

The system of prizes and penalties;

The category of "rent seeking";

Relations of Trust.

These four categories are present in my analysis and are captured by my six indexes of governance, in particular, the indexes: Trust, Extra Cost-Corruption, and legality. The empirical results seem to confirm Fadda's thesis (1999). In particular, the differentials between indexes are evidence of strong differences in the economic institutions of these two macro-regions.

My indexes showed that, apart from the pure economic differences between eastern and western Poland, the formal and informal institutions of the East and the West are very different. There is a different perception of legality and property rights. The systems of incentives, prizes and penalties are very different. The relations of trust and the certainty of economic relations are less strong in the East than in the West. The values and the habits (captured by the index "Persistence of Informal Institutions") are different. In particular, lobbying and rent-seeking activities, resistance towards new market rules and new formal institutions such as agencies, Chambers of Commerce, organizations, laws, trade codes, etc., seem to be much stronger. The acceptance of new formal rules and EU norms are more difficult in the East than in the West. A sort of inertia (captured by the index "Adjustment to the formal institutions") seems to be present in the East and much less in the West. At the same time, the lack of support from the administration and public institutions and the difficulties created by the bureaucracy are mainly perceived in the East. Finally, in the East corruption, bribes, and other unofficial costs (Index "Extra Cost and Corruption") and inertia in the new distribution of the property rights seem to be more widely-spread in comparison with the West of Poland.

Therefore the system of incentives and penalties is biased. A perverse system, with inefficient benefits rather than collective and more productive aims, seems to prevail. Moreover, the differences in the business environment, the legality, the rule of law, the supremacy of contracts, seem to confirm the split between the East and the West. In fact, the Legal index captures a very different environment between the East and the West, which describes the East environment closer to the former Soviet Republics or to the environment of Romania and Bulgaria, as described by other institutional indexes (such as "Rule of Law" in Kaufmann et al. 2003; "Legal Indicator Survey", in Transition Report 2001).

Finally, as regards informal institutions, and in particular, relations of trust, loyalty, behavioural norms, cooperation, respect, certainty of economic relations, and in a wider meaning, "Trust", they seem to be a mirror of the intensity of economic relations, the intensity of economic exchanges, the certainty of property rights, the self-reinforcement of rules and contracts, and information and knowledge flow. For better performance, an economic system needs all these elements (Putnam 1993). Therefore, the differences in these qualities can create strong differences in the productivity and the output of a country (Olson 1982). Hence, in the two sub-systems which I analysed, the East and West of Poland, the differences in this sense, as underlined by the index "Trust", are significant and seem to cause strong differences in the economic performances of the two macro-regions of Poland. Now my aim is to prove that the differences between the East and West governance indexes, i.e. the diversity of economic institutions, cause differences in firm's productivity and a productivity gap.

### **7.1 Implications of governance index differentials for the East-West Polish dualism**

Jones and Hall (1998) showed that the differences of output between countries are mainly explained by differences in the "Social Infrastructure", that is, the difference caused by the economic institutions. Similarly, Olson et al. (1998) explains differences in the GDP per-capita between rich and poor countries on the basis of their economic institutions.<sup>24</sup>

Recently, Bardhan (2005) suggested that some institutional index such as participatory rights and democratic accountability are better explaining variables of development than other such as property right institutions. While according to Rodrik and Rigobon (2005), who explain income gaps among countries, democracy and the rule of law are both good for economic performance. The debate is very vibrant and of course the opinions can be divergent and common grounds are difficult to share (see Glaeser et al., 2004; Albouy 2005).<sup>25</sup>

Likewise, I have used the ordered probit analysis in order to test whether (and which) better economic institutions, captured by higher governance indexes in the West of Poland, have a more important impact on the productivity change of the sampled firms

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<sup>24</sup> In particular Olson *et al* (1998) elaborated some indexes in order to evaluate the impact on the output of the different countries. The indexes are: *The Risk of Expropriation; The Risk of Repudiation of Contracts by Governments; Quality of Bureaucracy; Level of Corruption ; Law and Order Tradition; International Country Risk.*

<sup>25</sup> However some economic evidence (i.e. differences between North and South American long term development path, Asian tigers development, African persistent underdevelopment) and many of the most important economists (such as Kuznets 1965; Sen 1981; Hirschman, 1990; North 1990; Rodrik 2004) seem to suggest that institutions play a crucial role in economic development as an important spin off for institutional change and therefore to improve productivity performance.

than in the East. As regards the western sample I related all the indexes together with productivity values (0,1,2), hence I obtained only one Pseudo R<sup>2</sup> for all the regressors, while in the case of the eastern sample, I related each regressor separately with the dependent variable, obtaining several Pseudo R<sup>2</sup>.<sup>26</sup>

Table 12

Dependent Variable: Productivity change				
Method: ML - Ordered Probit				
	WEST		EAST	
	Included observations: 73; (no. of ordered indicator values: 3, i.e.: 0, 1, 2)		Included observations: 18; (no. of ordered indicator values: 3, i.e.: 0, 1, 2)	
	Pseudo R <sup>2</sup> =0.739726			Pseudo R <sup>2</sup> for each variable
INFORMAL	Coefficients	-2.920771	-4.122680	0.441157
	Std. Error	1.149282	1.574292	
	P>  z	0.0110**	0.0088*	
TRUST	Coefficient	3.721244	1.158132	0.128594
	Std. Error	1.214670	0.550383	
	P>  z	0.0022*	0.0354**	
EXTRA	Coefficient	-0.181915	-1.049240	0.102215
	Std. Error	0.514563	0.541513	
	P>  z	0.7237	0.0527***	
FORMAL	Coefficient	1.246558	0.837632	0.400749
	Std. Error	1.345582	0.500183	
	P>  z	0.3542	0.0940***	
SUPPORT	Coefficient	1.392443	0.883283	0.255559
	Std. Error	0.845420	0.542754	
	P>  z	0.0995***	0.1037***	
LEGAL	Coefficient	1.202862	0.602379	0.176171
	Std. Error	0.797532	0.367126	
	P>  z	0.1015***	0.1008***	

Significance levels: \* at 1%; \*\* at 5%; \*\*\* at 10%.

The results are very interesting: all the coefficients of the variables have the expected signs, both in the East and in the West. The direction of the impact on productivity change seems to be the same in the East and in the West as well as for the whole sample (cf. table 10 and table 12). In particular the relationship is negative between productivity change and the index Extra Cost-Corruption. This means that with the increase in corruption, bribes and other illegal costs (i.e. bargaining transaction costs, and in general extra transaction costs) the firms having worse productivity performances increase. The

<sup>26</sup> The reason for this is that I had fewer observations for the eastern sample (only 18). Consequently the Pseudo R<sup>2</sup> is quite low for each variable. However the p-values are significant within a 10% level. On the contrary for the western sample I have a very consistent Pseudo R<sup>2</sup>.

same negative relationship is with the “informal” index. Again there is a very strong positive correlation with the trust index. The “formal” institutions captured by the indexes Support, Formal, and Legal have a positive impact on firms’ productivity change. Again, my hypotheses (H.1, H.2, H.3, H.4, H.5) are confirmed. Hence, the empirical analysis has confirmed theoretical predictions, i.e.: for the residual part, productivity seems to be determined by economic institutions as captured by my governance indexes. In other words, the economic institutions of a country - from the very basic ones, (such as: the public administration, the organizations, the governmental agencies which may support production, exchange, and information processes), to more complex ones (such as: interaction between economic agents, networks, cooperation, exchange of knowledge, industrial relations, negotiations) - are essential for the economic development.

Obviously the magnitude of the coefficients is different between East and West. Very interestingly, the results suggest that negative correlated coefficients (for the indexes Extra Cost-Corruption and Informal), have a bigger impact in the East than in the West, while positive correlated coefficients (for the indexes Trust, Support, Formal and Legal) have a bigger impact in the West. In my model, this is on the basis of a productivity gap between East and West. That is, the impact of indexes of governance on productivity is greater in the West than in the East, meaning that the indexes (and therefore the economic institutions) should lead - under the same conditions of technology, labour and capital not included in this analysis - to a greater level of productivity in the West than in the East.

Since the indexes’ differentials between the East and West of Poland are very consistent and statistically significant, they may cause the productivity differentials. This result would confirm my last hypothesis (H7).

**Table 13**

Indexes	West		East	Differentials
Trust	3.507275	>	3.184386	0.322889
Formal Instit.	3.532741	>	2.985364	0.547377
Legal Sis.-P.R.	2.810894	>	2.445476	0.365418
Informal Inst.	3.005197	<	3.576474	-0.57128
Extracost-Corruption	1.973116	<	3.422863	-1.44975

So far, the analysis dealt with subjective answers of the respondents concerning productivity movements and institutional matters. In order to give more consistency to my analysis and to see whether the responses of the interviewed agents correspond to the reality I used also actual productivity data (i.e. Output/workers)<sup>27</sup>. I correlated them with the same institutional indexes presented above (as independent variables). In this

<sup>27</sup> In the questionnaire I asked also quantitative information about actual annual sales and number of employees (see the questionnaire in appendix). Almost all the respondents gave those information. When those data were not available I found them in the CD of the Chamber of Commerce of Poland which I used to sample the firms. However, I observed a complete consistency between quantitative answers of the firms and the data available in the CD.

case, obviously, I did not use an ordered probit model but a multiple OLS regression model. The dependent variable is the logarithm of the Output per worker. Below I present the results.

Table 14

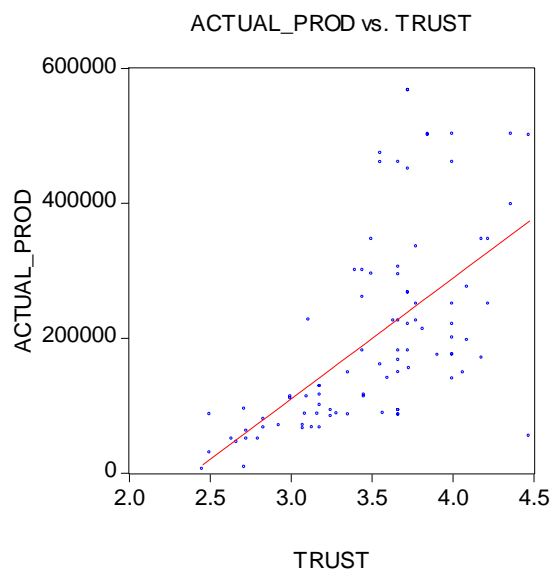
Dependent Variable: LOG(ACTUAL PRODUCTIVITY)			
Method: Least Squares			
Included observations: 91			
Variable	Coefficient	Std. Error	Prob.
EXTRACOSTCORRUP	-0.190743	0.120798	0.1008**
INFORMAL	-0.107024	0.203660	0.6006
SUPPORT	0.036427	0.157411	0.8175
TRUST	1.045485	0.220602	0.0000*
C	8.859320	1.321691	0.0000*
R-squared	0.503755	Mean dependent var	11.93158
Adjusted R-squared	0.480674	S.D. dependent var	0.849661
S.E. of regression	0.612302	Akaike info criterion	1.910197
Sum squared resid	32.24262	Schwarz criterion	2.048156
Log likelihood	-81.91395	F-statistic	21.82535
Durbin-Watson stat	1.328476	Prob(F-statistic)	0.000000

Source: Author's calculation. \* = Significance level at 1%; \*\* at 10%.

To some extent, the OLS model confirms the ordered probit results. The signs of the coefficients confirm my main hypothesis, i.e. the indexes Informal and the index Extra-cost have a negative impact on actual productivity, while Support and Trust have a positive impact. However, not all the indexes are statistically significant. Moreover, similarly to the results of Bardhan (2005), 2 indexes (i.e., Legal and Formal) are not included in this regression because they lower the R-squared which as it is presented now is quite high. Finally the indexes Trust seems to be strongly correlated also with actual productivity as the scatter of the simple regression model below shows.

These relationships are valid both in the East and in the West of Poland. In the East, a lower index of Trust and a higher index of Extra Cost and Corruption would cause a lower output per worker than in the West. In the East productivity and GDP per-capita are lower than in the West (Gorzela, 1999). The respondents to my questionnaire confirmed this pattern. Average output per worker of the respondent firms in the East is 120523 Polish Zloty while in the West is almost twice, 222775 Polish Zloty.

Figure 2



$$R^2 = 0.482449; \text{ P-value: } 0.000$$

$$\text{LOG}(\text{ACTUAL\_PROD}) = 1.23 * \text{TRUST} + 7.60$$

However, I have to specify that Poland differs along many important dimensions that might be correlated with both institutional and economic performances. East and West of Poland had different historical experiences until the creation of modern Poland, different industrialization policies during communism as well as a different distance and cultural affinity to Western Europe. A reverse causality problem could exist. The productivity gap between East and West may be an effect but at the same time may be one of the original causes of poorer institutions in the East, as lower productivity leads to lower output and lower output brings fewer resources and little financial means to spend in order to foster better institutions such as public services, the legal system, social policies, etc. In order to solve this problem a “Granger” causality test was carried out.

The test excludes a reverse causality relation between productivity and the index Extra-cost and between productivity and the index Informal (i.e., while the indexes Extra-Cost and Informal affect productivity, the reverse is not true). As regards the indexes Trust and Support, a reverse causality problem cannot be excluded, and this is not surprising.<sup>28</sup> In particular, the index Trust, in my survey, is an expression also of the general business environment, which can be strongly affected by the trend of the productivity.

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<sup>28</sup> However the probability that Trust and Support do not granger cause Productivity is lower than the reverse.

Table 15

<b>Pairwise Granger Causality Tests on the regression presented in table 14</b>			
Included Observation 91			
Lags: 2			
Null Hypothesis:	Act Obs	F-Statistic	Probability
Extra-cost does not Granger Cause Log(Actual_Prod)	89	0.64583	0.52681
Log(Actual_Prod) does not Granger Cause Extra- cost*		1.95684	0.10252*
Informal does not Granger Cause Log(Actual_Prod)	89	0.20155	0.81786
Log(Actual_Prod) does not Granger Cause Informal*		2.37423	0.09931*
Trust does not Granger Cause Log(Actual_Prod)	89	0.95697	0.38820
Log(Actual_Prod) does not Granger Cause Trust		1.22523	0.29888
Support does not Granger Cause Log(Actual_Prod)	89	0.38990	0.67835
Log(Actual_Prod) does not Granger Cause Support		0.58902	0.55714

*Asterisks denote the acceptable causality hypothesis.*

*Source: Author's calculation*

However, a relevant literature seems to stress the importance and the priority of the causality direction adopted also in this paper<sup>29</sup>, i.e. Trust → productivity, and in general, INSTITUTIONS → productivity (Arrow 1975), or, as Jones and Hall (1998, p.25) pointed out:

Social Infrastructure → (Input, Productivity) → Output per-capita

What is important, and this was the main aim of my paper, is to capture relevant INSTITUTIONS affecting performances, which can be different among countries and regions, and which can explain, better than other variables, economic development, as Bardhan (2005) also stressed.

## 8. Conclusion

In this paper, I analysed, through a business survey in Poland, how firms' productivity, which is a dependent variable, changes when the governance indexes change. The

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<sup>29</sup> Olson *et al.* (1998) found that governance variables explain around 50% of growth rate changes among countries. Rodrik (1999) explains better economic performances of countries after the Second World War in terms of more appropriate social institutions. Finally Robinson *et al.* (2001) proved that different European colonization strategies provided exogenous institutions which impacted consistently on productivity and on differences in income per-capita among many developing countries.



indexes are independent variables built from a questionnaire administered to a selected sample of Polish firms. I used an ordered probit model. As I expected, I have found that there is a negative relationship between the productivity and two indexes: Persistence of Informal Institutions and Extra Cost-Corruption. On the contrary, there is a positive relation between productivity and four other indexes: Trust, Formal Institutions, Legal System-Property Right and Support of Public Institutions.

The indexes' differentials and the consequent different impact on the productivity change show a strong difference between the East and the West of Poland. The informal institutions such as: trust relations, loyalty, the tendency to cooperate between economic agents, and other "immaterial factors" called in a broader sense "social capital" impact significantly on productivity. In fact, these factors eliminate or reduce problems due to phenomena of adverse selection and moral hazard, lack of information, uncertainty, rent-seeking and free-riding (or opportunism). An higher level of trust may cause an increase in investment and in productivity (Keynes 1936), an improvement in economic relations (Arrow 1975), an overcoming of risk (Olson 1982), the promotion of social interactions and, therefore, the creation of networks that allow for the flow of knowledge, the exchange of information, the cooperation between agents and the creation of more productive industrial areas (or districts).<sup>30</sup>

Trust, as social capital, is a non-economic source of good economic performances. All the social values and norms that impose respect, common acceptance of certain rules and principles, cooperation, the conviction of the honesty and the reliability of other agents, the respect of rules and agreements, the conviction that the another agent would not cause damage, have a very positive effect on productivity. They stimulate cooperation processes, increase exchanges and the intensity of economic relations, stimulate sharing of technologies and knowledge, reduce information asymmetries, and reduce transaction costs with a great advantage for productivity. This resource seems to be much more consistent in the West than in the East of Poland.

In the context of institutional economics literature, I have come up with several conclusions. Like Jones and Hall (1998) and Olson et al. (1998), I found that the difference between GDP levels is only partially explained by physical and human capital. "Residual" productivity makes the difference between the output of countries. Residual productivity seems to be caused by economic institutions which in the analysis of Jones and Hall (1998) are called "Social infrastructure" and in my analysis are captured by the indexes of governance. Hence, the difference between economic institutions explains the main difference between countries in terms of the GDP (Jones and Hall, 1998; Olson et al. 1998). In my case study, I found that the differences of governance indexes between the East and West of Poland seem to explain the main economic differences between the western and eastern parts of the country. In order to improve the consistency of the relations which I found with the ordered probit model, I have also correlated, through an OLS model, the indexes with actual productivity data (output/workers). The results are very similar to the previous with subjective data. Some causality tests exclude reverse causation problems between productivity and the index Extra-cost and between productivity and the index Informal, while reverse causation problems cannot be completely excluded with the indexes Trust and Support. Similarly

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<sup>30</sup> The case of the Italian Industrial Districts is a good example which proves the direction of the relationship (↑ trust and then ↑ productivity) (Becattini 1979). Moreover there is a growing literature focusing on social capital in transition economies confirming that thesis (see Raiser 1997; Raiser *et al.* 2001; Kornai *et al.* 2004; etc.)

to the results of Bardhan (2005), the Index Legal-Property right and the index Formal do not seem to be statistically good explaining variables of actual productivity data. Finally, I have in some respects improved the indexes proposed by other institutional economists, trying to capture relevant institutions. Firstly, some of those indexes seem to pay little attention to the institutional change in transition economies (except for the EBRD indexes). Secondly, they neglect the dimension of informal institutions. Thirdly, they have data at a national level and not at a regional level. Conversely, all of those elements are included in the indexes I proposed, and to some extent, the particular East-West Polish dualism was captured by my institutional indexes. However, understanding the role of institutions in economic development is an extremely important area of research and more empirical evidence on understanding this relationship is certainly needed.

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**APPENDIX**

## QUESTIONNAIRE (English version)

PRELIMINARY QUESTIONS about the nature of the Company:

**A**

Name of Company:		
Location of Headquarters in Poland:		

Region:

Production Location (if different):		
How many Owners:		
or diffused control of Shareholders:	YES	NO
or concentrated control of Shareholders	YES	NO
Annual sales 2002, in Zloty (if available)		

Year of creation:
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**CHOOSE THE RELEVANT ANSWERS WITH X****B**

<b>Sector of Production (please indicate the specific goods or services if applicable):</b>
a) Agriculture:
b) Manufacturing industry:
c) Service Sector/retail:

**C**

<b>About our Respondent</b>
Is the respondent
a) Manager/director
b) Owner
c) other (please indicate the specific title)
Level of Education :
a) MA (or equivalent)
b) Postgraduate education
c) BA(or equivalent)
d) secondary school

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e) primary school
f) other (please indicate)

**D**

<b>Size: Please indicate the number of employees.</b>
a) SME (Small or Medium Size Enterprise):if 250 or less employees. N...
b) LE (Large Enterprise): if more than 250 employees. N...

**E**

<b>Ownership: (if ownership is mixed please indicate the percentage of state and private sector involvement, if available)</b>
a) 100% State Owned Enterprise (SOE)
b) Mixed                      Ownership % of State...                      Ownership % of Private.....
c) Municipal company
d) 100% Private Ownership
e) Cooperatives
f) Other (such as:)

**F**

<b>Composition: (if the company receives both foreign and Polish investment, please indicate the % of each, if available)</b>
a) 100% Foreign direct investment (FDI)
b) Mix.                      Foreign Ownership % .....                      Polish Ownership % .....
c) 100% Polish Ownership

**G**

<b>Other information:</b>		
a) Company listed on the Stock Exchange	YES	NO
b) Former SOE (or municipal company)	YES	NO
If the company was previously SOE (or municipal), please indicate if it changed the kind of production:		
Former Production:	Actual Production:	
c) Completely New Enterprise (set up after 1989)	YES	NO
d) Always private Enterprise (set up before 1989)	YES	NO

**H**

<b>If the enterprise was privatised after 1989, what method of privatisation has it experienced?</b>
a) MBOs (Management buy-outs)
b) EBOs (Employee buy-outs)
c) Sale to outsiders (other Polish investors)
d) MP (Mass Privatisation)
e) Sale to foreign investors
f) Public Offering at the Stock Exchange
g) Combination of above
h) Others (such as:)

**I**

<b>Is the Company</b>
a) Export oriented
b) National Market oriented
c) Local Market oriented
(please indicate the percentage for each, from 0% to 100%)

**QUESTIONNAIRE**

(Choose the relevant answers with X next to the number)

<b>1. Do you think that public institutions (such as local administration, national government, chamber of commerce, public organisations and so on) are willing to help and to support your business?</b>				
Yes: 5				
No:1				
1	2	3	4	5

<b>2. Where do you find money capital to invest in Poland?</b>					
A lot:5					
None at all:1					
a) Borrowing from bank	1	2	3	4	5
b) Borrowing from friends	1	2	3	4	5
c) Borrowing from your family	1	2	3	4	5
d) Your own saving	1	2	3	4	5
e) State aid	1	2	3	4	5
f) Stock exchange	1	2	3	4	5
g) Re-investment of profits	1	2	3	4	5
h) Other (such as:)	1	2	3	4	5

<b>3. Where do you find information about conducting business activity?</b>					
A lot: 5					
None at all: 1					
a) Public administration <sup>31</sup>	1	2	3	4	5
b) Media	1	2	3	4	5
c) Friends	1	2	3	4	5
d) Colleagues	1	2	3	4	5
e) Business club	1	2	3	4	5
f) Foreign contacts	1	2	3	4	5
g) Chambers of Commerce	1	2	3	4	5
h) other (such as: )	1	2	3	4	5

<b>4. What were the main obstacles to start up your business?</b>					
Very serious obstacles: 5					
No obstacles :1					
a) The search for information	1	2	3	4	5
b) Lack of support by Polish government	1	2	3	4	5
c) Trust in the institutions <sup>32</sup>	1	2	3	4	5
d) Bureaucracy	1	2	3	4	5
e) Financial	1	2	3	4	5
f) Problem with the organized crime	1	2	3	4	5
g) High bankruptcy risk	1	2	3	4	5
h) Uncertainty of property rights	1	2	3	4	5
i) Corruption problems	1	2	3	4	5
j) Other (such as:)	1	2	3	4	5

<sup>31</sup> By Public administration I mean local and national public administration, and public agencies.

<sup>32</sup> By Institutions I mean administrative, political and economical framework such as: public office, financial institutions, public administration, property rights, commercial law, etc.

<b>5. How do you assess the role of the government<sup>33</sup> in fighting against corruption, grey market, too long bureaucratic process?</b>					
Very good : 5					
Very bad : 1					
a) Corruption	1	2	3	4	5
b) Grey Market	1	2	3	4	5
c) Too long bureaucratic process	1	2	3	4	5

<b>6. How do you assess the legal system in Poland?</b>					
Very Good: 5					
Very bad : 1					
a) Protection of contract	1	2	3	4	5
b) Judges	1	2	3	4	5
c) Performance of Courts	1	2	3	4	5
d) Police	1	2	3	4	5
e) Legal protection of entrepreneurs against the organised crime	1	2	3	4	5
f) Reinforcement of property rights	1	2	3	4	5
g) Consistency of Law	1	2	3	4	5
h) Completeness of Law	1	2	3	4	5

<b>7. Do you take advantage of services offered by the banking system?</b>					
Yes, a lot: 5					
None at all :1					
a) Borrowing	1	2	3	4	5
b) Saving	1	2	3	4	5
c) Investment Fund	1	2	3	4	5
d) Other (such as:)	1	2	3	4	5

<b>8. Do you trust Polish customers/suppliers and foreign customers/suppliers?</b>					
A lot: 5					
No trust: 1					
a) Polish customers	1	2	3	4	5
b) Polish suppliers	1	2	3	4	5
c) Foreign customers	1	2	3	4	5
d) Foreign Suppliers	1	2	3	4	5

<sup>33</sup> You should consider all governments between 1990 and 2002.



<b>9. Do you think that in Poland there are still some old rules from the communist period that hinder your business?</b>				
Yes, a lot : 5				
None at all : 1				
None 1	2	3	4	A lot 5

<b>10. Do you run your business in soft or hard budget constraint?</b>				
Hard: 5				
Soft : 1				
1	2	3	4	5

<b>11. How long do you usually wait to receive the payment for the product/service?</b>				
(tick one or more of the relevant category)				
a) No time (to the delivery).				
b) Few days.				
c) 1 Month.				
d) 3 Months				
e) It depends on the financial situation of the customers.				
f) It depends on the will of the customers.				
g) It depends on the contract				
h) Other (such as: )				

<b>12. How do you decide the sale price of your product/service?</b>					
Maximum: 5					
Minimum: 1					
a) It depends on the price of other firms	1	2	3	4	5
b) It depends on the tax that we have to pay	1	2	3	4	5
c) It depends on the limits fixed by the administration	1	2	3	4	5
d) It depends on the price of foreign product	1	2	3	4	5
e) It depends on the market we sell to	1	2	3	4	5
f) It depends on the production costs	1	2	3	4	5
g) It depends on other costs (such as:)	1	2	3	4	5
h) It depends on unofficial additional payments	1	2	3	4	5
i) It depends on the concentration of the market	1	2	3	4	5
j) It depends on the transaction costs <sup>34</sup>	1	2	3	4	5

<sup>34</sup> Transaction costs are costs (official and unofficial) incurred in order to make an exchange, to transfer the property, to gather information, to protect own business etc.

<b>13. What is the impact of representative costs on the company budget <sup>35</sup> in terms of:</b>					
Very High: 5					
Very low: 1					
a) Employers' association	1	2	3	4	5
b) Chamber of Commerce	1	2	3	4	5
c) Lobbying	1	2	3	4	5
d) Local Administration	1	2	3	4	5
e) Political Parties	1	2	3	4	5
f) People in power	1	2	3	4	5
g) Other entertainment expenses	1	2	3	4	5
h) Other unofficial expenses	1	2	3	4	5
i) Protection	1	2	3	4	5
j) Advertising/Media/Gadget	1	2	3	4	5
k) Time cost of management spent with government officials	1	2	3	4	5
l) Other (such as:)	1	2	3	4	5

<b>14. In the Polish business environment do you think some irregular additional payments have to be paid in the following items?</b>					
Yes always: 5					
No, never: 1					
a) Respect of property rights	1	2	3	4	5
b) Get selling licenses	1	2	3	4	5
c) Gathering information	1	2	3	4	5
d) Get public procurements	1	2	3	4	5
e) To Start up business	1	2	3	4	5
f) Other (such as:)	1	2	3	4	5

<sup>35</sup> By *representative Costs* I mean every expense (official and unofficial) that the company must pay to conquer market, to be known, to have their interests well represented by lobbying, to have protection and so on.

<b>15. Do you think, lobbies of entrepreneurs in Poland can affect the building and/or the change in the business legislation.</b>				
Yes a lot: 5				
No, at all: 1				
1	2	3	4	5

<b>16. In which of the following sections do you think that lobbying towards your government would bring an improvement in the performance of your business sector?</b>					
Yes a lot: 5					
No at all: 1					
a) Tax concessions or subsidies	1	2	3	4	5
b) Entry-barriers to do business	1	2	3	4	5
c) Raise the prices of your products/services	1	2	3	4	5
d) Import tax and other barriers	1	2	3	4	5
e) Export subsidies or other helps	1	2	3	4	5
f) Other (such as:)	1	2	3	4	5

<b>17. Do you think there is any resistance by the below-mentioned groups towards transition from planned economy to the market economy in Poland?</b>					
Yes, a lot : 5					
None at all : 1					
a) Successors of parties which existed before 1989 <sup>36</sup>	1	2	3	4	5
b) Elderly people	1	2	3	4	5
c) Workers	1	2	3	4	5
d) Previous nomenclature	1	2	3	4	5
e) Elderly bureaucrats	1	2	3	4	5
f) Centre-Right political parties which were set up after 1989 <sup>37</sup>	1	2	3	4	5
g) Young people	1	2	3	4	5
h) Unemployed	1	2	3	4	5
i) Other (such as: )	1	2	3	4	5

<sup>36</sup> Present successors of the political parties, which existed before 1989, are for example SLD or PSL.

<sup>37</sup> Centre-Right parties which were set up after 1989 may include both parties which are still present in the political arena and non-existent any more: UD, KPN, AWS, UW, ROP,PC, PO, etc

<b>18. How adapted, would you say, the public administration and the bureaucracy are in the context of the new market economy?</b>				
Very adapted: 5				
Not adapted: 1				
1	2	3	4	5

<b>19. Do you agree with the reform process which has been taking place in Poland since the 90s?</b>
(Sign with X the relevant point)
5) Yes, I completely agree
4) I mostly agree
3) I don't know
2) I mostly disagree
1) No, I completely disagree

<b>20. In the last 2 years (2001/2002) your performance of sale:</b>		
improved	Dropped	did not change

<b>21. In the last 2 years (2001/2002) the productivity<sup>38</sup> of your enterprise:</b>		
improved	Dropped	did not change

<b>22. In the last 2 years (2001/2002) the number of employees in your enterprise:</b>		
increased	Dropped	did not change

<b>23. Do your employees avoid the effort at work?</b>				
Yes, they do: 1				
Not, they do not: 5				
Yes 1	2	3	4	Not 5

<b>24. What type of payment policy do you have in your enterprise?</b>
(tick one or more of the relevant category)
a) Fixed wage
b) Flexible wage
c) Premium incentives
d) Other bonus incentives
e) Other (such as:)

<sup>38</sup> Productivity means the relation between the output of your company and the inputs used in productive process.

<b>25. How important are the following characteristics to you when you decide to employ someone?</b>					
Very important : 5					
No important : 1					
a) A high education (MA or above)	1	2	3	4	5
b) Knowledge of foreign languages	1	2	3	4	5
c) Communication skills	1	2	3	4	5
d) Will to learn	1	2	3	4	5
e) Previous experience	1	2	3	4	5
f) Reference from family	1	2	3	4	5
g) Reference provided by other companies	1	2	3	4	5
h) Reference from friends	1	2	3	4	5
i) A hard worker	1	2	3	4	5
j) Other (such as )	1	2	3	4	5

<b>26. Do you think that trade protectionism in Poland would help your Business?</b>
(Sign with X the relevant point)
a) Yes
b) No
c) I do not know

(This question needs to be answered by Polish Companies only)					
<b>27. Are you in contact with foreign entrepreneurs?</b>					
Intensive contacts: 5					
No contact: 1					
1	2	3	4	5	

(This question needs to be answered by Polish Companies only)					
<b>28. What kind of problems do you have with foreign entrepreneurs?</b>					
(Do not answer this question if you have chosen the answer 1 in the previous question).					
Several 5					
None at all: 1					
a) Judicial	1	2	3	4	5
b) Language misunderstandings	1	2	3	4	5
c) Different goals	1	2	3	4	5
d) In relation to the customers	1	2	3	4	5
e) Cultural <sup>39</sup>	1	2	3	4	5
f) Lack of trust	1	2	3	4	5
g) Contractual differences	1	2	3	4	5
h) Other (such as:)	1	2	3	4	5

(This question needs to be answered by Polish Companies only)					
<b>29. The presence of foreign entrepreneurs sometimes brings new rules to how people do business. Are these new rules different from the way you conduct business in the following areas?</b>					
Very much : 5					
Not at all: 1					
a) In the marketing strategy	1	2	3	4	5
b) In the labour organisation	1	2	3	4	5
c) In the management	1	2	3	4	5
d) In the wage policy	1	2	3	4	5
e) In the competition	1	2	3	4	5
f) In the rules to stipulate contracts	1	2	3	4	5
g) Other (such as)	1	2	3	4	5

<sup>39</sup> By cultural, I mean differences in terms of habits, values, and strategies to make profits, between Polish and foreign entrepreneurs.

(This question needs to be answered by foreign Companies only)					
<b>30. What kind of problems do you have with Polish entrepreneurs?</b>					
Several: 5					
None at all: 1					
a) Judicial	1	2	3	4	5
b) Language misunderstandings	1	2	3	4	5
c) Different goals	1	2	3	4	5
d) In relations to the customers	1	2	3	4	5
e) Cultural <sup>40</sup>	1	2	3	4	5
f) Lack of trust	1	2	3	4	5
g) Contractual differences	1	2	3	4	5
h) Other (such as:)	1	2	3	4	5

(This question needs to be answered by foreign Companies only)					
<b>31. What are your incentives to invest in Poland?</b>					
Strong incentives:5					
No incentives:1					
a) Lower labour cost (labour-seeking)	1	2	3	4	5
b) Geographical position	1	2	3	4	5
c) Exploiting raw endowment resources (resource-seeking)	1	2	3	4	5
d) Big Market (market-seeking)	1	2	3	4	5
e) High returns	1	2	3	4	5
f) Low investment risk	1	2	3	4	5
g) Other (such as:)	1	2	3	4	5

<sup>40</sup> By cultural, I mean differences in terms of habits, values and strategies to make profits, between foreign and Polish entrepreneurs.

(This question needs to be answered by foreign Companies only)					
<b>32. What are the obstacles to invest in Poland?</b>					
Very serious obstacles: 5					
No obstacles: 1					
a) Political instability	1	2	3	4	5
b) Distance from EU market	1	2	3	4	5
c) High country risk	1	2	3	4	5
d) Trust in the institutions <sup>41</sup>	1	2	3	4	5
e) Respect of contracts	1	2	3	4	5
f) Different consumers' habits	1	2	3	4	5
g) Different mentality of local entrepreneurs	1	2	3	4	5
h) Adverse attitude of customers	1	2	3	4	5
i) Adverse attitudes of consumers	1	2	3	4	5
j) Mafia and corruption	1	2	3	4	5
k) Protection of property rights	1	2	3	4	5
l) Persistence of old rules from the communist period	1	2	3	4	5
m) Mentality of elderly bureaucrats	1	2	3	4	5
n) Lack of support by institutions and public agencies <sup>42</sup>	1	2	3	4	5
o) Other (such as:)	1	2	3	4	5

(This question needs to be answered by foreign Companies only)					
<b>33. When you invested in Poland, how much advantage did you take of each of the following items?</b>					
Yes a lot: 5					
None at all: 1					
a) Polish banking and financial system	1	2	3	4	5
b) Polish Agency for Foreign investment (PAIZ)	1	2	3	4	5
c) Polish business club	1	2	3	4	5
d) Polish management	1	2	3	4	5
e) Banking and financial system of your country	1	2	3	4	5
f) Business club of your country	1	2	3	4	5
g) Management of your country	1	2	3	4	5
h) Your own Saving	1	2	3	4	5
i) Other (such as:)	1	2	3	4	5

<sup>41</sup> By Institutions I mean administrative, political and economical framework such as: public office, financial institutions, public administration, property right, commercial law, etc.

<sup>42</sup> Such as Polish agency for foreign investment (PAIZ), and other Polish institutions.



(This question needs to be answered by export Companies only)					
<b>34. Where do you get information about your export activity?</b>					
A lot: 5					
None at all: 1					
a) Information provided by public agencies	1	2	3	4	5
b) Local administration	1	2	3	4	5
c) Business clubs	1	2	3	4	5
d) From foreign investors running business in Poland	1	2	3	4	5
e) National colleagues	1	2	3	4	5
f) Foreign colleagues	1	2	3	4	5
g) Polish embassy	1	2	3	4	5
h) Trade office representative abroad	1	2	3	4	5
i) Press	1	2	3	4	5
j) Friends	1	2	3	4	5
k) Chambers of Commerce	1	2	3	4	5
l) Other (such as:)	1	2	3	4	5

(This question needs to be answered by export Company only)					
<b>35. What are the main problems with exporting?</b>					
A lot: 5					
None at all: 1					
a) Export credit guarantee	1	2	3	4	5
b) Credit finance for export	1	2	3	4	5
c) Market information	1	2	3	4	5
d) Insurance	1	2	3	4	5
e) Information and regulation	1	2	3	4	5
f) Information on quality control	1	2	3	4	5
g) Information on relevant business practices	1	2	3	4	5
h) The type of package	1	2	3	4	5
i) Contact with foreign buyers	1	2	3	4	5
j) Trade representative abroad	1	2	3	4	5
k) Transport	1	2	3	4	5
l) Zloty exchange rate too overvalued	1	2	3	4	5
m) Lack of trust in the foreign customers	1	2	3	4	5
n) Lack of support by institutions and public agencies	1	2	3	4	5
o) Financial situation of foreign customers	1	2	3	4	5
p) Other (such as:)	1	2	3	4	5

(The following questions are about accession to the EU. They need to be answered by all Companies)  
(sign with X the relevant point)

**36. Do you support the Polish accession to the EU?**

a) Yes

b) No

c) I do not know

**37. How consistent do you think that the new laws promoted under the push for harmonisation to EU legislation (with regards do business) are with the way in which you do business?**

Very consistent: 5

Not consistent: 1

1	2	3	4	5
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**38. Do you know the European legislation relevant to your business?**

a) Yes

b) Some

c) None at all

**39. Do your products/services respect the European Norms?**

100 %: 5

0 %: 1

in terms of:

a) Quality control	1	2	3	4	5
b) Safety of workers	1	2	3	4	5
c) Competition	1	2	3	4	5

**40. Does your company declare all year's turnout to relevant authorities (Tax Office)?**

Yes

Partly

Not