# THE INFLUENCE OF COUNTRY-LEVEL GOVERNANCE ON BUSINESS ENVIRONMENT AND ENTREPRENEURSHIP: A GLOBAL PERSPECTIVE

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**Abstract**

The main purpose of this study is to analyze the influence of country-level governance on business environment and entrepreneurship for an international large sample of countries for a period of six years (2007-2012). The dimensions of country-level governance at macroeconomic level will be captured by using the following six indicators developed by the World Bank: 1. Voice and accountability; 2. Political stability and absence of violence; 3. Government effectiveness; 4. Regulatory quality; 5. Rule of law; 6. Control of corruption. To capture the quality of business environment we use the Ease of doing business index developed by the World Bank in its Doing Business report series. To measure entrepreneurship we use the World Bank Group Entrepreneurship Survey where the number of new registered businesses, as a percentage of the working age population is defined as a measure of formal entrepreneurship. In order to capture the extent to which country-level governance does influence business environment and entrepreneurship, we analyze the data using cross-sectional time-series random effects generalized least square (GLS) models. The results of this panel data analysis clarifies and quantifies the influence that various characteristics of country-level governance could have on business environment and entrepreneurship. Therefore, this study could have significant implications for policy-makers as well as for businesses.

**Keywords:** business environment, entrepreneurship, governance indicators, legal origin, control of corruption, regulatory quality.

**JEL Classification:** M21, M13, L26

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**Introduction**

The influence that country-level governance exerts on business environment and entrepreneurship has received a great deal of attention in the recent academic literature (Demirguc-Kunt, Love and Maksimovic, 2006). A good country-level governance involves accountability, transparency in policies making and rule of law, while all these elements play a significant role for economic growth and business development. In order to ensure the predictability of business interactions between different partners, there is an absolute necessity to provide an effective framework where property rights are clearly established and where policies issued by government are perceived as market-friendly, thus stimulating business and entrepreneurship development.

Demirguc-Kunt, Love and Maksimovic (2006) found that business environment is much better stimulated in countries with more developed financial and legal systems, clear establishing of property rights, effective bankruptcy processes and lower cost of registration and taxation. Also, Price, Román and Rountree (2011) appreciate that many studies in governance and business literature have argued the positive relationship between the quality of country-level governance and more effective allocations of economic resources, stimulating economic development and competitiveness of business environment. Thus, there are sufficient arguments to state that the ease of doing business should represent one of the most significant topics on governments' agenda, while looking for solutions to make business regulation and the regulatory process more accessible and friendly-market.

Entrepreneurship is considered one of the most important force, which is essential for the continued development of the modern market economy, because a greater number of new businesses can foster economic growth (Djankov et al., 2002; Klapper, Laeven and Rajan, 2006; Klapper et al., 2007). There is no unique and general accepted definition for entrepreneurship. One of the first definition given by Schumpeter (1911) and kept also in today's literature (Klapper, Laeven and Rajan, 2006) defined entrepreneurship as *"the assumption of risk and responsibility in designing and implementing a business strategy or starting a business"*, while Gough (1969) considers that entrepreneurship *"refers to a person who undertakes and operates a new enterprise or venture, and assumes some accountability for the inherent risks"* (Gough, 1969 cited by Klapper, Laeven and Rajan, 2006). For the purpose of our paper we'll use the definition issued by The World Bank, which defines entrepreneurship as *"the activities of an individual or a group aimed at initiating economic activities in the formal sector under a legal form of business"* (Klapper et al., 2007). This definition is often used in previous theoretical and empirical entrepreneurship studies.

Starting from the previous theoretical and empirical literature that stressed the idea of the relevant influence that quality of governance at country-level could have on business environment and entrepreneurship, this paper intends to develop a study divided in two main parts. Within the first part, the objective is to investigate whether the quality of country-level governance captured through six governance indicators developed by the World Bank influences the quality of business environment, which is measured through the index – *Ranking of the ease of doing business* - created and developed by the World Bank in its *Doing Business* report series. The second part of our study is dedicated to the analysis of the influence that the quality of governance, measured through the same variables, influences the formal entrepreneurship, measured as the number of new registered businesses as a percentage of the working age population, this index being developed by

the *World Bank Group Entrepreneurship Survey*. Some control variables were also inserted in our models to test the robustness of the results.

The results of this study intend to enrich the academic literature, by arguing through the empirical models, the idea that certain features of governance at national level, such as the quality of the regulatory framework and control of corruption exerts significant positive influence on business environment and entrepreneurship. The findings may provide useful information for decision makers to improve and streamline the businesses and entrepreneurship.

The remainder of the paper is organized as follows: Section 1 synthesizes the main results in previous empirical and theoretical literature that reveal the connections between quality of governance and business environment and entrepreneurship; Section 2 describes the main coordinates in research design, sample and selected variables; Section 3 deals with the empirical analysis of the results and finally, the conclusions, that map out some ideas for future work on the determinant factors for business environment and entrepreneurship. The findings in this study provide context for initiating constructive debates concerning the real influence of some governance characteristics on business environment and entrepreneurship.

## 1. Background literature

There are a lot of findings in previous theoretical and empirical literature regarding the relationship between governance and various development outcomes. Çule and Fulton (2013) state that the influence of governance on business environment is supported by the premise that an economy with a moderate level of bureaucracy with a high concern for proper regulatory quality and effective instruments to control the corruption is expected to provide an effective business environment that could increase economic performance. Jalilian, Kirkpatrick and Parker (2006) suggest that there is a significant relationship between regulatory quality and economic and business performance. The casual link between business performance and quality of governance was also confirmed by the findings of Olson, Sarna and Swamy (1998). Even more, Kaufmann, Kraay and Mastruzzi (2005) demonstrate that the quality of governance has a direct impact on incomes.

In this respect, Kappler et al. (2007) state there are relevant connections between business environment and entrepreneurial activity, on one side, and governance, on the other side. By using the multivariate panel analyses, the same authors found that significantly higher percentages of firm registration and entry are specific for countries with better governance. Also, entrepreneurship is positively correlated with economic growth, this finding being consistent with the previous ones (Brander et al., 1998). Also, there are a lot of viewpoints in academic literature (Havrylyshyn, 2001; Kaufmann, Kraay and Mastruzzi, 2006; Klapper, Laeven and Rajan, 2006; Haggard and Tiede, 2011; Dabija, Băbuț (Comiati) and Pop, 2013; Amorós, Bosma and Levie, 2013; Săvoiu, Dinu and Ciuca, 2013; Dau and Cuervo-Cazurra, 2014; Thai and Turkina, 2014; Dabija, Dinu and Tachiciu, 2014) that argue that fostering of greater entrepreneurial activity is stimulated, among other things, by a solid regulatory framework, clearly-defined property rights, transparent and easy procedures required to start a business and effective political and economic institutions. In this vein, a strong argument is also provided by Klapper, Lewin and Delgado (2009) whose analysis of the World Bank's Global Enterprise Survey data collected from 100 countries for an eight-year period shows that an effective regulatory

environment significantly contributes to the increasing of the number of registered businesses.

Even if scholars in entrepreneurship literature tend to agree on various categories of determinant factors on entrepreneurship, their conclusions suggest different findings and opinions about the relative importance of each factor, over time. For example, Thai and Turkina (2014) state that formal entrepreneurship is stimulated by the quality of governance, while informal entrepreneurship is discouraged, same idea being also shared by Dau and Cuervo-Cazurra (2014). Also, they explain the positive correlation between higher rates of entrepreneurship and better level of governance because *"entrepreneurs consider easier and less costly to establish new firms and engage in economic relationships because they can trust the regulatory framework to solve their disputes with others at low costs".* Kaufmann, Kraay and Mastruzzi (2006) note that good institutions and a high level of business development positively influences entrepreneurship. Kappler et al. (2007) found that entrepreneurship is hardly related to greater economic development, formal sector participation, and better governance. Also, they argued that *„countries with lower barriers to entry and less corruption generally see higher percentages of firm registrations and entry*". The influence of corruption on entrepreneurship was also emphasized by Anokhin and Schulze (2009), who note that better control of corruption is associated with a rising level of entrepreneurship, because the efforts to foster entrepreneurship within an economy will be more effective if mechanisms for controlling corruption are well designed and implemented.

On the other side, as Thai and Turkina (2014) remarked in previous theoretical and practical literature, there are several studies which demonstrate a negative relationship between the factors mentioned above and the national rates of entrepreneurship or no relationship at all. Analyzing these studies, they noted that studies in favour of positive relationship between economic development and entrepreneurship are based on variables using number of registered business data, while the other studies used the general level of entrepreneurship data provided by the Global Entrepreneurship Monitor (GEM), which includes both formal and informal entrepreneurship (Reynolds, 2005 cited by Thai and Turkina, 2014).

The analysis of the previous studies results guided us to formulate the following research questions on which the empirical study developed in this paper aims to find the answer:

***RQ1****: Which of characteristics of country level governance most strongly influence business environment?*

***RQ2****: Which of characteristics of country level governance most strongly influence entrepreneurship?*

## 2. Research design

### 2.1. Sample

In order to answer to the first research question *(RQ1),* it was selected a sample of 132 countries from all over the world, 792 observations for a six years period, from 2007 to 2012. The selection of countries and years is based on the availability of data. The sample provides a broad geographical representation from all six continents: Africa (33 countries); North and Central America (10 countries); South America (13 countries); Asia (36 countries); Europe (38 countries) and Oceania (2 countries).

In case of the second research question *(RQ2)*, the sample for which data concerning entrepreneurship was available was smaller. Data was available only for 99 countries and 4 of them were excluded because they only had 1 or 2 observations for the selected period, from 2007 to 2012. Therefore, the final counts 95 countries from all six continents: Africa (16 countries); North and Central America (6 countries); South America (8 countries); Asia (27 countries); Europe (36 countries) and Oceania (2 countries) with 530 observations for a six years period, from 2007 to 2012.

Our data include data from all five law origin countries: English Common Law; French Civil Law; German Civil Law; Scandinavian Civil Law; and Socialist/Communist Law.

**2.2. Variables**

In line with our scientific objectives, we used variables based on the previous studies on the topic. Table 1 summarizes the variables, their description, measures and sources of data used in the main analyses. To measure the quality of business environment we use the *Ranking of the ease of doing business* developed by the World Bank in its *Doing Business* reports. The premise of this report is that *"economic activity requires good rules[...] rules that increase the predictability of economic interactions and provide contractual partners with certainty and protection against abuse"* (World Bank, 2012 – Doing business in a more transparent world).

To measure formal entrepreneurship we use the data provided by the World Bank Group Entrepreneurship Survey (Klapper et al., 2007; World Bank, 2014). This report measures entrepreneurial activity around the world. This database provides annual data from 2000 to 2012 and includes cross-country time-series data on the number of total and newly register business in more than 100 countries around the world. According to Kappler et al. (2007) to capture formal entrepreneurship, this is defined as being*: "any economic unit of the formal sector incorporated as a legal entity and registered in a public registry [...]"* (Kappler et al., 2007, p. 4). The information disclosed in this study is collected from business registries and other government sources in each of the countries covered. This indicator is widely used in academic literature when studying the effects of various determinant factors for entrepreneurship (see for instance, Dau and Cuervo-Cazurra, 2014).

To measure country-level governance we use the *governance indicators* developed by the World Bank - *The Worldwide Governance Indicators*, where all six governance dimensions are quantified for more than 200 economies, starting from the information provided by more than 40 data sources produced by over 30 various organizations worldwide, this database being updated on annual basis, since 2002. The main objective of this report is to measure the quality of governance through six governance aggregate indicators such as: *1.Voice and Accountability; 2.Political Stability and Absence of Violence; 3.Government Effectiveness; 4.Regulatory Quality; 5.Rule of Law* and *6.Control of Corruption*, while all these six aggregated indicators are developed based on the methodology described in their previous companion paper "*Aggregating Governance Indicators*" (Kaufmann, Kraay and Zoido-Lobaton, 1999a, b).

We control for other possible predictors of business environment and entrepreneurship using data from the World Development Indicators (World Bank, 2013b). Thus, we decided to use natural log of GNI (gross net income) per capita which expresses the level of economic development, starting from the premise that richer individuals have more resources to create businesses and to maintain a pro-business market.

Also, thinking about the main characteristics of an effective country-level governance which are, essentially, given by the capacity of the government to design and implement sound policies and regulations to support the development of the business sector by promoting and applying an effective regulatory framework, we decided to introduce additional three control variables that are able to measure some of the most relevant characteristics of country-level governance. Therefore, the additional control variables are: *Legal origin; Judicial independence; Efficiency of legal framework in challenging regulations* (all control variables are described in Table 1). The choice of legal origin as a control variable is based on the results of studies from previous literature (Reynolds and Flores, 1989; La Porta et al., 1997, 1998, 1999; La Porta, Lopez and Shleifer, 2008) highlighting the influence of the legal system on business environment and investors. The last two control variables were extracted from the *Global Competitiveness Report* issued by the World Economic Forum.

**Table 1. Description of variables and sources of data**

| Variable | | Type | Description |
|---|---|---|---|
| Ranking on ease of doing business | | *Dependent variable* | The ease of doing business index ranks economies from 1 to 183. For each country included in the sample, the ranking is calculated as the average of the percentile rankings on each of the topics covered by the index calculated in Doing Business. *(Source: Doing Business Reports for 2007-2012)* |
| Formal entrepreneurship | | *Dependent variable* | Number of new registered businesses as a percent of the working-age population. *(Source: World Bank Group Entrepreneurship Survey)* |
| **Country-level governance indicators** | 1.Voice and accountability | *Independent variable* | It reflects the perception of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media [It ranges from approximately – 2.5 (weak) to 2.5 (strong) governance performances]. *(Source: The Worldwide Governance Indicators (WGI))* |
| | 2.Political Stability and Absence of Violence | *Independent variable* | It reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism [It ranges from approximately – 2.5 (weak) to 2.5 (strong) governance performances]. *(Source: The Worldwide Governance Indicators (WGI))* |
| | 3.Government effectiveness | *Independent variable* | It reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. [It ranges from approximately –2.5 (weak) to 2.5 (strong) governance performances]. *(Source: The Worldwide Governance Indicators (WGI))* |
| | 4.Regulatory quality | *Independent variable* | It reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development [It ranges from approximately – 2.5 (weak) to 2.5 (strong) governance performances]. *(Source: The Worldwide Governance Indicators (WGI))* |

| | | | |
|---|---|---|---|
| | 5.Rule of law | *Independent variable* | It reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence [It ranges from approximately – 2.5 (weak) to 2.5 (strong) governance performances].<br>*(Source: The Worldwide Governance Indicators (WGI))* |
| | 6. Control of corruption | *Independent variable* | It reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests [It ranges from approximately – 2.5 (weak) to 2.5 (strong) governance performances].<br>*(Source: The Worldwide Governance Indicators (WGI))* |
| Natural log of GNI (gross net income) per capita | | *Control variable* | The level of economic development is measured in terms of natural logarithm of Gross National Income per capita, Atlas method (current US$)*<br>*(Source:* World Development Indicators) |
| Legal origin | | *Control variable* | Identifies the legal origin of the Company Law or Commercial Code of each country. There are five possible origins: (1) English Common Law; (2) French Commercial Code; (3) German Commercial Code; (4) Scandinavian Commercial Code; and (5) Socialist/ Communists laws.<br>*(Source : Reynolds and Flores (1989) ; La Porta et al. (1997, 1998, 1999) și La Porta, Lopez and Shleifer (2008))* |
| Judicial independence | | *Control variable* | To what extent is the judiciary in your country independent from influences of members of government, citizens, or firms? [1 = heavily influenced; 7 = entirely independent]<br>*(Source: Global Competitiveness Reports)* |
| Efficiency of legal framework in challenging regulations | | *Control variable* | How efficient is the legal framework in your country for private businesses in challenging the legality of government actions and/or regulations? [1 = extremely inefficient; 7 = highly efficient]<br>*(Source: Global Competitiveness Reports)* |

### 2.2.1. Variables for testing the influence of governance on business environment

For answering to the first research question, the dependent variable is *Ranking on Ease of Doing Business* and it varies from 1 meaning most business friendly regulations to 183 (for our sample) meaning business least friendly regulations. Singapore maintained rank one for all six years and Chad was the country with the least business friendly regulations. All countries, except Singapore, changed their rank for the six years of observation. Some countries changed their rank dramatically: Rwanda from 45 to 158,

* We decided to use the natural logarithm of GNI per capita, because the logarithmic transformation stabilises the variance of GNI per capita values and also, because the log of that variable will grow as a linear function of time.

Azerbaijan from 38 to 99, Uruguay from 64 to 114, Croatia from 79 to 124. None of the independent and control variables had skewed distribution to require our attention.

**Table 2. Bivariate Correlation with Ranking on Ease of Doing Business**

Data for Year: 2012

| Variable | Correlation | |
|---|---|---|
| | Pearson Correlation | p-value |
| Voice and Accountability | -0.599 | <0.001 |
| Political Stability | -0.586 | <0.001 |
| Government Effectiveness | -0.851 | <0.001 |
| Regulatory Quality | -0.857 | <0.001 |
| Rule of Law | -0.815 | <0.001 |
| Control of Corruption | -0.776 | <0.001 |
| GNI per capita | -0.776 | <.0.001 |
| Judicial Independence | -0.696 | <0.001 |
| Efficiency of Legal Framework | -0.605 | <0.001 |

*Source: Own analysis*

The results disclosed in Table 2 and Table 3 are based on data for Year 2012 but the results for the other years are almost identical. The correlations with the dependent variable were predictably high and in the expected direction. The results are disclosed in Table 2. The premise is that a good quality of governance in the country stimulates a high-ranked business environment.

The effect of the legal origin is presented in Table 3. The Scandinavian legal origin is the best for the ease of doing business, followed by the German origin. The French legal origin is the worst for the ease of doing business. The overall differences by legal origin are statistically significant ($F=7.9$, $DF=4,124$, $p<0.001$). The French legal origin is statistically significantly worse than each and every one of the other four origins ($p<0.05$ with Bonferroni correction for multiple comparison for each comparison). Specifically, countries with French legal origin have an average rank of 101.0 on the dependent variable while countries with Scandinavian legal origin have an average rank of 9.0, countries with English legal origin have an average rank of 53.0. A smaller rank means it is easier to do business in the country. Although there are differences among the other four groups they are not statistically significant. In the literature there are other similar findings confirming that the French legal origin is not very business friendly (La Porta et al., 1999; La Porta et al., 2000; Korutaro and Biekpe, 2013). Also, Beck, Demirgűç-Kunt and Levine (2003) state that French legal origin countries record significant lower levels of financial development in comparison with German civil law and British common law countries.

**Table 3. Effect of Legal Origin**

Data for Year: 2012

| Legal Origin | Ranking on Ease of Doing Business | | |
|---|---|---|---|
| | Mean | Standard Deviation | Number of Countries |
| English | 70.5 | 53.0 | 37 |
| Socialist | 69.9 | 38.8 | 30 |
| French | 101.0 | 47.9 | 53 |
| German | 24.3 | 6.0 | 4 |
| Scandinavian | 9.0 | 3.7 | 5 |

*Source: Own analysis*

From the pool of available variables we searched for variables with the best quality for building a multivariate model. Some of the independent variables were highly correlated with each other* (e.g. Pearson correlation coefficient greater than 0.9) and we had to drop from consideration the following variables: *Government Effectiveness* and *Rule of Law*. We investigated all the potential factors for irregularities in their relationship to the dependent variable. One of them, the *Political Stability* factor, presented a problem. The bivariate relationship with the dependent variable measured by the simple correlation was statistically significant and in the right direction, namely the more politically stable the country is the easier it is to do business in the country. The partial correlation coefficient became not significant, i.e. when controlling the other independent factors the relationship is insignificant. All the other factors correlations remained significant. This is a sufficient reason to drop *Political Stability* as a factor in our multivariate model. This exclusion is not very detrimental to the analysis because *Political Stability* is strongly correlated to some of the remaining factors like *Regulatory Quality* and *Control of Corruption* (Pearson correlation = 0.8, $p<0.001$).

Two of the control factors *Judicial Independence* and *Efficiency of Legal Framework* have a similar problem. They were significantly correlated in bivariate relationship with the dependent variable but in the multivariate situation they became highly non-significant and their presence in the model is not justified. The French legal origin (indicator variable) remained, though, highly significant.

### 2.2.2. Variables for testing the influence of governance on entrepreneurship

For answering to the second research question, the dependent variable is given by formal entrepreneurship (named *Density*) which is defined as the number of newly registered businesses per 1000 working-age people (15-64 years of age). This index varies from 0.03 to 39 (for our selected sample). Cyprus maintains the top position with an average density of 27.4 and Ethiopia is at the bottom of the ranking, with an average density of 0.03. The raw dependent variable has very skewed distribution with long right arm. After applying the logarithmic transformation, the distribution became very close to normal distribution. The logarithmic version of the dependent variable (Density) will be used in the estimation of our second Model.

* Analysing bivariate relationships between independent variables (for the year 2012), it was noted there are highly correlated pairs: Government effectiveness with Regulatory Quality, Rule of Law and Control of Corruption; Regulatory Quality with Rule of Law; Rule of Law with Control of Corruption.

The correlations with the dependent variable were predictably high and in the expected direction. The results are presented in Table 4. The premise is that a good quality of governance in the country stimulates entrepreneurship, determining an increasing density of new firms.

**Table 4. Bivariate Correlation with Density**

Data for Year: 2012

| Variable | Correlation | |
|---|---|---|
| | Pearson Correlation | p-value |
| Voice and Accountability | 0.566 | <0.001 |
| Political Stability | 0.630 | <0.001 |
| Government Effectiveness | 0.623 | <0.001 |
| Regulatory Quality | 0.682 | <0.001 |
| Rule of Law | 0.606 | <0.001 |
| Control of Corruption | 0.579 | <0.001 |
| GNI per capita | 0.649 | <.0.001 |
| Judicial Independence | 0.413 | <0.001 |
| Efficiency of Legal Framework | 0.348 | 0.001 |

*Source: Own analysis*

The effect of the legal origin on *Density* is presented in Table 5. The Scandinavian legal origin is the best for the entrepreneurship and the German and the French are the worst. This is similar to the relationship with *Ranking on Ease of Doing Business* but this time the differences are not statistically significant. Still, countries with French legal origin have one of the lowest measures of entrepreneurship, but the differences are not statistically significant.

**Table 5. Effect of Legal Origin on Density**

Data for Year: 2012

| Legal Origin | Density | | |
|---|---|---|---|
| | Mean | Standard Deviation | Number of Countries |
| English | 0.61 | 1.7 | 26 |
| Socialist | 0.84 | 0.9 | 22 |
| French | 0.42 | 1.3 | 29 |
| German | 0.16 | 0.7 | 4 |
| Scandinavian | 1.67 | 0.5 | 5 |

*Source: Own analysis*

## 3. Results

### 3.1. Model estimation using Generalized Least Squares (GLS) – Governance and business environment

The purpose of this model is to evaluate the influence of significant governance indicators for *Ranking on Ease of Doing Business* and quantify their influence, size and statistical significance. We built a model with *Ranking on Ease of Doing Business* as dependent variable and independent variables: *Regulatory Quality*, *Control of Corruption*, and *Income* (log of GNI per person) while controlling for the *Legal Origin* (1=French,

0=Other). We analyze the data using cross-sectional time-series random effect generalized least squares (GLS) models, which is the most appropriate model for panel data (Dau and Cuervo-Cazurra, 2014; Greene, 2000). The model is presented in Table 6.

We developed a random-effects (RE) model because we believe that the differences between countries have major influence on our dependent variable. In addition, we were able to include a time-invariant variable *(Legal Origin*) in our model which is impossible for a fixed effects model. The RE model also allows us to generalize the inferences and effect sizes beyond the sample data used to evaluate the model. Our RE model has the required statistical properties. The RE model requires that the differences across countries are uncorrelated with the regressors and the test confirmed this requirement (Wald Chi-squared=525.5, $p<0.001$). All coefficients in the model are highly statistically significant. The overall coefficient of determination is $R^2=0.77$, i.e. 77% of the dependent variable variation is explained by the model. Our model has very strong explanatory power.

We also tested whether the RE model was appropriate by using the Breusch-Pagan Lagrange multiplier (LM) test. The null hypothesis here is that the variance across countries is zero, i.e. there is no significant difference across time (i.e. no panel effect). The LM test rejected the null hypothesis (LM=1053.2, $p<0.001$) and thus the RE model was considered as appropriate.

**Table 6. Influence of Governance on Ease of Doing Business – Model 1**

Panel Data: 132 countries and six years 2007-2012, GLS estimates

| Factors | Model | | | |
|---|---|---|---|---|
| | Coefficient | p-value | 95% Confidence Interval | |
| | | | Lower Limit | Upper Limit |
| Constant | 182.8 | <0.001 | 144.1 | 221.6 |
| Regulatory Quality | -20.5 | <0.001 | -28.0 | -13.0 |
| Control of Corruption | -8.6 | 0.004 | -14.3 | -2.8 |
| Income (log of GNI) | -11.9 | <0.001 | -16.2 | -7.6 |
| Legal Origin (1=French) | 24.4 | <0.001 | 16.4 | 32.3 |
| $R^2=0.7737$ | | | | |

Dependent variable: Ranking on Ease of Doing Business

*Source: Own analysis*

The interpretation of the coefficients in the model is somewhat complicated because they include both the within-country (by years, time panel) and between-country effects. In general, each coefficient measures the effect of specific factor on the dependent variable under certain conditions. In our model each coefficient represents the average effect of Factor "X" over the dependent variable *Ranking on Ease of Doing Business* when Factor "X" changes across time (one year) and between countries by one unit (next country).

According to our model, the following statistically significant factor effects are in place:

- one point increase in *Regulation Quality* brings, on average, 20.5 ranks improvement in the *Ranking on Ease of Doing Business*.
- one point increase in *Control of Corruption* brings, on average, 8.6 ranks improvement in the *Ranking on Ease of Doing Business*.

- one percent increase in income (GNI per capita) brings about 0.1 ranks improvement in the *Ranking on Ease of Doing Business*. The percent change interpretation is necessary because the income variable is a logarithm of GNI.
- if a country has a French legal origin on average its position in the *Ranking on Ease of Doing Business* worsens by 24.4 ranks.

Because of the nature of the RE model, these inferences could be generalized beyond our sample of 132 countries. The most influential factors for the *Ranking on Ease of Doing Business* are *Regulation Quality*, *Control of Corruption*, *Income (GNI per capita*) and *Legal Origin* (French vs. Other). The first three factors exhibit strong positive influence on the ease of doing business in the country. The French legal origin influences the ease of doing business negatively. The overall model has good statistical qualities and explains about 77% of the variation in the dependent variable.

To summarize our results, we find that the most influencing governance characteristics on business environment measured as the ease of doing business are the ones related to the capacity of government to formulate and implement sound policies and also the perception of the extent to which various petty and grand forms of corruption are well controlled by he authorized institutions. This result is in line with previous results (see for instance Gani and Duncan, 2007), which argue that the abuse of public power for the business sector can negatively influence business and economic activities.

### 3.2. Model estimation using Generalized Least Squares (GLS) – Governance and entrepreneurship

For testing the influence of quality of governance on entrepreneurship, we built a model with the Log of *Density* (measure of formal entrepreneurship) as dependent variable and a group of independent variables and also a group of control variables. Many of the variables were not statistically significant once included in the multivariate model and they were dropped off from the model. The panel data and the model required GLS estimation. The model is presented in Table 7.

**Table 7. Influence of governance on entrepreneurship – Model 2**

Panel Data: 95 countries and six years 2007-2012, GLS estimates

| Factors | Model 2 | | | |
|---|---|---|---|---|
| | Coefficient | p-value | 95% Confidence Interval | |
| | | | Lower Limit | Upper Limit |
| Constant | -4.492 | <0.001 | -6.073 | -2.912 |
| Political Stability | 0.213 | 0.001 | 0.088 | 0.337 |
| Regulatory Quality | 0.344 | 0.001 | 0.142 | 0.546 |
| Income (log of GNI) | 0.518 | <0.001 | -6.073 | -2.912 |
| $R^2$=0.5049 | | | | |

Dependent variable: Entrepreneurship (Log of Density)

*Source: Own analysis*

The tests confirmed that for Model 2 the differences across countries are uncorrelated with the regressors (Wald Chi-squared=150.1, p<0.001). All coefficients in the model are highly statistically significant. The overall coefficient of determination is $R^2$=0.51, i.e. 51% of the dependent variable variation is explained by the model. The

Breusch-Pagan Lagrange multiplier (LM) test (LM=1052.9, $p<0.001$) confirmed the RE model as more appropriate for our purposes.

According to our model 2, the following statistically significant factor effects are in place:

- one point increase in *Political Stability* brings, on average, 21.3% increase in the entrepreneurship *(Density)*.
- one point increase in *Regulatory Quality* brings, on average, 34.4% increase in the entrepreneurship *(Density)*.
- one percent increase in income (GNI per capita) brings about 0.5% increase in the entrepreneurship *(Density)*.

The overall model has relatively good statistical qualities and can be used for further research purposes. Regarding entrepreneurship, our findings suggest that a higher level of entrepreneurship is significantly related to a greater economic development, a more stable political environment and the capacity of government to promote and implement pro-business regulations that could stimulate the private sector. This finding is consistent with the previous findings of Brander et al. (1998) cited by Klapper et al. (2007) who found that entrepreneurship, measured both in terms of new registrations and entry rates is also positively correlated with economic growth.

**Conclusions, limits and research perspectives**

In conclusion, the results of this research provide empirically-supported models for the notion that some governance characteristics exert significant influence on business environment and entrepreneurship. Taken together, the theory and these models developed with relevant empirical evidence on large samples could suggest a number of implications for policy makers.

The first lesson for policy makers is that the control of corruption and its relationship with economic development and the ease of doing business is a complex topic that should be deeply analyzed in order to find the most appropriate mechanisms of controlling various forms of corruption so that business environment to be really stimulated. Second, our empirical evidence suggests that efforts to foster entrepreneurship within an economy will be more effective if accompanied by stable political environment and a government able to formulate and implement sound policies and regulations pro-business market in order to make it easier for new firms to enter the market, and to promote private sector development. Third, considering the influence of the legal system on ease of doing business, we suggest that each government should be aware about both, advantages and limitations that characterize its own type of legal system, looking for solutions in order to promote good legal rules that a country can implement in order to better stimulate business environment and economic development.

The final conclusion of this paper is that there are some dimensions of country-level governance that strongly influenced entrepreneurship and the ease of doing business. There are some limitations given by the fact that some empirical analyses could not be performed due to data unavailability for large samples of countries. For instance, we focus only on formal entrepreneurship, while the data necessary to measure the informal entrepreneurship is quite limited. Then, we consider entrepreneurship as the process of creation of new businesses, but it would be also quite relevant to investigate the success of these new businesses over time.

Additional research is required to further explore the influence of other macro-level determinant factors on business environment and entrepreneurship. The outline of potential solutions for improving the quality of business environment and entrepreneurship is beyond the scope of this paper, but there are some topics beyond the scope of this paper that may be investigated in future studies to contribute to further development of this research stream, especially if we consider the influence of governance dimensions on the ease of doing business and entrepreneurship. First, future research may analyze what mechanisms are necessary to be implemented in order to improve the quality of governance dimensions that significantly influence business environment and entrepreneurship. Second, it would be interesting to study the effects of other macro-level determinant factors on the ease of doing business and entrepreneurship. For instance, in previous academic literature it has been argued that factors such as culture, public institutions, level of technology and education levels are also significant factors for the level of entrepreneurship (Shane, 1996, Harper, 1998; Gentry and Hubbard, 2000; McMillan and Woodruff, 2002; Thai and Turkina, 2014).

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