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# Investor protection and country-level governance: cross-country empirical panel data evidence

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## ABSTRACT

Using a cross-sectional sample of yearly observations covering 132 countries over the 2007–2012 period, this article intends to provide empirical evidence that country-level governance has an impact on the strength of investor protection. Also, when proceeding to a multiple regression analysis based on income classification, as defined by the World Bank, one can observe a different behaviour of the relationship between country-level governance (proxied using the principal component analysis method) and the strength of investor protection.

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## 1. Introduction

There is wide consensus in the academic literature that quality of country-level governance is determinant for economic and social development (see, for instance, Busse & Gröning, 2009; Kray & Tawara, 2010). A recent finding by Çule and Fulton (2013) discloses that country-level governance exerts a significant impact on the business environment because an economy with a high concern for compliance with law, an adequate level of bureaucracy and efficient control of corruption is expected to provide the necessary framework for ensuring economic performance for the business environment. This idea of a strong relationship between various dimensions of country-level governance and economic growth and performance was also supported by other relevant studies (Acemoglu, Johnson, & Robinson, 2001; Knack & Keefer, 1997; Price, Román, & Rountree, 2011; Rodrik, Subramanian, & Trebbi, 2004).

Ensuring effective investor protection as a key driver of economic performance has become one of the major subjects of interest for academics from various economic areas. To our knowledge, there is a large amount of empirical studies showing different linkages between corporate governance mechanisms and investor protection, while too few studies address the impact of country-level governance on the strength of investor protection. In

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the vision of Matoussi and Jardak (2012), corporate governance along with mechanisms implemented for investor protection represent 'key drivers of market development'. On the contrary, there are some uncertainties about the mechanisms through which country-level governance has a real influence when it comes to ensuring legal investor protection (Hail & Leuz, 2006).

There are reasons to believe that country-level governance has an impact on the strength of investor protection; therefore, this study aims to contribute to the literature by presenting, discussing and analysing the potential impact that various dimensions of country-level governance could have on the strength of investor protection, based on data and variables computed within the reports issued by some worldwide recognised professional organisations such as the World Economic Forum, the World Bank and the International Finance Corporation.

The remainder of the article is organised as follows. Section 2 describes variables and data sources employed, also presenting the research methodology used. The empirical results are discussed in Section 3, while Section 4 concludes the article.

## 2. Data and research methodology

We present empirical results for the influence of country-level governance on investor protection using the strength of investor protection index, based on the methodology developed by Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) and updated by the World Bank. This indicator represents a ranking which incorporates three dimensions of investor protection: transparency of related-party transactions (extent of disclosure index), liability for self-dealing (extent of director liability index) and shareholders' ability to sue officers for improper behaviour (ease of shareholder suits index). The data referring to this variable – strength of investor protection – were obtained from the World Bank Doing Business database.<sup>1</sup> This is an index that ranges from 0 to 10, where the higher values correspond to a more effective investor protection. According to Haidar (2009), the Doing Business investor protection index represents one of the most objective measures of investor protection regulations and their enforcement carried out across more than 170 countries.

The next data-set used in our empirical survey was provided by the governance indicators developed by the World Bank (2012) – *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 organisations worldwide, this database being updated on an annual basis since 2002. The main objective of this report is to measure the quality of governance through six governance aggregate indicators – 1. Voice and Accountability (GOV\_VA); 2. Political Stability and Absence of Violence (GOV\_PS); 3. Government Effectiveness (GOV\_GE); 4. Regulatory Quality (GOV\_RQ); 5. Rule of Law (GOV\_RL) and 6. Control of Corruption (GOV\_CC) – while all six of these aggregated indicators are developed based on the methodology described in their previous companion paper 'Aggregating Governance Indicators' (Kaufmann, Kraay, & Zoido-Lobaton, 1999a, 1999b).

Considering the previous result of Haidar (2009), who states that countries with strong investor protection tend to grow faster than countries with poor investor protection, we consider it also quite relevant to investigate whether the relationship between country-level governance and the strength of investor protection is influenced by the income categories to which

the sampled countries belong. We also ran the panel Ordinary Least Squares (OLS) regression on these data including an income classification variable to determine whether high-income categories have a more significant impact on the strength of investor protection, using the low-income categories as reference. Thus, we used the World Bank classification of world economies on income groups [World Bank (2012) – *Country and lending groups*], according to which all economies with a population of more than 30,000 citizens are divided into income groups such as low income, lower middle income, upper middle income, high-income non-OECD and high-income OECD, having as the main criterion the gross national income per capita, in accordance with the World Bank Atlas methodology. This income group classification is set each year on 1 July because of the World Bank's fiscal year (which ends on 30 June).

A significant amount of relevant research investigating the issue of investor protection around the world was developed by some well-known researchers such as La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998, 1999, 2000, 2002). Their findings confirm that a major influence on investor protection is given by the legal regime or the legal system (including both laws and their effectiveness). One of their significant findings was that countries with common law origins have the advantage of more effective and protective regulatory framework than civil law countries. Later, the world-famous Enron scandal and other bankruptcies that followed have determined serious concerns about investor protection in the United States, one of the major countries from the common law category, which also raises serious uncertainties about the validity of La Porta et al.'s findings, as was noted by Matoussi and Jardak (2012). Looking for arguments to validate or to invalidate La Porta et al.'s previous findings, the results of the study developed by Matoussi and Jardak (2012) confirm that one relevant explanation for the diversity of investor protection around the world is strongly provided by a mix of legal, cultural and political factors. On the contrary, considering 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 development of the private sector by promoting and applying an effective regulatory framework, we decided to check the robustness of the model by introducing additional control variables that capture some of the most relevant dimensions of country-level governance. Therefore, in the second part of the empirical analysis we ran several models with control variables such as the following:

- Legal origin, as defined by Reynolds and Flores (1989) and La Porta et al. (1998, 1999). Thus, one identified five possible types for legal origin of the Company Law or Commercial Code of each country: English Common Law; French Commercial Code; German Commercial Code; Scandinavian Commercial Code; and Socialist/Communists laws.
- Judicial independence showing to what extent the judiciary in a country is independent from influences of the government's members, citizens or firms (where 1 = heavily influenced and 7 = entirely independent).
- Efficiency of legal framework in challenging regulations showing the effectiveness of the legal framework in a country from the perspective of private businesses in challenging the legality of government actions and/or regulations (where 1 = extremely inefficient while 7 = highly efficient).

The last two control variables (judicial independence and efficiency of legal framework in challenging regulations) were extracted from the *Global Competitiveness Report* issued by the

World Economic Forum (2012), this report being considered one of the most comprehensive assessment reports on global competitiveness, consisting of a range of relevant indicators that embeds significant information about the economic development and the necessary conditions for providing long-term prosperity. The analysis was based on data collected for all selected variables for approximately 132 countries during the period 2007–2012 (six years).

The research methodology consists of the following steps:

- Analyse the data using principal component analysis to determine the correlation between the country-level governance variables.
- Run panel OLS regression on the data, testing the relationship between the strength of investor protection, as the endogenous variable, and the six variables for country-level governance (it should be noted that due to the high correlation between the six governance variables, two synthetic variables were built based on the first two principal components). The use of principal component analysis is not necessarily the only method of dealing with multicollinearity/data reduction. However, for instance, a technique of simply averaging the six governance variables, as used in other studies, would imply that each of them would be equally weighted, despite the fact that some of them might carry little additional information when compared with the rest (because of the high correlation). Rewriting the initial variables as a linear combination of orthogonal vectors should eliminate the need for arbitrary equal weights as well as arbitrarily choosing the number of governance variables relevant. Normally, the number of factors selected is such that each of them explains at least the common variance divided by the number of initial variables (should have an eigenvalue of one).
- Choose the best model specification (fixed effects versus random effects versus between effects using the Hausman test).
- Run panel OLS including the income classification variable to determine whether high-income categories have a more pronounced impact on the strength of investor protection, using the low-income categories as reference.
- Finally, test the robustness of the model – run several models with control variables as proxies for main country-level governance dimensions.

As can be noted from the summary statistics presented in Table 1, all country-level governance variables vary both across countries as well as in time. The time variation is considerably less pronounced than the variation across countries, which is to be expected due to the larger cross-sectional dimension as opposed to the time dimension of the panel series that was employed.

### 3. Discussion of results

#### 3.1. Basic results

Unfortunately, the country-level governance variables cannot be simultaneously included in a panel model due to the high correlation between them.<sup>2</sup> A simple principal component analysis reported in Table 2 shows that over 85% of the variance is explained by the first dimension; in other words, the variables are highly correlated (one can note the eigenvalue of the first dimension is 5.11%, which is significantly higher than the contribution of the

**Table 1.** Summary statistics of the governance indicators.

Variable		Mean	Standard deviation	Minimum	Maximum
GOV_VA (Voice and Accountability)	Overall	0.0776	0.8992	-1.8600	1.7500
	Between		0.8987	-1.7417	1.6333
	Within		0.0776	-0.4924	0.5726
GOV_PS (Political Stability)	Overall	-0.0592	0.8994	-2.8100	1.5100
	Between		0.8865	-2.6317	1.4200
	Within		0.1673	-1.6109	0.5691
GOV_GE (Government Effectiveness)	Overall	0.1924	0.9290	-1.5900	2.4300
	Between		0.9283	-1.4733	2.2767
	Within		0.0822	-0.1459	0.5674
GOV_RQ (Regulatory Quality)	Overall	0.2496	0.8848	-2.1600	2.0000
	Between		0.8832	-2.0283	1.9133
	Within		0.0880	-0.1288	0.6513
GOV_RL (Rule of Law)	Overall	0.0903	0.9744	-1.8400	2.0000
	Between		0.9748	-1.7683	1.9400
	Within		0.0733	-0.1864	0.4103
GOV_CC (Control of Corruption)	Overall	0.0980	1.0064	-1.4600	2.5300
	Between		1.0045	-1.3267	2.4617
	Within		0.1013	-0.365	0.571

Source: Authors' calculation.

**Table 2.** Principal component analysis for country-level governance variables.

Component	Eigenvalue	Difference	Proportion	Cumulative			
Comp1	<b>5.1138</b>	4.7496	0.8523	<b>0.8523</b>			
Comp2	<b>0.3642</b>	0.0338	0.0607	0.9130			
Comp3	<b>0.3304</b>	0.2180	0.0551	0.9681			
Comp4	0.1124	0.0689	0.0187	0.9868			
Comp5	0.0435	0.0079	0.0073	0.9941			
Comp6	0.0356		0.0059	1.0000			
Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Unexplained
GOV_CC (Control of Corruption)	0.4238	-0.0940	-0.2532	-0.6134	-0.4760	0.3803	0.0000
GOV_RL (Rule of Law)	0.4318	-0.1140	-0.2014	-0.1241	-0.0154	-0.8628	0.0000
GOV_RQ (Regulatory Quality)	0.4206	-0.2299	-0.0943	0.7650	-0.3881	0.1598	0.0000
GOV_GE (Government Effectiveness)	0.4263	-0.2361	-0.2489	0.0024	0.7858	0.2883	0.0000
GOV_PS (Political Stability)	0.3671	0.9221	-0.0011	0.0957	0.0599	0.0474	0.0000
GOV_VA (Voice and Accountability)	0.3749	-0.1390	0.9080	-0.1183	0.0390	0.0104	0.0000

Source: Authors' calculation.

following components). Adding an additional 'PC2' is justified from the perspective of capturing the variance of a particular governance variable. Including a second component means that almost all of the common variance of variable 'political stability' is explained with little specific variance left.

Therefore, the six country-level governance variables were rewritten in their principal component form (which basically leads to creating two hybrid variables that capture the common variation of the six country-level governance variables, therefore eliminating the multicollinearity) and the endogenous variable (strength of investor protection) was regressed on the first two principal component scores. Running the regression on the first

**Table 3.** Principal component regression results for random effects, between effects and fixed effects specifications.

Component	Random effects			Between effects			Fixed effects		
	Coefficient	<i>z</i>	<i>P</i> > <i>z</i>	Coefficient	<i>t</i>	<i>P</i> > <i>t</i>	Coefficient	<i>t</i>	<i>P</i> > <i>t</i>
PC1	0.2442	5.5500	0.000	0.2589	5.36	0.000	0.1274	0.1084	0.240
PC2	-0.4174	-4.8200	0.000	-0.6784	-3.61	0.000	-0.2970	0.1073	0.006
Intercept	5.4129	49.6500	0.000	5.4117	49.69	0.000	5.4254	0.0153	0.000
<i>R</i> -squared		<b>0.2204</b>			<b>0.2267</b>			<b>0.2264</b>	

Source: Authors' calculation.

**Table 4.** Hausman test results.

Component	Coefficient			
	Fixed effects	Random effects	Difference	Standard error
PC1	0.12744	<b>0.24423</b>	-0.11679	0.09906
PC2	-0.29701	-0.41741	0.12040	0.06354
$\chi^2$	3.71			
Prob. > $\chi^2$	0.1568			

Source: Authors' calculation.

three scores resulting from the principal component analysis, which are also the most significant, shows that the coefficient for the third dimension is not statistically significant. Therefore, as presented in Table 3, we consider the regression only on the first two principal component variables.

The Hausman test (as presented in Table 4) indicates that the random effects regression gives more accurate results than the fixed effects specification. This was to be expected due to the nature of the data sample; that is, large cross-sectional dimension but quite low temporal dimension (six years of annual observations).

Therefore, the model chosen is a panel regression on the first two components of the six country-level governance variables, and includes country-specific random effects. The random effects regression model chosen implies that a difference of one unit for any given explanatory variable (for instance, a country-level governance variable or its PC1 proxy) for a particular unit (country) of the panel has the same response (causes the same amount of variation of the dependent [strength of investor protection] variable), described by the fixed effect 'within-group' regression coefficient, as would be the case if we change by one unit the mean value of the variable for the different countries of the panel. If such is the case, and estimates for between-effects (based on cross-sectional regression of the means of the dependent and explanatory variables) are not significantly different from within-effects (fixed effects) coefficients, following the Durbin-Wu-Hausman test, the random-effects model should be used because the values of the standard error of its coefficients are significantly lower than its fixed-effects specification, leading to higher *p* values of the coefficients. The random effects model can be regarded as a way of weighting coefficients from the fixed effects and between effects (seldom used in practice) specifications. For the purpose of the study, no specific assumption was made that correlation is present among the errors obtained for different members of the panel (components of the covariance matrix other than the principal diagonal are zero); the variance matrix used, however, is adjusting for the presence of heteroskedasticity (different variances of the errors obtained on the different units of the panel, commonly seen in practice).



**Table 5.** Multiple regression analysis by income category using the third income category as the basis level.

Strength of investor protection	Coefficient	Standard error	z	P > z	95% Confidence interval	
PC1	0.1412	0.0691	2.0400	0.0410	0.0057	0.2767
Income classification						
1 (low income)	<b>-0.6804</b>	0.3819	-1.7800	0.0750	-1.4289	0.0681
2 (low-middle income)	<b>-0.9004</b>	0.3311	-2.7200	0.0070	-1.5493	-0.2515
4 (high-income non-OECD)	-0.1226	0.4033	-0.3000	0.7610	-0.9131	0.6680
5 (high-income OECD)	-0.1812	0.4189	-0.4300	0.6650	-1.0023	0.6399
Constant	5.7880	0.2347	24.6600	0.0000	5.3281	6.2480
R-squared (overall)				<b>0.1856</b>		
$\sigma_u$				1.2797		
$\sigma_e$				0.4261		

Source: Authors' calculation.

Consequently, analysing the principal component regression results (as presented in Table 3) for the random effects specification indicated by the Hausman test, it can be noticed that the coefficients for the first two principal component variables are statistically significant. However, the *R*-squared value, which quantifies how well the model fits the data, is quite low. The conclusion that can be drawn from these results is that country-level governance does have an influence on the strength of investor protection. However, the global governance only explains a small part of the variation in the strength of investor protection variable.

The next step in our empirical analysis was to run a multiple regression analysis by income category;<sup>3</sup> one can note a different behaviour of the relationship between country-level governance (proxied by the scores derived from the principal component analysis) and the strength of investor protection.<sup>4</sup> The coefficients for the principal component proxies are not statistically significant for the first income category (low income) and the *R*-squared value is very low (18.56%), showing no relation between the investigated variables. Therefore, when running the panel regression including all income categories, the first will not be used as a reference for comparison. Instead, the third (upper middle income) category is used as a basis to determine the impact of income classification on the relation between country-level governance and the strength of investor protection.

The results reported in Table 5<sup>5</sup> show that compared with the basis level (countries from the upper middle income category) as the income classification category increases, the coefficient attached to that category does not become statistically significant (the determined *Z* value does not fall in the 95% confidence interval). However, the coefficients attached to the income categories 1 = 'low income' and 2 = 'lower middle income' are statistically significant. Thus, the first two income classifications have a significant negative impact on the relationship between the country-level governance and the strength of investor protection, compared with the other three income classification effects. It can be concluded that there is a difference between the impact of high-income classes (income classification = 3–5) on the relation between country-level governance and the strength of investor protection and the impact of lower income classes (income classification = 1 and 2).

Our results show that the relationship between governance and strength of investor protection is relevant particularly for high-income classes. This finding is well justified by



**Table 6.** Robustness check considering selected control variables.

Variable	Model 1			Model 2			Model 3			Model 4		
	Coefficient	z	P > z	Coefficient	z	P > z	Coefficient	z	P > z	Coefficient	z	P > z
PC1	0.141	2.040	0.041	0.163	2.440	0.015	0.173	2.390	0.017	0.153	2.160	0.031
Income classification												
1	-0.680	-1.780	0.075	-0.772	-2.200	0.028	-0.765	-2.180	0.029	-0.786	-2.240	0.025
2	-0.900	-2.720	0.007	-0.909	-2.970	0.003	-0.908	-2.980	0.003	-0.913	-3.010	0.003
4	-0.123	-0.300	0.761	-0.257	-0.680	0.497	-0.251	-0.660	0.508	-0.260	-0.690	0.489
5	-0.181	-0.430	0.665	0.012	0.030	0.975	0.014	0.040	0.972	0.020	0.050	0.959
Legal origin												
Jl				<b>-0.529</b>	-5.050	0.000	<b>-0.532</b>	-5.070	0.000	<b>-0.527</b>	-5.080	0.000
ELF_LF							-0.019	-0.330	0.744	0.028	0.510	0.613
_cons	5.788	24.660	0.000	7.010	21.770	0.000	7.092	17.470	0.000	6.905	18.030	0.000
R-squared		0.1856			<b>0.3182</b>			<b>0.3163</b>			<b>0.3212</b>	

Note: Jl = judicial independence, ELF\_LF = efficiency of legal framework in challenging regulations.  
 Source: Authors' calculation.

some features specific to countries included in higher income categories. The effectiveness of judiciary systems and the security of property rights were empirically proven as significant especially for countries from the highest income categories. In this vein, Gani and Duncan (2007) state that countries from high-income categories 'have a record of more effective governance' than countries from the lowest income categories. On the other hand, Bardhan (2002) notes that the performance of mechanisms for monitoring the effectiveness of public services is much weaker in low-income countries.

### **3.2. Robustness checks**

Next, for robustness purposes we ran several models (as disclosed in Table 6) using the selected control variables described earlier (legal origin, judicial independence, efficiency of legal framework in challenging regulations). Legal origin is the only control variable that seems to have a significant impact on the strength of investor protection, its attached coefficient being highly statistically significant. Furthermore, the *R*-squared value of the model shows a significant increase compared with its prior value (Model 2, *R*-squared = 31.82%; Model 3, *R*-squared = 31.63%; Model 4, *R*-squared = 32.12%). The coefficients for the principal component variables (for the governance variables) remain statistically significant and comparable in value and sign compared with the model which does not include legal origin.

The model seems to be robust. The coefficients for the principal component scores in the regression remain stable (comparable magnitude and same sign) after including several other control variables in the model. The legal origin variable seems to have an influence in explaining the variance in the strength of investor protection. When including this variable, we can notice that its coefficient is statistically significant and the *R*-squared value of the model is significantly improved when compared with the original model (the one containing only the governance scores derived from the principal component analysis as exogenous variables). The inclusion of the other control variables in the model (except for the legal origin) returns statistically insignificant coefficients, and a lower *R*-squared value than the model including legal origin. The results of our robustness check that reveal the influence of legal origin for strength of investor protection is according to previous findings in other studies. For instance, the relevance of type of legal origin and its enforcement was very well emphasised by Jensen and Meckling (1976) as founders of agency theory. They concluded that the rights of investors should be protected by the strength of regulatory framework. Even more, La Porta et al. (1998, 2000, 2002) show that the legal system represents a 'key mechanism' in providing protection of outside investors, while 'variations in law and its enforcement' should be seen as a potential explanation of why 'firms raise more funds in some countries than in others' La Porta et al. (2000, p. 4).

## **4. Conclusions**

This article reports novel preliminary results on the relationship between country-level governance and investor protection. The selected country-level governance variables cannot be simultaneously included in a panel model due to the high correlation between them, as demonstrated by a principal component analysis. Therefore, in order to eliminate the correlation between the governance variables, the predicted scores for the first two components

were employed as proxies for country-level governance, and used as independent variables in the panel regression. The results of the panel regression showed highly statistically significant coefficients for the first two principal components variables and an *R*-squared value of 0.22. This indicates that the country-level governance indeed has an impact on the strength of investor protection, but the model only manages to explain a part of the variance in the strength of investor protection (relatively low *R*-squared value). To test whether or not this impact is felt by countries from high-income categories, the income classification variable was introduced in the model, using the middle category as a basis for comparison. The results showed that there is a difference between the impact of high-income classes (income classification = 3–5) on the relation between country-level governance and the strength of investor protection and the impact of lower income classes (income classification = 1 and 2).

The final conclusion of this study is that quality of country-level governance is relevant in designing a proper framework in which the maximum strength of investor protection is provided, even if the significance of governance for investor protection is felt differently for countries from high-income classes compared with lowest income countries. While the relationship between strength of investor protection and country-level governance is clearly dependent on income, other factors alter the relationship, with legal origin playing an important role.

The outline of potential solutions for enhancing the strength of investor protection is beyond the scope of this article, but the value added of this study could be given by emphasising some topics that could be investigated in further studies. One thing is clear: both representatives of investors and the political environment should strongly collaborate in order to identify those adequate governance mechanisms which could contribute to enhancing strength of investor protection.

## Notes

1. Available online: [www.doingbusiness.org](http://www.doingbusiness.org) (Accessed on 5 February 2013).
2. Multicollinearity does not affect the properties of the OLS estimators. The estimators remain unbiased and efficient. However, in the presence of multicollinearity, OLS estimators are imprecisely estimated. If the goal is simply to predict *Y* from a set of *X* variables, multicollinearity is not a problem: the predictions will still be accurate and the overall *R*-squared value quantifies how well the model predicts the *Y* values. Nonetheless, if the goal is to understand how the various *X* variables impact *Y*, which is indeed the scope of this research, then multicollinearity is a problem.
3. According to the World Bank classification, economies are divided according to gross national income per capita using the World Bank Atlas Method, resulting in the following groups: low income (\$1025 or less) = 1; lower middle income (\$1026–4035) = 2; upper middle income (\$4036–12,475) = 3; high-income (\$12,476 or more) non-OECD members = 4; high-income OECD members = 5).
4. See Appendix 1.
5. The regression was run only with the first principal component score as an independent variable. The second score was eliminated due to a correlation with the income classification variable, in order to obtain a clearer image of the impact of the income classification.

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**Appendix 1****Table A1.** Multiple regression analysis by income category results.

Income category	1 (low income)			2 (lower middle income)			3 (upper middle income)			4 (high-income non-OECD members)			5 (high-income OECD members)		
	Coefficient	z	P >  z	Coefficient	z	P >  z	Coefficient	z	P >  z	Coefficient	z	P >  z	Coefficient	z	P >  z
PC1	-0.007	-0.070	0.943	0.144	2.220	0.027	0.224	2.480	0.013	0.116	2.430	0.015	-0.108	-2.480	0.013
PC2	0.115	0.590	0.557	-0.152	-1.240	0.214	-0.506	-2.860	0.004						
PC3	-0.489	-2.990	0.003	0.399	3.090	0.002	-0.491	-2.340	0.019						
PC4				0.312	2.240	0.025	0.582	2.500	0.012						
Legal origin	-0.060	-0.190	0.853	-0.598	-3.150	0.002	-0.508	-1.840	0.065	0.338	-1.380	0.168	-0.491	-2.750	0.060
Constant	4.925	6.830	0.000	5.993	13.370	0.000	6.836	10.420	0.000	0.716	9.540	0.000	7.416	13.370	0.000
R-squared		0.0391			0.3873			0.4018			0.3186			0.1455	

Note: Selected specification results for each income category.

Source: Authors' calculation.