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**Does good corporate governance supports economic development: the role of CG in increasing stock market value, fighting corruption and attracting FDI**

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**Abstract**

We examine the empirical relationship between the quality of corporate governance practices and economic development in an unbalanced panel of up to 185 countries covering 2010 through 2015. We find that corporate governance is a positive determinant of FDI inflow and market capitalization, and a negative determinant of public sector employment in low-income countries. Our results also suggest that corporate governance is negatively correlated with corruption in the high-income countries. Finally, we establish the unidirectional causality running from corporate governance to economic development, thus, no evidence of causal effect of economic development on corporate governance. Therefore, our results indicate in order to accelerate economic development in developing economies the policy makers should address in the first place the institutional transition of the countries including the implementation of best corporate governance practices.

**Keywords:** corporate governance, economic development, stock market capitalization, corruption, foreign direct investment, System GMM models

**JEL Classification:** E02, F21, F63, G15, G34, O16, O57

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## 1. Introduction

Corporate governance (CG) and its implementation should be supported by relevant government actions and policies. Corporate governance constitutes a set of mechanisms that outside (minority) investors use to protect themselves against expropriation by the managers and controlling shareholders including: (1) steal of profits; (2) the sell of the output or the assets of the company they control, but which minority investors have financed, to another company the managers and controlling shareholders own at below market prices; (3) installing low-qualified family members in managerial positions or overpaying executives (La Porta et al., 1999).

The improvement of CG regulations and laws is especially important for the poor economies, which lack the development of market institutes and face the so-called institutional gap<sup>1</sup>. Moreover, in less developed countries corporate governance practices are mostly nonexistent (Shleifer and Vishny, 1997).

Therefore, understanding corporate governance can stimulate major institutional changes in developing economies. In turn, the implementation of CG laws and regulations can be accelerated by the evidence that effective CG practices help to solve important economic problems, like attracting foreign direct investments, fighting corruption and increasing the market value of domestic firms.

The prior studies have revealed that there is a positive influence of the CG development on accelerating the economic development, however, mostly on economic performance of the firms. Implementation of the best CG practices helps to build more sustainable financial markets and helps companies to survive the global financial crises.

In particular, corporations with the independent boards and audit committees are more sustainable to the global financial breakdowns (Iwasaki, 2014). Effective corporate governance regulations and practices ensure good shareholders protection and accelerate the development of the local stock markets (Claessens, 2006). Improvements of the shareholders and creditors rights' execution increase the development of the national capital markets and help local companies to grow faster (Djankov et al., 2008; Gompers, Ishii and Metrick, 2003).

Furthermore, effective corporate governance can lead to lower corruption level (Wu, 2005). Better shareholders rights protection decreases the transaction costs of managing the foreign subsidiaries and, thus, accelerates the inflow of foreign direct investment (FDI) (Lskavyan and Spatareanu, 2011). Besides, the companies with stronger corporate governance are more attractive for foreign investors as far as they are more transparent and provide better protection of the shareholders rights (Leuz, Lins and Warnock, 2008).

However, from the other point of view, strong corporate governance reduces the FDI inflow if M&A<sup>2</sup> are used to entry the economy (Wang, Alba and Park, 2012). Transactions and financial costs

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<sup>1</sup> **Institutional gap** – the situation in the economy, when growth is constrained due to absence of appropriate institutional transition.

<sup>2</sup> Mergers and acquisitions.

of the CG at the company level can be too high decreasing the market value of the corporations (Bebchuk, Cohen and Wang, 2014). Moreover, the development of CG is visa-versa influenced by the inflow of FDI as far as foreign investors bring new CG standards and demand improvements of the regulations. Highly developed financial sector require sound CG system and effective internal and external audit in order to decrease investments risks which helps to attract more capital at lower costs. In turn, substantial level of corruption and inflated public sector block the development of the CG systems as far as they can make the access to state subsidies and preferences more complicated.

Therefore, in this paper we will investigate the role of corporate governance implementation on economic development at the macro level, particularly in supporting the economic transformation of the developing economies through improving the countries' competitiveness as the FDI recipients, reducing the corruption and accelerating the development of the financial markets. Besides, we will also study the possible influence of the corporate governance development on the speed of transition to the market economy through the influence of CG on public sector employment.

Next point in the research is to establish causation between CG implementation and economic development based on cross-country relationships, because there may be the issue of reverse causality. Perhaps, economic development causes improvements in corporate governance rather than the other way round.

The study uses data from 2010 to 2015 for up to 185 countries obtained from the World Bank, Transparency International and Freedom House databases. The main series include minority investors' protection as a measure of the quality of corporate governance; market capitalization of listed domestic companies; net inflows of foreign direct investment; public sector employment; corruption perception.

The research hypotheses are next:

- the minority investors' protection positively influences foreign direct investment;
- the minority investors' protection negatively influences public sector employment;
- the minority investors' protection positively influences the market capitalization of listed domestic companies;
- the minority investors' protection negatively influences corruption perception.

In the first step, the panel unit root test is used in order to investigate the stationarity of the series. Consequently, the System General Method of Moments (GMM) approach is applied to study long-run relationships between each pair of the series. Final step assumes examination of causality between the studied variables also based on the System GMM models.

The main results of the research are next: first, corporate governance positively influences FDI inflow and market capitalization of listed domestic companies in low-income countries; second, corporate governance decreases public sector employment in low-income countries; third, corporate governance negatively influences corruption perception in high-income countries; finally, we find

unidirectional causality running from corporate governance to FDI inflow, public sector employment, market capitalization and corruption and no evidence of causal relationships in opposite directions.

The paper proceeds as follows. Section 2 presents literature review. In Section 3 we describe the data. Section 4 describes our econometric approach. Section 5 contains our System GMM results for the studied relationships and causality tests. Section 6 concludes. The Appendix contains further information for data used in the research.

## **2. Literature review**

The previous studies confirm positive influence of the corporate governance development on accelerating the economic development, however, mostly on economic performance of the firms. Implementation of the best CG practices helps companies to survive the global financial crises, to attract investment and to fight corruption.

In particular, corporations with the independent boards and audit committees were more resistant to the 2008-2009 global financial breakdown (Iwasaki, 2014), indicating that the quality of the CG is significant for the companies' sustainability to the impact of financial crises. Moreover, this crisis stimulated further improvements of the CG as an attempt to protect companies from controlled shareholders and management expropriations in order to make companies more financially and economically stable.

The Iwasaki's (2014) study was concentrated on Russian companies as far as their national CG system was still underdeveloped and the improvements had to be more radical. In general, the post-crisis CG restructuring required more efficient and independent financial control system and more professional and independent board of directors. On the one hand, as a response to 2008-2009 financial crisis the surveyed companies have increased the number of outside directors, significantly reduced number of the workers' representatives in the supervisory boards. On the other hand, they decreased the number of the outside auditors and substituted them by the insiders represented by the companies' audit employees.

The similar studies were made for other developing and developed economies. For example, the 2008-2009 financial crisis has pushed Taiwan corporations to decrease the number of directors and supervisors controlled by largest shareholders, to enhance monitoring functions of the supervisory board and to improve the information transparency of the corporations (Chen and I-Ju, 2014).

The studies accomplished on the companies from emerging economies during 1997-1998 Asian financial crisis have showed that the effectiveness of CG system, first of all the protection of the minority shareholders, supports the sustainability of the national economy during the financial turbulence (Johnson et al., 2000). Contrary, the weak CG has allowed higher level of expropriation by the managers during financial crises. At the macroeconomic level it caused higher fall of stock market prices and depreciation of local currency.

The research made on the French corporations has showed that good remuneration policy, efficient audit process and better protection of the minority shareholders increases the investors' confidence about the sustainability of the targeted company, which allows corporations to survive the global financial breakdown (Ezzine and Olivero, 2013). Further, the study on the Spanish companies has revealed that the independence of the board and the size of the board have positive influence on the corporate market value during the global financial crises (Villanueva-Villar et al., 2016).

Therefore, all these has allowed to conclude that implementation of the best CG practices is beneficial both for the shareholders' wealth and for the overall sustainability of the financial markets. First, effective CG regulations and laws ensure good shareholders protection and, second, they accelerate the development of the local stock markets (Claessens, 2006). In particular, better protection of the shareholders' rights and creditors' rights execution is associated with higher size of the capital markets.

The explanation for the last statement is that better CG allows companies to attract more capital at lower cost helping companies to invest leading to a faster growth and increase in the corporate market value. According to study of Gompers, Ishii and Metrick (2003) companies with higher protection of the minorities shareholders rights have better performance, higher market value and better market-to-book value coefficient (Tobin's Q). Therefore, these indicate, first, that investors can earn more if they invest in the companies with higher minority investors' rights protection and, second, countries with better CG practices attract more investors to the stock market and offer more shares with higher market-to-book value ratio, which increases the total stock market capitalization.

In contrast, countries with weaker equity rights protection have by four times less developed stock markets (in terms of stock market capitalization to GDP), than countries with the best practices in this field. They often lack improvements of the shareholders and creditors rights. First of all, better protection of the minority investors' interests, which requires effective state regulation and prevention of self-dealing which is one of the central problems in so-called expropriation by the controlling shareholders or/and managers (Djankov et al, 2008).

Next, better shareholders rights protection decreases the transaction costs of managing the foreign subsidiaries and, thus, accelerates the FDI inflow (Lskavyan and Spatareanu, 2011). The evidence from the US companies shows, that they hold less shares in the foreign companies with poor CG and higher risks of expropriation by the local co-owners and managers. Moreover, poorly governed companies attract fewer foreign investments as far as they are valued less by investors, and the foreign companies are exposed to more transaction costs for managing and controlling the abroad subsidiary. Besides, the companies with stronger corporate governance are more attractive for foreign investors as far as they are more transparent and provide better protection of the shareholders rights (Leuz, Lins and Warnock, 2008). An important role in attracting FDI is played by the local legal system. The evidence from the UK abroad investments shows that weak legal system which does not provide enough possibilities to protect ownership rights decreases the

possibility of attracting FDI. In this case the foreign investors prefer to buy smaller stakes of the local companies which allow to decrease the risk of expropriation by the local shareholders or managers.

However, from the other point of view, strong corporate governance reduces the FDI inflow if M&A is used to entry the economy (Wang, Alba and Park, 2012). This relationship is based on the hypothesis that strong corporate governance maximizes the company's market value and leaves little space for increasing the wealth of the foreign shareholder who buys new shares. Moreover, strong corporate governance allows the minority owners to exercise effectively the shareholders' rights, which increases the transaction costs of managing the company for the majority foreign shareholder.

In turn, transactions and financial costs of the CG at the company level can be too high reducing the market value of the corporation (Bebchuk, Cohen and Wang, 2014). For example, some types of incentives offered to the executives, in particular "golden parachutes", decreases the shareholders' wealth. This is happened because "golden parachutes" can increase managerial slack and provoke acquisitions, which are not in the interests of the shareholders.

Moreover, the development of CG is visa-versa influenced by the inflow of FDI as far as foreign investors bring new CG standards and demand improvements of the regulations. Highly developed financial sector require sound CG system and effective internal and external audit in order to decrease investment risks, which helps to attract more capital at lower costs. Substantial level of corruption and inflated public sector block the development of the CG systems as far as it can makes the access to state subsidies and preferences more complicated (WB, 2014).

Therefore, in order to compete in world capital markets, a number of countries are handling with the introduction rules or formal laws for the enhancement of corporate governance. This is mainly caused by the growing understanding that that improper corporate governance mechanisms lead to growth in the cost of equity capital for emerging market corporations and, subsequently, they find it much more difficult to acquire equity investors (Klapper and Love, 2002; Dyck and Zingales, 2002).

Additionally, the research made on the data available for 14 emerging market shows that good CG practice at the company level insures higher market value of the corporations (Klapper and Love, 2002). This is especially true for the companies based in the economies with poor legal systems. Such corporations are considered as less risky and more attractive for the investments to the countries, which offer low shareholders' legal protection. Another study at the country level paid attention to the importance of protecting the minority interests from the point of view of economic development. The research made by (Dyck and Zingales, 2002) proves that in the countries with more concentrated ownership and more benefits of control for the big shareholders (expropriation effect) the privatization deals are made on the closed basis and capital markets are less developed.

Finally, effective CG practices may lead to lower corruption level (Wu, 2005). This is true both for the so-called demand and for supply sides of bribery. The higher CG standards applied by the companies increase the risks for the officials of asking for the bribes. On the other hand, the managers of the companies, which apply high anti-corruption standards, are less probable to play

the corruption "game". This insures less corporate exposure to the political and criminal risks and make it more attractive for the investments. The research provides evidence that the companies with stronger CG are less involved in bribery. In general, corporations, which adopt best anticorruption standards, have better financial performance and sustainability (Mercedes, 2016).

## 2. Data

The core data used in this study is the World Development Indicators (WDI) database published annually by the World Bank. The main independent variable is the "Minority investors' protection", which comes from the World Bank's Doing Business database and can be used to measure the overall development of the corporate governance at the country level.

The other key WDI variables are the following: foreign direct investment per capita, which will assess the influence of good CG on the national economy attractiveness for the foreign investors; employment at the public sector (% of total employment), which will measure the influence of the CG developments on market transformation of the country; market capitalization of listed domestic companies (% of GDP), which will measure the influence of good CG on increasing the market value of corporate sector.

Finally, for the corruption measure the Corruption Perceptions Index (CPI) by Transparency International is used. The CPI represents a composite indicator that evaluates the level of perception of public-sector corruption in 180 countries, based on various expert and business surveys. It grades countries using a scale from zero to 10, where higher score means lower corruption perception.

The intersection of minority investor protection and macroeconomic indicators leads to an unbalanced panel<sup>3</sup> of up to 185 countries over the period 2010 to 2015. The full description of the variables used in this study is shown in Table 1. The dimension of the panel data was taken in order to include as many countries as possible each with reasonable time length of observations. Further, the countries were classified using World Bank's approach as low-income (LIC) and high-income (HIC). The full list of countries and their country group based on income classification is presented in Table A1 of the Appendix A.

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<sup>3</sup> Some of the countries in the sample have different number of time series observations.

Table 1. Description of variables

Variable	Source	Description
GDP per capita ( <i>GDP</i> )	World Bank	GDP per capita (constant 2010 US\$)
Minority investors protection ( <i>MIP</i> )	World Bank	Overall distance to frontier (score, 0-100, the higher – the better)
Financial development ( <i>Financial development</i> )	World Bank	Domestic credit to private sector (% of GDP)
Population ( <i>Population</i> )	World Bank	Population, total number
Gross capital ( <i>Gross capital</i> )	World Bank	Gross capital formation (% of GDP)
Openness ( <i>Openness</i> )	World Bank	Trade – exports and imports (% of GDP)
Natural rent ( <i>Natural rent</i> )	World Bank	Total natural resources rents (% of GDP)
Inflation ( <i>Inflation</i> )	World Bank	Inflation, consumer prices (annual %)
FDI per capita ( <i>FDI</i> )	World Bank	FDI per capita (constant 2010 US\$)
Public sector employment ( <i>PUBLIC</i> )	World Bank	Share of employment in the public sector, %
Capitalization ( <i>CAP</i> )	World Bank	Market capitalization of listed domestic companies (% of GDP)
Government expenditures ( <i>Govexp</i> )	World Bank	General government final consumption expenditure per capita (constant 2010 US\$)
Corruption index ( <i>CORRUPTION</i> )	Transparency International	Corruption Perception Index (score, 0-10, the higher – the better)
Press freedom ( <i>Press freedom</i> )	Freedom House	The freedom of the press index ranks countries on a scale ranging from zero (best press freedom) to 100 (worst press freedom).

Descriptive statistics for the entire sample of countries are shown in Table 2. The summary statistics for individual samples of low-income and high-income countries are presented in Figure A1 and Tables A2 and A3 of the Appendix A.

Table 2. Descriptive statistics for entire sample of countries

Series	Obs.	Mean	Std. dev.	Min	Max
Minority investors protection	1097	60.16	12.69	26.40	91.24
FDI per capita	1041	1146.60	8819.97	-10335.36	253696.40
Public sector employment	285	20.54	11.40	1.8	78.5
Capitalization	414	71.24	132.02	0.01	1185.86
Corruption perception	1014	4.23	2.02	0.80	9.46
Openness	1051	93.60	55.83	0.18	455.42
Natural rent	1092	8.15	11.67	0.00	60.83
Inflation	1039	5.04	7.18	-8.12	109.68
Financial development	1033	54.74	45.27	0.002	253.57
GDP per capita	1098	12691.84	17973.04	206.71	107036
Population (in millions of people)	1106	38.14	140.69	0.02	1371.22
Government expenditures	355	2845.69	3792.86	28.59	19208.68
Press freedom	1050	48.65	22.77	9.00	95.00
Gross capital	1000	24.53	9.01	1.73	70.62



### 3. Methodology

#### 3.1. *Dynamic panel data analysis*

In panel country data settings the disturbances include unobservable, time-invariant, country effects, which may result in the correlation with the regressors. The dynamic panel analysis using the instrumental variables technique allows for such endogeneity of all explanatory variables with the country effects (Baltagi, 2008; Mundlak, 1978).

However, in the dynamic panel settings, the fixed effect, the random effects estimators and the Ordinary Least Squares (OLS) estimator are biased and inconsistent due to the presence of the lagged dependent variable among regressors, which is correlated with the error term. In this regard, Arellano and Bond (1991) have proposed a generalized method of moment (GMM) procedure to estimate the dynamic panel model using the lagged values of the dependent variable and the endogenous explanatory variables as instruments to address the endogeneity problem. Consequently, Arellano and Bover (1995) and Blundell and Bond (1998) have developed a unifying system GMM framework with more efficient IV estimators.

The system GMM estimator consists of the original equation in levels and the transformed equation in first differences. The lagged first differences of the regressors and the lagged levels of the regressors are added as instruments for the original and the transformed equation, respectively.

For the consistency of System GMM estimations two key assumptions are important:

1. There should be no serial correlation in the error term. Therefore, the Arellano-bond test for serial correlations AR(2) is used to check for the second-order correlation in differences to control first-order serial correlation in levels (Roodman, 2009).
2. The instruments should not be correlated with the error term. The Hansen *J* test (Hansen, 1982) for over-identifying restrictions is used in order to check the correctness of the instruments. It determines the correct specification, and reports the p-values for the null hypothesis of instrument validity.

Therefore, in this paper in order to evaluate the influence of minority investors protection (distance to frontier) as a proxy for quality of corporate governance in the countries the Arellano–Bover/Blundell–Bond two-step system GMM estimator is used to estimate Eqns. (1)-(4), employing the robust standard errors developed by Windmeijer (2005).

$$\ln FDI_{i,t} = \alpha_{10} + \sum_{j=1}^p \alpha_{11j} \ln FDI_{i,t-j} + \alpha_{12} \ln MIP_{i,t} + X'_{1i,t} \beta_1 + \mu_{1t} + \delta_{1i} + \varepsilon_{1i,t}, \quad (1)$$

$$PUBLIC_{i,t} = \alpha_{20} + \sum_{j=1}^p \alpha_{21j} PUBLIC_{i,t-j} + \alpha_{22} \ln MIP_{i,t} + X'_{2i,t} \beta_2 + \mu_{2t} + \delta_{2i} + \varepsilon_{2i,t}, \quad (2)$$

$$CAP_{i,t} = \alpha_{30} + \sum_{j=1}^p \alpha_{31j} CAP_{i,t-j} + \alpha_{32} \ln MIP_{i,t} + X'_{3i,t} \beta_3 + \mu_{3t} + \delta_{3i} + \varepsilon_{3i,t}, \quad (3)$$

$$\ln CORRUPTION_{i,t} = \alpha_{40} + \sum_{j=1}^p \alpha_{41j} \ln CORRUPTION_{i,t-j} + \alpha_{42} \ln MIP_{i,t} + X'_{4i,t} \beta_4 + \mu_{4t} + \delta_{4i} + \varepsilon_{4i,t}, \quad (4)$$

where  $\ln FDI_{i,t}$ ,  $PUBLIC_{i,t}$ ,  $CAP_{i,t}$  and  $CORRUPTION_{i,t}$  are respectively log of foreign direct investment inflow per capita, share of public sector employment, stock market capitalization of listed domestic companies, Corruption Perception Index for country  $i$  at period  $t$ ,  $\ln MIP_{i,t}$  is a log of minority investors protection for country  $i$  at period  $t$ ;  $X'_1$ ,  $X'_2$ ,  $X'_3$  and  $X'_4$  represent vectors of control variables for each of Eqns. (1)-(4). Additionally, country-specific fixed effects ( $\mu$ ) and time effects through period dummies ( $\delta$ ) capture common shocks to the values of dependent variables of all countries. The error terms ( $\varepsilon$ ) determine all other omitted factors, with  $E(\varepsilon_{it})=0$  for all  $i$  and  $t$ .

The main variable of interest is  $\ln MIP$  – the log of minority investors' protection, which is used, first, to capture the overall quality of corporate governance laws and regulations in particular country and, second, as it also represents the distance to frontier (that is to best practices in corporate governance) it may also take into account growth in the demand for better economic institutions in the country. Consequently, the parameters  $a_{12}$ ,  $a_{22}$ ,  $a_{32}$  and  $a_{42}$  measures the effect of quality of corporate governance on foreign direct investment, public sector employment, market capitalization and corruption.

The variable  $\ln FDI$  – the log of real foreign direct investment inflow per capita is used as a dependent variable in the Eqn. (1), because free movement of capital across national borders leads to an efficient allocation of resources that increases productivity and economic development across countries. Therefore, good corporate governance should accelerate the positive influence of FDI into the economies.

The dependent variable  $PUBLIC$  – public sector employment in Eqn. (2) serves as a proxy for the government size. Its higher value for particular country means higher levels of taxation, which may alter incentives to produce, work and invest (especially for low-income countries), because taxes decrease returns from private investment and productive effort, and, as a result, may lead to growth in the demand for leisure over work (Easterly and Rebelo, 1993). Consequently, negative influence of corporate governance may indicate a shift to economic reforms that induce transfer of employees to private sector.

The dependent variable  $CAPITALIZATION$  – *market capitalization* is considered as a measure of the ability of an economy through its stock markets to mobilize capital and diversify risk. Therefore,

positive impact of corporate governance on market capitalization of domestic companies may serve as a sign of a better redistribution of financial resources in the economy.

The dependent variable *CORRUPTION* – level of corruption perception in Eqn. (4) serves as proxy of main barrier for institutional development in the countries. Thus, the positive effect of corporate governance may serve as key sign for policy makers to accelerate the fight against corruption.

Regarding other controls to include in the vector of control regressors, GDP per capita is found to be one of the robust determinants of income levels in the countries and, thus, overall economic development. Moreover, rich countries are able to use more resources to fight and prevent corruption, in turn low-income countries are supposed to be more corrupt than high-income countries (Elbahnasawy and Revier, 2012). Therefore, the independent variable  $\ln GDP$  – log of real GDP per capita is included in all of Eqns. (1)-(4).

International trade is often considered as an important factor that causes economic development (Sachs and Warner, 1995; Frankel and Romer, 1999; Dollar and Kraay, 2002; Winters, 2004). It has several channels of influence on economic activity, from efficiency gains caused by greater competition and specialization to diffusion of ideas and knowledge (Sachs and Warner, 1995). As a result, it helps producers to use their production comparative advantages leading to a more efficient allocation of resources (De Haan et al., 2006). Therefore, *Openness* to international trade, measured by the share of exports and imports in GDP is included in Eqns. (1) and (3) assuming positive influence on FDI inflow and market capitalization.

In terms of monetary and inflationary policies and outcomes, it is supposed that higher levels of inflation negatively influences economic development (Briault, 1995; Barro, 1997; Bruno and Easterly, 1998). However, the effects of inflation depend on whether it is anticipated or unanticipated. Specifically, an unanticipated inflation is a result of unsound monetary policies, which discourage long-term investments as inflation may create uncertainty about future payoffs (Briault, 1995). Therefore, the independent variable *Inflation* is included in Eqns. (1), (3) and (4) and supposed to negatively influence foreign direct investment. However, in case of market capitalization and especially for low-income countries, where stock markets are supposed to be not fully efficient the influence of unanticipated inflation may be positive. Therefore, it is supposed to positively influence the market capitalization in low-income countries. Additionally, inflation may also be a robust predictor of corruption. A higher and more variable inflation increases complexity in monitoring government spending and public contracts, which may result in higher corruption (Braun and Di Tella, 2004). Therefore, countries with higher and more variable inflation are supposed to have greater corruption perception level.

According to Sachs and Warner (2001) the influence of natural resources on economic development is negative leading to so-called phenomena as "natural resource curse". Moreover, Mehlum et al., (2006) determine that in countries with low institutional quality, including high level of corruption, natural resources can decrease long-term growth and lengthen the transformation path to the market economy. However, in case of FDI inflow the resource abundance may be growth-enhancing

(Brunnschweiler and Bulte, 2008). Therefore, the independent variable *Natural rent* is added as a control variable into Eqns. (1), (2) and (4) and supposed to increase FDI inflow, public sector employment and level of corruption.

Improved *financial development* helps companies to access financial capital easily and less costly. In turn, it let companies to expand their production leading to increase in their market capitalization. Furthermore, *financial development* is important in order to sustain capital inflows to developing countries (Haque, Mathieson and Sharma, 1997), thus, it is added to Eqn. (3).

The explanatory variable *Population* is added as a control variable into Eqns. (2) and (4) as it is supposed that growth of the population leads to decrease in the public sector employment due to scope effect on the economy and increase in corruption level due to decrease in public spending per capita and, thus, incomes per capita.

The regressor *Gross capital* is included in Eqn. (1) in order to take into account complementarity between *FDI* and domestic investment (Borensztein et al., 1998). The independent variable *share of public expenditures* is added as a control variable into the Eqn. (3) in order to capture the necessity for higher level of taxation in the country and, as a result, larger government size; the positive sign for the corresponding coefficients are assumed.

One of the important determinants of corruption, that was found in previous studies, is *press freedom*. Better press freedom improves transparency and increases the risk of corruption activities, increasing the cost of corrupt behavior and, hence, lowers corruption (Freille, Haque, and Kneller, 2007). In this regard the explanatory variable  $\ln \text{Press\_freedom}$  – log of Freedom House's press freedom measure is added to Eqn. (4).

### 3.2. Causality tests

The increase in FDI inflow, market capitalization, decrease in corruption perception and public sector employment may also impede the introduction of better corporate governance laws and regulations. Therefore, the reverse causality is possible. To empirically investigate the causal relationship between each of the regressors of FDI, public sector employment, market capitalization, corruption perception and minority investors protection the paper uses panel Granger causality test which employs both of the cross-sectional and time-series data, and thus is more efficient than only using the time-series data (Dumitrescu and Hurlin, 2012). The following autoregressive models are assessed for each of four possible combinations of variables.

$$y_{i,t} = \lambda_0 + \sum_{j=1}^p \lambda_{1j} y_{i,t-j} + \sum_{j=1}^p \lambda_{2j} \ln MIP_{i,t-j} + \gamma_{1t} + \eta_{1i} + u_{i,t}, \quad (5)$$

$$\ln MIP_{i,t} = \psi_0 + \sum_{j=1}^p \psi_{1j} y_{i,t-j} + \sum_{j=1}^p \psi_{2j} \ln MIP_{i,t-j} + \gamma_{2t} + \eta_{2i} + v_{i,t}, \quad (6)$$

where  $y_{i,t}$  is the log of FDI inflow per capita, employment at the public sector, market capitalization of listed domestic companies or log of corruption perception index of country  $i$  in period  $t$ ;  $\ln MIP_{i,t}$

– the lagged value of log minority investors protection indicator. Additionally, country-specific fixed effects  $(\gamma_{1i}, \gamma_{2i})$  and time effects through period dummies  $(\eta_{1t}, \eta_{2t})$  capture common shocks to the values of dependent variables of all countries. and  $u_{it}, v_{it}$  represent error terms, capturing all other omitted factors, and assumed to be distributed normally and independently with  $u_{it} \sim (0, \sigma_u^2)$  and  $v_{it} \sim (0, \sigma_v^2)$ .

In order to be consistent with previous section of the research the System GMM estimator is also used for Eqns. (5) and (6). The Granger-causality effect can be determined using the significance tests of the coefficients of the lagged independent variable equal to zero. If the null hypothesis of no causality is rejected, then it can be concluded that *minority investors protection* Granger-caused *foreign direct investment, corruption perception, employment at the public sector* or *market capitalization* of listed domestic companies in case of corresponding specifications of Eqn. (5) and vice versa in case of Eqn. (6). For these, the Granger causality test (Wald test) is used for all specifications.

Before proceeding to causality testing, Holtz-Eakin, Newey, and Rosen (1988) suggest testing for the appropriate lag length, in order not to obtain misleading results on causality. To choose the optimal lag length the Akaike Information Criterion (AIC) is used for the estimated Eqns. (5) and (6) with OLS. However, the problem is the limited number of time periods in the data which constraints the number of lagged terms that can be considered in order to retain sufficient degrees of freedom. In this regard, we will only include lag-lengths of up to two for the dependent and independent variables.

## 5. Empirical results

### 5.1. System GMM results

In order not to obtain a spurious regressions it is needed to determine whether series used in the research are better modelled as stationary or as unit root processes. However, testing for unit roots using conventional panel unit root tests is problematic. One group of such tests statistics have a limiting normal null distribution, because  $N, T \rightarrow \infty$  with  $T$  approaching  $\infty$  substantially faster than  $N$ . Second group assume fixed  $N$ , but still demanding  $T \rightarrow \infty$ . Finally, the third smallest group of panel unit root tests consisting of IPS (Im, Pesaran and Shin, 2003) unit root test and Maddala and Wu (1999) panel unit root test allow for fixed  $T$  with  $N \rightarrow \infty$ .

However, for unbalanced panels with small  $T$  the IPS test often show poor size control and low power. Consequently, this test is not appropriate for data in this research. Therefore, to define the stationarity of the series the Maddala and Wu panel unit root test is used to determine any sign of a unit root processes in the underlying series (see Table 3).

Table 3. Results of Maddala and Wu panel unit root test

Series	At level		
	intercept	intercept and trend	None
<i>lnMIP</i>	622.127 <sup>***</sup>	517.010 <sup>**</sup>	435.023 <sup>*</sup>
<i>lnFDI</i>	821.456 <sup>***</sup>	1322.489 <sup>***</sup>	1115.462 <sup>***</sup>
<i>Capitalization</i>	364.301 <sup>***</sup>	452.303 <sup>***</sup>	550.712 <sup>***</sup>
<i>lnCorruption</i>	781.770 <sup>***</sup>	934.149 <sup>***</sup>	501.142 <sup>***</sup>
<i>Public</i>	152.084 <sup>***</sup>	181.510 <sup>***</sup>	133.006 <sup>*</sup>
<i>Financial development</i>	617.853 <sup>***</sup>	773.561 <sup>***</sup>	711.611 <sup>***</sup>
<i>lnPress_freedom</i>	655.880 <sup>***</sup>	799.698 <sup>***</sup>	467.892 <sup>***</sup>
<i>lnPopulation</i>	1384.996 <sup>***</sup>	2837.187 <sup>***</sup>	2969.464 <sup>***</sup>
<i>lnGDP</i>	770.960 <sup>***</sup>	923.179 <sup>***</sup>	1134.032 <sup>***</sup>
<i>Gross capital</i>	824.110 <sup>***</sup>	954.817 <sup>***</sup>	1049.971 <sup>***</sup>
<i>Inflation</i>	681.011 <sup>***</sup>	1831.713 <sup>***</sup>	403.858 <sup>**</sup>
<i>Openness</i>	764.987 <sup>***</sup>	1477.920 <sup>***</sup>	953.805 <sup>***</sup>
<i>Natural rent</i>	564.187 <sup>***</sup>	977.451 <sup>***</sup>	348.887
<i>lnGovexp</i>	205.013 <sup>***</sup>	223.430 <sup>***</sup>	115.412

Note: \*\*\* – significance at 1% level, \*\* – significance at 5% level, \* – significance at 10% level.

System GMM panel estimation results for *FDI*, *public employment*, *market capitalization* and *corruption perception* are shown in Tables 4-7. Each specification including entire sample of countries, low-income and high-income countries consists of a lagged values of the corresponding dependent variables and current period CG measure as well as other relevant control variables. In all specifications, the optimal lag length of dependent variable is selected until no serial correlation in residuals is obtained (Arellano, 2003). Consequently, to determine the optimal lag, the AR(2) statistic is used.

For the first model (see Eqn. 1) lagged *FDI* is significant, positive and highly persistent for each specification (see Table 4). It indicates that foreign direct investment in a certain year is strongly influenced by its previous value. While *MIP* is significant for entire sample of countries and low-income countries, it is not statistically significant for specification with high-income countries. This implies that quality of corporate governance is only determinant of foreign direct investment inflow in the low-income countries, such that a 1% increase in minority investors' protection increases FDI per capita by 1.3%.

The above results are consistent with findings obtained by Gordon, Loeb and Zhu (2012), who showed that after the regulatory enforcement (the adoption of IFRS<sup>4</sup>) FDI increases in developing rather in developed countries. Moreover, FDI is typically active investment that provide the investor a substantial degree of influence, information, and control over the operation of the firm into which the investment is made; and better suited to developing economies with higher growth expectations and low regulation.

<sup>4</sup> IFRS – International Financial Reporting Standards

Table 4. Corporate governance and foreign direct investment

Variable	Foreign direct investment ( $\ln FDI$ )		
	Entire sample	LIC	HIC
$\ln FDI_{t-1}$	0.405 <sup>***</sup> (0.143)	0.519 <sup>***</sup> (0.152)	0.431 <sup>***</sup> (0.132)
$\ln MIP$	1.437 <sup>**</sup> (0.733)	1.307 <sup>*</sup> (0.749)	-1.596 (1.551)
$\ln GDP$	0.293 <sup>**</sup> (0.139)	0.337 <sup>**</sup> (0.144)	0.751 <sup>**</sup> (0.369)
<i>Openness</i>	0.006 <sup>***</sup> (0.002)	0.006 <sup>***</sup> (0.002)	0.004 <sup>**</sup> (0.002)
<i>Natural rent</i>	0.009 (0.006)	0.016 <sup>*</sup> (0.008)	-0.008 (0.008)
<i>Gross capital</i>	0.016 <sup>*</sup> (0.009)	0.001 (0.013)	0.035 <sup>**</sup> (0.017)
<i>Inflation</i>	-0.027 <sup>***</sup> (0.009)	-0.018 <sup>*</sup> (0.011)	0.015 (0.076)
Observations	700	493	207
Countries	156	109	52
Instruments	79	46	38
<i>Specifications tests (p-values)</i>			
AR(2) test	[0.114]	[0.184]	[0.371]
Hansen J test	[0.280]	[0.275]	[0.372]

*Note:* Estimation is from the an unbalanced panel of 160 countries covering the period 2010-2015. All models include a constant, fixed effects and time (period) effects. Robust standard errors are shown in parentheses of estimated coefficients. Time dummies are not reported in the table and used in the regressions in order to eliminate cross-sectional dependence. AR(2) is a test for autocorrelation in differences. Hansen J test is a test for over identification restrictions. P-values for these tests are shown in in square parentheses. \*\*\* – significance at 1% level, \*\* – significance at 5% level, \* – significance at 10% level. ln – denotes logarithm of the underlying variable.

Concerning results for other control variables in Eqn. (1) the *GDP* and *openness* to international trade have a statistically significant positive impact on *FDI* in all three cases, such that a 1% increase in GDP per capita increases FDI per capita by 0.29% for the entire sample of countries, by 0.34% for low-income countries and by 0.75% high-income countries. In case of *openness* to international trade a 1 percentage point increase in total trade to GDP increases FDI per capita by 0.6% for entire sample and low-income countries, and by 0.4% for high-income countries.

Finally, *natural rent* has a significant positive influence on *FDI* only for low-income countries indicating that international investors are greatly concerned about high-profit investment projects, which mostly linked to natural resource extraction in low-income countries. In turn, the *gross capital* has significant positive impact on *FDI* for the entire sample of countries and for high-income countries. Finally, *inflation* decreases *FDI* in the entire sample and in case of low-income countries, but does not have statistically significant effect on high-income countries.

For the second model (see Eqn. 2) lagged *public employment* is significant, positive and highly persistent for specification with all countries and low-income countries, however in case of high-income countries the coefficient is insignificant (see Table 5). The influence of *minority investors' protection* is significant only for low-income countries, such that 10% increase in the quality of corporate governance decreases employment in the public sector by 1.1 percentage points. This implies, first, that quality of corporate governance and ownership structure are already developed and stable in high-income countries; second, improvement in corporate governance institutions in

low-income countries stimulates privatization and leads to transfer of employees from public to private sector contributing to its development.

Table 5. Corporate governance and public sector employment

Variable	Public sector employment ( <i>Public</i> )		
	Entire sample	LIC	HIC
$Public_{t-1}$	0.435** (0.211)	0.691*** (0.084)	-0.014 (0.379)
$\ln MIP$	-4.15 (0.549)	-10.972* (6.362)	13.857 (17.294)
$\ln GDP$	-7.253** (2.893)	-2.842** (1.237)	-18.788* (9.763)
$\ln Population$	-1.758*** (0.611)	-1.058*** (0.364)	-4.007* (2.091)
<i>Natural rent</i>	0.153* (0.091)	0.145** (0.073)	0.160 (0.179)
$\ln Govexp$	7.667*** (2.777)	2.071* (1.059)	18.093** (8.228)
Observations	192	108	84
Countries	56	34	23
Instruments	32	33	22
<i>Specifications tests (p-values)</i>			
AR(2) test	[0.364]	[0.277]	[0.978]
Hansen J test	[0.224]	[0.311]	[0.170]

*Note:* Estimation is from the an unbalanced panel of 56 countries covering the period 2010-2015. All models include a constant, fixed effects and time (period) effects. Robust standard errors are shown in parentheses of estimated coefficients. Time dummies are not reported in the table and used in the regressions in order to eliminate cross-sectional dependence. AR(2) is a test for autocorrelation in differences. Hansen J test is a test for over identification restrictions. P-values for these tests are shown in in square parentheses. \*\*\* – significance at 1% level, \*\* – significance at 5% level, \* – significance at 10% level. ln – denotes logarithm of the underlying variable.

Concerning the other control variables it should be mentioned that for all three specifications growth in GDP per capita and in population leads to statistically significant negative impact on public sector employment. In contrast, the higher share of natural resource extraction to GDP (*natural rent*) has a statistically significant positive influence on public employment for low-income countries, while no statistically significant effect on high-income countries. This once again indicates that industries connected to natural resource extraction play a substantial role in economies of developing countries, thus, increasing the government participation in their operations.

Finally, growth in *public expenditures* leads to a significant positive effect on *public employment* in all three cases, such that 10% increase in public expenditures per capita increases share of public sector employment by 0.76 percentage points for entire sample of countries, by 0.21 percentage points for low-income countries and by 1.8 percentage points for high-income countries.

For the third model (see Eqn. 3) lagged *market capitalization* of listed domestic companies is significant, positive and highly persistent for each specification (see Table 6). It indicates that *market capitalization* in a certain year is strongly influenced by its previous value. The influence of *minority investors' protection* on *market capitalization* is significant only for low-income countries, such that 1% increase in quality of corporate governance increase market capitalization of listed domestic companies by 0.45 percentage points in low-income countries. This supposedly indicates the higher the quality of corporate governance institutions the better and transparent the management of



companies in developing economies, which leads to higher investment activity with the shares of listed companies at the stock markets.

Table 6. Corporate governance and market capitalization

Variable	Market capitalization ( <i>Capitalization</i> )		
	Entire sample	LIC	HIC
<i>Capitalization</i> <sub>t-1</sub>	0.707*** (0.052)	0.768*** (0.082)	.93417*** (0.026)
<i>Capitalization</i> <sub>t-2</sub>	0.297*** (0.046)		
lnMIP	15.326 (21.458)	44.852** (18.465)	87.484 (102.271)
lnGDP	0.428 (1.730)	-3.452 (2.235)	-2.567 (10.433)
<i>Financial development</i>	0.0476* (0.026)	0.157** (0.064)	0.027 (0.037)
<i>Inflation</i>	0.608** (0.276)	0.687** (0.320)	-0.115 (0.959)
<i>Openness</i>	-0.013 (0.022)	-0.025 (0.053)	0.007 (0.037)
Observations	208	146	146
Countries	66	50	33
Instruments	20	33	26
<i>Specifications tests (p-values)</i>			
AR(2) test	[0.258]	[0.197]	[0.514]
Hansen <i>J</i> test	[0.618]	[0.553]	[0.980]

*Note:* Estimation is from the an unbalanced panel of 66 countries covering the period 2010-2015. All models include a constant, fixed effects and time (period) effects. Robust standard errors are shown in parentheses of estimated coefficients. Time dummies are not reported in the table and used in the regressions in order to eliminate cross-sectional dependence. AR(2) is a test for autocorrelation in differences. Hansen *J* test is a test for over identification restrictions. P-values for these tests are shown in in square parentheses. \*\*\* – significance at 1% level, \*\* – significance at 5% level, \* – significance at 10% level. ln – denotes logarithm of the underlying variable.

For all three specifications, the influence of growth in *GDP* per capita and *openness* to international trade on *market capitalization* of listed domestic companies is statistically insignificant. Finally, *financial development* and *inflation* have significant positive effect on *market capitalization* in entire sample of countries and specification for low-income countries.

For the fourth model (see Eqn. 4) lagged *corruption perception* is significant, positive and highly persistent for all three specification (see Table 7). The influence of *minority investors' protection* is significant only for high-income countries, such that a 1% increase in quality of corporate governance decreases corruption (corruption perception) by 0.64%. This implies, first, that higher quality of corporate governance and, thus, better economic institutions in developed economies prevent at some degree corruption activities; second, the insignificant effect for low-income countries indicates that the companies start to implement the anticorruption standards after they rich certain market value. At this stage risk of been punished by the state authorities for the bribery become much more harmful for the company's market value and shareholders welfare than benefits from paying bribes ( Eggertsson, 1990; Rosenberg and Birdzell, 1986).

Table 7. Corporate governance and corruption perception

Variable	Corruption perception ( $\ln Corruption$ )		
	Entire sample	LIC	HIC
$\ln Corruption_{t-1}$	0.393** (0.155)	0.425*** (0.157)	0.164** (0.081)
$\ln Corruption_{t-2}$			0.157** (0.063)
$\ln MIP$	-0.006 (0.136)	0.171 (0.173)	0.637** (0.255)
$\ln GDP$	0.060** (0.030)	0.005 (0.045)	0.142* (0.071)
$\ln Population$	-0.014* (0.007)	-0.019 (0.016)	-0.010 (0.015)
<i>Natural rent</i>	-0.003* (0.001)	-0.004* (0.002)	0.0002 (0.002)
$\ln Press\_freedom$	-0.188*** (0.067)	-0.143** (0.067)	-0.120* (0.068)
<i>Inflation</i>	-0.003** (0.002)	-0.001 (0.001)	0.007 (0.010)
Observations	785	543	196
Countries	168	120	51
Instruments	34	46	47
<i>Specifications tests (p-values)</i>			
AR(2) test	[0.812]	[0.569]	[0.989]
Hansen J test	[0.561]	[0.194]	[0.382]

*Note:* Estimation is from the an unbalanced panel of 168 countries covering the period 2010-2015. All models include a constant, fixed effects and time (period) effects. Robust standard errors are shown in parentheses of estimated coefficients. Time dummies are not reported in the table and used in the regressions in order to eliminate cross-sectional dependence. AR(2) is a test for autocorrelation in differences. Hansen J test is a test for over identification restrictions. P-values for these tests are shown in in square parentheses. \*\*\* – significance at 1% level, \*\* – significance at 5% level, \* – significance at 10% level. ln – denotes logarithm of the underlying variable.

The influence of *GDP* is significant only for all countries sample and high-income countries. For all three specifications decrease in *press freedom* increases *corruption perception*, such that 1% decrease in press freedom increases corruption by 0.19% for entire sample of countries, by 0.14% for low-income countries and by 0.12% for low-income countries. *Natural rent* has a significant positive influence on *corruption perception* for low-income countries. Finally, the influence of *inflation* and growth of *population* on *corruption perception* is significant only for entire sample of countries.

### 5.2 Causality test results

Table 8 presents the estimates for Eqns. (5) and (6). The AR(2) tests indicate that no serial correlation is found in the error term of each specifications of Eqns. (5) and (6). Moreover, the results of Hansen J test confirm the validity of instruments also for each of causality relationships.

Table 8. Results of panel Granger causality tests

Direction of causality	Lags	Wald tests	Obs	Countries	Instruments	AR(2) test	Hansen <i>J</i> test
$\ln MIP \rightarrow \ln FDI$	[1/2]	$X^2(1)=3.77^*$	605	164	24	0.217	0.486
$\ln FDI \rightarrow \ln MIP$	[1/1]	$X^2(1)=0.22$	814	176	21	0.499	0.174
$\ln MIP \rightarrow CAP$	[2/2]	$X^2(1)=3.06^*$	222	69	28	0.519	0.166
$CAP \rightarrow \ln MIP$	[1/1]	$X^2(1)=1.13$	353	89	27	0.729	0.586
$\ln MIP \rightarrow PUBLIC$	[1/2]	$X^2(1)=10.28^{***}$	139	55	28	0.329	0.166
$PUBLIC \rightarrow \ln MIP$	[1/1]	$X^2(1)=0.22$	243	64	27	0.603	0.215
$\ln MIP \rightarrow$ $CORRUPTION$	[1/1]	$X^2(1)=7.30^{***}$	823	174	23	0.841	0.175
$CORRUPTION \rightarrow$ $\ln MIP$	[1/1]	$X^2(1)=0.76$	837	174	15	0.644	0.231

Note: AR(2) is a test for autocorrelation in differences. Hansen *J* test is a test for over identification restrictions. P-values for these tests are shown in in square parentheses. \*\*\* – significance at 1% level, \*\* – significance at 5% level, \* – significance at 10% level. ln – denotes logarithm of the underlying variable.

The results indicate that *minority investors' protection* causes *foreign direct investment* and *market capitalization* at 10% significance level, causes public employment and *corruption perception* at 1% level, that is past information on *minority investors protection* help improve their prediction. However, the opposite does not hold indicating the presence of only unidirectional causality between studied variables.

Therefore, our findings suggest that better corporate governance in the countries has led to better economic development including larger FDI inflow and stock market capitalization of listed domestic companies, and smaller the public sector in the economy and corruption perception in the country.

## 6. Conclusion

This paper using cross-country data empirically investigates the existence of relationship between implementation of corporate governance practices and economic development including such variables as FDI inflow, public sector employment, market capitalization and corruption perception. While previous studies have examined some of these relationships, most of them are concentrated on firm level. Moreover, none of these studies have examined the causal relationship between corporate governance and economic development.

We use data for up to 185 countries over the period ranging from 2010 to 2015 and study, first, relationships between corporate governance and FDI inflow, corporate governance and public sector employment, corporate governance and market capitalization, and corporate governance and corruption; and, second, we perform the causality tests between the above pairs of variables.

In this regard, we use dynamic panel data estimation models that allow us to control for country-specific effects and address the issue of endogeneity of variables. Further, we split countries into low and high-income to assess whether income differences across countries matter for the studied relationships.

Our results indicate that estimating relationships based on differences in incomes across countries provide important details on the relationship between each pairs of studied variables not found elsewhere in the literature. When using data for the entire sample of countries we find positive influence of corporate governance on FDI inflow only. When our sample is limited to low-income countries we find positive influence of corporate governance on FDI inflow and market capitalization, and negative influence on public sector employment. For high-income countries, we determine the negative influence of corporate governance on corruption perception.

Therefore, for the developing economies the above results suggest that in order to accelerate economic development the policy makers should address in the first place the reduction of the institutional gap in the country. One of the approaches in this path can be the implementation of best corporate governance practices. As a result, this will increase FDI inflow, lead to higher stock market capitalization and shorten the transfer to market economy through increasing the share of the private sector in the economy. Finally, taking into account that lower corruption is associated with higher economic development and, in turn, the corporate governance decreases corruption (on the example of high-income countries) this will also help to accelerate economic development after reaching the group of developed economies.

Finally, using data for entire sample of countries we find evidence of causal relationships running from corporate governance to FDI inflow, public sector employment, market capitalization and corruption and no evidence of causal relationships in opposite directions. These results indicate that stronger regulatory enforcement (in case of corporate governance) helps to predict higher economic development of the countries. Moreover, the institutional building should go in the first place without replacement for post implementation, since no evidence of bidirectional causality is found.

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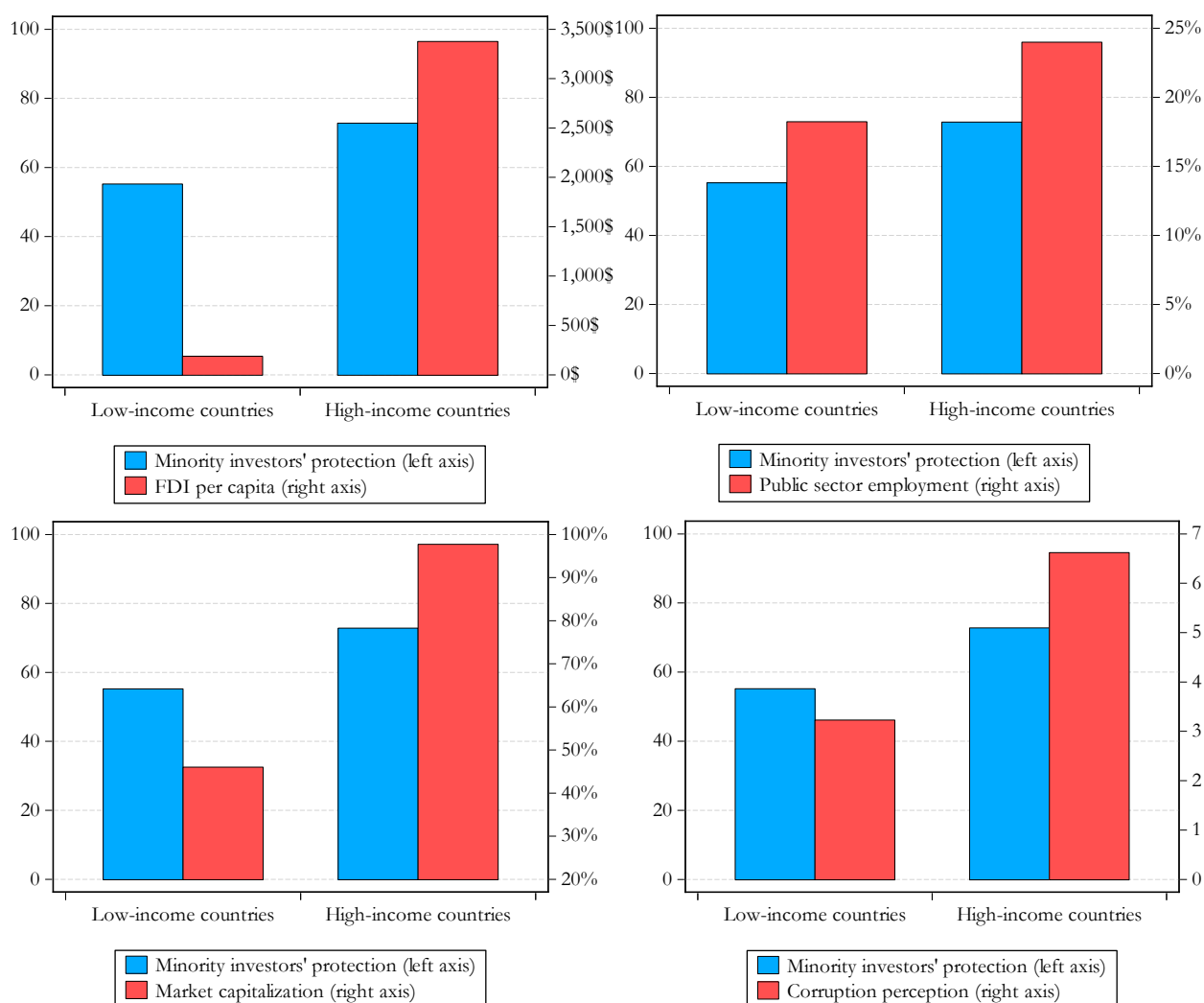
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## Appendix A

Table A1. High versus low-income countries

<i>Low-income countries</i>			
Afghanistan	Dominican Republic	Libya	Sao Tome and Principe
Albania	Ecuador	Macedonia	Senegal
Algeria	Egypt, Arab Rep.	Madagascar	Serbia
Angola	El Salvador	Malawi	Sierra Leone
Argentina	Equatorial Guinea	Malaysia	Solomon Islands
Armenia	Eritrea	Maldives	South Africa
Azerbaijan	Ethiopia	Mali	South Sudan
Bangladesh	Fiji	Marshall Islands	Sri Lanka
Belarus	Gabon	Mauritania	St. Lucia
Belize	Gambia	Mauritius	St. Vincent and the Grenadines
Benin	Georgia	Mexico	Grenadines
Bhutan	Ghana	Micronesia	Sudan
Bolivia	Grenada	Moldova	Suriname
Bosnia and Herzegovina	Guatemala	Mongolia	Swaziland
Botswana	Guinea	Montenegro	Tajikistan
Brazil	Guinea-Bissau	Morocco	Tanzania
Bulgaria	Guyana	Mozambique	Thailand
Burkina Faso	Haiti	Myanmar	Timor-Leste
Burundi	Honduras	Namibia	Togo
Cabo Verde	India	Nepal	Tonga
Cambodia	Indonesia	Nicaragua	Tunisia
Cameroon	Iran	Niger	Turkey
Central African Republic	Iraq	Nigeria	Uganda
Chad	Jamaica	Pakistan	Ukraine
China	Jordan	Palau	Uzbekistan
Colombia	Kazakhstan	Panama	Vanuatu
Comoros	Kenya	Papua New Guinea	Venezuela
Congo, Dem. Rep.	Kiribati	Paraguay	Vietnam
Congo, Rep.	Kosovo	Peru	West Bank and Gaza
Costa Rica	Kyrgyz Republic	Philippines	Yemen
Cote d'Ivoire	Lao PDR	Romania	Zambia
Djibouti	Lebanon	Russian Federation	Zimbabwe
Dominica	Lesotho	Rwanda	
	Liberia	Samoa	
<i>High-income countries</i>			
Antigua and Barbuda	Estonia	Latvia	Slovak Republic
Australia	Finland	Lithuania	Slovenia
Austria	France	Luxembourg	Spain
Bahamas	Germany	Malta	St. Kitts and Nevis
Bahrain	Greece	Netherlands	Sweden
Barbados	Hong Kong	New Zealand	Switzerland
Belgium	Hungary	Norway	Trinidad and Tobago
Brunei Darussalam	Iceland	Oman	United Arab Emirates
Canada	Ireland	Poland	United Kingdom
Chile	Israel	Portugal	United States
Croatia	Italy	Qatar	Uruguay
Cyprus	Japan	Saudi Arabia	
Czech Republic	South Korea	Seychelles	
Denmark	Kuwait	Singapore	





**Figure A1.** Average values of main studied variables for the period 2010-2015

**Table A2.** Descriptive statistics for low-income countries

Series	Obs.	Mean	Std. dev.	Min	Max
Minority investors' protection	788	55.20	10.40	26.40	82.09
FDI per capita	728	187.73	380.08	-478.06	6321.59
Public employment	171	18.23	12.07	1.8	78.5
Capitalization	212	46.01	45.82	0.01	266.93
Corruption perception	714	3.23	1.10	0.80	7.10
Openness	741	82.91	34.06	0.18	207.16
Natural rent	780	9.30	11.52	0.00	60.11
Inflation	733	6.22	7.86	-8.12	109.68
Financial development	738	37.91	29.12	0.002	152.55
GDP per capita	785	3849.31	3594.78	206.71	24304.52
Population (in millions of people)	793	43.93	162.90	0.02	1371.22
Government expenditures	217	778.26	530.51	28.59	2948.33
Press freedom	745	55.86	19.24	15.00	95.00
Gross capital	689	25.56	10.11	1.73	70.62

Table A3. Descriptive statistics for high-income countries

Series	Obs.	Mean	Std. dev.	Min	Max
Minority investors' protection	309	72.81	8.55	38.81	91.24
FDI per capita	313	3376.84	15869.30	-10335.36	253696.40
Public employment	114	23.99	9.35	7.80	75.00
Capitalization	202	97.73	179.54	4.67	1185.86
Corruption perception	300	6.62	1.66	1.90	9.46
Openness	310	119.16	82.97	28.00	455.42
Natural rent	312	5.28	11.58	0.00	60.83
Inflation	306	2.21	3.98	-2.43	62.17
Financial development	295	96.85	50.77	13.82	253.57
GDP per capita	313	34868.81	20327	10334.78	107036
Population (in millions of people)	313	23.46	49.41	0.05	321.42
Government expenditures	138	6096.66	4394.57	1571.68	19208.68
Press freedom	305	31.03	21.07	9.00	87.00
Gross capital	311	22.25	5.21	9.83	41.70