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Mergers and Acquisitions in Latin America: Industrial Productivity and Corporate Governance

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Mergers and Acquisitions in Latin America: Industrial Productivity and Corporate

Governance

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Abstract

This paper examines the impact of industrial productivity on transnationals M&As from

OECD countries towards Latin American countries in the period 1996 to 2010. It also

analyzes the relationship between external mechanism of corporate governance and

transnational M&As. For this purpose we use a gravitational model at the industry level. We find that industry productivity and higher standards of corporate governance in the country of origin promote transnational M&As activity. However, it is also found that higher levels of capital and technological productivity decreases transnational M&As activity.

Keywords. Mergers and Acquisitions, Industry Productivity, Corporate Governance

JEL Codes: F30, G34, L21

Introduction

Corporate Mergers and Acquisitions (M&As), due to constituting a complex phenomenon in both the reasons for them to take place and the impact in the resulting company, have been studied from different perspectives. Some studies have focused mainly on studying the determinants and the individual and strategic consequences of undertaking a merger and acquisition (Cortés, García, and Agudelo 2015; Harford 2002; Jarrel, Brickley, and Netter 1988; Malmendier and Tate 2005; North 2001; Vasco et al. 2014; Wang and Xie 2006). Similarly, other studies have identified periods of concentration of M&As activity, known as M&As waves, which refers to the wave pattern followed by the M&As' time series in both the number of deals and their value (Alexandridis, Mavrovitis, and Travlos 2012; Cortés, Agudelo, and Mongrut 2012; Golbe and White 1993; Gugler, Mueller, and Weichselbaumer 2012; Martynova and Renneboog 2008b).

Transnational M&As, that is, those for which the acquiring and acquired companies are established in difference countries, have recently been a focus of attention in the literature (Breuer and Salzmann 2011; Bris and Cabolis 2002; Graham, Martey, and Yawson 2008; Kim and Lu 2011; Martynova and Renneboog 2008a; Pablo 2009; Rossi and Volpin 2004). Some authors have focused their theoretical approaches and their study methodologies to treat

transnational M&As as a particular case of foreign direct investment (FDI). Considering transnational M&As as a particular case of FDI has important consequences, given that they are starting to gain more weight on international investment flows, representing up to 80% of total FDI (Hyun and Kim 2010). As such, these transactions have macroeconomic determinants that make them different from domestic M&As and, therefore, they must be studied independently.

The pioneers in applying a gravitational model to analyze transnational M&As were Di Giovanni (2005) and Portes and Rey (2005). Later, Hyun and Kim (2010) revisited the gravitational model to conclude that institutional quality of the country promotes transnational M&As activity. The usage of the gravitational model to study transnational M&As, which was motivated as a consequence of analyzing this phenomenon as a particular case of FDI, has been given theoretical support by Head and Ries (2008) and Hijzen, Gorg and Manchin (2008).

In this sense, this paper aims at verifying whether higher levels of industry productivity leads to a higher transnational M&As activity, directed from the OECD countries towards Latin America. Additionally, whether this activity is stimulated by the external mechanism of corporate governance of both countries. For this purpose, we employ a gravitational model at the industry level.

The contribution of this paper to the literature is twofold: the approach regarding productivity and the usage of the gravitational model at the industry level. Modeling at the industry level can bring about additional inferences on the topic and can potentially open doors for future studies that include more determinants of this phenomenon. Other studies (eg. Andrade and Stafford 2004; Harford 2005; Mitchell and Mulherin 1996), propose and verify the relation between industry shocks and M&As activity. However, none of these studies consider

different measures of productivity and their relation with M&As as a particular case of FDI. Furthermore, the authors that have applied the gravitational model to transnationals M&As, have always done so at the country level (Di Giovanni 2005; Erel, Liao, and Weisbach 2012; Head and Ries 2008; Hyun and Kim 2010; Portes and Rey 2005).[1]Finally, we measure industry productivity for each factor of production. That is, we identify the impact of labor, capital, and technological productivity on transnationals M&As.

The rest of the paper is structured as follow. Next section present the background and justifies the hypothesis tested. Methodology section describes the model, the data and the variables. Followed by the results and finally the conclusions of the study.

Background and Hypothesis

Industry Determinants

Until now, all studies that have applied the gravitational model to transnational M&As have specified the model at the country level.[2] However, in the international trade literature, where the model has been extensively developed, it is possible to find applications of different specifications of the gravitational equation at the industry level (Bergstrand 1989; Brainard 1993). In the present study the relationship between industry productivity and transnational M&As activity through a gravitational model is established.

There is evidence in the literature that indicates that higher industry productivity leads to higher levels of transnational M&As activity. According to Helpman, Melitz and Yealpe (2004), only the most productive firms are involved in international activities, and the more productive they are, the higher their preference towards FDI instead of exporting. This theoretical framework is also applied and verified by Damijan, Polanec and Prašnikar (2007), who found that greater capital intensity leads to higher propensity to invest abroad. Although

the previous studies are at the firm level, Pantelidis and Kyrikilis (2005) evaluate the factors that determine FDI in an economy. They found as the causes for investment activity: capital abundance (and therefore a lower marginal productivity of capital), differences among demand structures, competitive advantage (or technological productivity), human capital, currency appreciation, and the openness degree of the economy.

Even though the previous studies establish the relation between industry productivity and FDI, the different approaches could be particularly applied to transnational M&As. As mentioned before, transnational M&As are one of the channels available of FDI, which is also becoming one of the most important. Additionally, it is well known that M&As are a mechanism to enter other markets, which is consistent with the hypothesis of Helpman, Melitz and Yealpe. (2004).

Based on the literature we proposed the following hypothesis about the relation between industry productivity and transnational M&As.

Hypothesis 1: Higher levels of industry productivity leads to higher transnational M&As activity from OECD countries to Lantin American countries.

Corporate governance

Within the theoretical framework of Corporate Governance, the topic related to the market of corporate control has been one of the most widely discussed (Tirole 2005). Authors such as Jensen (1984; 1988; 1989a; 1989b), Jensen and Ruback (1983), among others, argue that the weakness in the corporate governance system in the 80s in the United States, is one of the possible causes for the growth of M&As.

According to Denis and McConnel (2003), research in corporate governance started to develop in the United States during the decades of the 70s and 80s. But it was only until the

90s that this kind of research started to take place in other countries. From here two stages arise in the research: studies related to internal mechanisms of corporate governance and studies related to external mechanisms. Regarding internal mechanisms, Denis and McConnel contemplate the composition of the board of directors, ownership structure, etc. And for external mechanisms, the authors consider the takeover market, legal systems, etc. This is reinforced by Doidge, Karolyi and Stulz (2007), who find that, in the case of less developed countries, variations in the indexes of corporate governance among firms are explained by country characteristics instead of own firm characteristics.

The majority of empirical studies on M&As and corporate governance, both related to internal and external mechanisms, have focused on the effects of corporate governance on value creation (Bris and Cabolis 2002; Martynova and Renneboog 2008a; Wang and Xie 2006), the likelihood of carrying out a M&A or accepting an acquisition offer (Graham, Martey, and Yawson 2008; North 2001; Pombo and Corredor 2009), or the transfer of corporate governance standards from the acquiring firm to the acquired firm (Bris, Brisley, and Cabolis 2008).

A particular study that is in line with our research is Erel, Liao and Weisbach (2012), who employed a gravitational model at the country level and found that the geographical distance, the quality of accounting information, and the level of bilateral trade are among some of the determinants of M&As activity between two countries. Additionally, the authors argue that it is likely that institutional characteristics at the country level are positively correlated with better corporate governance. However, they do not consider industry productivity as a determinant of M&As among countries.

This leads to the following hypothesis about the relation between M&As and corporate governance.

Hypothesis 2: External mechanisms of corporate governance propitiate M&As activity from OECD countries to Latin American countries.

Methodology

The model

The gravitational model was initially proposed as an empirical approach for the study of bilateral trade (Linnemann 1966; Tinbergen 2007). It was based on Newton's gravity law, according to which the force of attraction between two bodies (in this case between international flows) is directly proportional to their masses (size of the economies) and inversely proportional to the distance between them (geographical separation or cultural distances), as it is described in equation 1. The log-log specification of this expression has boosted the empirical research on international commerce through econometric models.

$$F_{ij} = \beta_1 \frac{Y_i^{\beta_2} Y_i^{\beta_3}}{D_{ij}^{\beta_4}} \qquad (1)$$

Later on, the model was given theoretical support by Anderson (1979) and Bergstrand (1985), which allowed for the development of other specifications and the application of the model to different areas of study. The model has been applied, for example, to intra–industry trade (Bergstrand 1989; Bergstrand 1990), to explain the relation between unilateral and bilateral trade flows at the industry level (Brainard 1993), and to explore different measures of cultural distance (Tadesse and White 2008) and of common language (Melitz 2008). It has been applied as well to studies on migration (Karemera, Oguledo, and Davis 2000) and tourism (McAllister and Klett 1976).

Among the different areas of international trade where the model has been applied, we find FDI to be one of them (De Mello-Sampayo 2007; MacDermott 2006; Páez 2008). Along the

same line, authors such as Portes and Rey (2005), Di Giovanni (2005), and Hyun and Kim (2010) have applied the gravitational model to transnationals M&As. However, it was Head and Ries (2008) and Hijzen, Görg and Manchin (2008) the ones who gave theoretical support to this model.

Given the hypothesis of this study, the theoretical and empirical background of the gravitational model related to transnational M&As, and its potential application at the industry level, the proposed specification is the following:

$$
\begin{aligned}
\text{Count}_{ikjt} = {} & \beta_1 + \beta_2 \ln \text{GDP}_{it} + \beta_3 \left(\frac{\text{Prod}_{ikt}}{\text{GDP}_{it}} \right) + \beta_4 \ln \text{GDP}_{jt} \\
& + \beta_5 \ln \text{Dist}_{ij} + \beta_6 \text{ComLang}_{ij} + \beta_7 \text{RTA}_{ijt} + \beta_8 \text{TaxR}_{jt} \\
& + \beta_9 \text{CorpGov}_{it} + \beta_{10} \text{CorpGov}_{jt} + \beta_{11} \text{PK}_{ikt} + \beta_{12} \text{PL}_{ikt} \\
& + \beta_{13} \text{PTech}_{ikt} + \beta_{14} \text{Open}_{ikt} + \beta_{15} \ln \text{Trade}_{ikjt} + \varepsilon_{ikjt}
\end{aligned}
\tag{2}
$$

Where i is the country of origin, k is the industry in the country of origin, j is the destination country, t is the year of the observation, Count is the number of M&As announcements, GDP is the gross domestic product in constant dollars of year 2000, Prod is the industry's production, Dist is the geographical distance between the two countries, ComLang is a dummy variable that indicates whether the official language between both countries is the same, RTA is a dummy variable that indicates whether there is a current trade agreement between the two countries, TaxR is the nominal corporate tax rate on profits, CorpGov is an indicator of corporate governance standards, PK is a measure of capital productivity, PL is a measure of labor productivity, PTech is a measure of technological productivity, Open is an openness measure, and Trade is the amount of bilateral trade.

Data

Transnational M&As announcements are extracted from the Thomson One database for the period 1996 to 2010. It is only taken announcements that have as country of destination Argentina, Brazil, Chile, Colombia, Mexico or Peru; and as country of origin any member of the OECD, excluding Chile and Mexico. Additionally, we exclude as well hostile takeovers, privatizations, leverage buyouts, spin-offs, recapitalizations and repurchases. Announcements of industries with special regulations are also not taken into consideration, such as: transportation and public services, finance, insurance and real state, individual sanitary services, education services, mutual organizations and public administration. Finally, it is only considered those announcements for which the purpose was to acquire 5% or more of the share ownership, out of which a total of 3,592 announcements are obtained. Given that a big part of the data come from the national accounts, the announcements are reclassified from SIC to ISIC Rev. 3, and grouped at the two digits level.[3]

Table 1 shows the composition of announcements in the sample by industry and year, without distinguishing the origin or destination country. It shows that almost three fourths of the announcements are concentrated in the first seven industries, that is, mining, rent of machinery, food products, chemicals and chemical services, machinery and equipment, and wholesale and retail trade. It is possible to identify as well periods of activity concentration, something that has already been documented for Latin America (Cortés, Agudelo, and Mongrut 2012), that is, a wave in the period 1997 to 2000, and another in 2007 to 2010.

[Table 1 about here]

The composition by country, as shown in Table 2, is highly concentrated in the country of origin, and no so much in the destination country. Around 80% of the total of announcements comes from five countries: United States, Canada, Spain, France, and England. The

concentration of horizontal M&As announcements is also high, although Canada represents the majority of announcements. This is because most of the announcements that come from Canadian companies in the mining industry are of horizontal type. Table 2 also indicates that the announcements are concentrated in those economies of bigger size, for both origin and destination countries. This validates one of the assumptions of the gravitational model for the selected sample.

[Table 2 about here]

The data for the GDP at the country level is taken from the World Bank's World Development Indicators database at constant dollars of year 2000, while geographical distances and language is obtained from the GeoDist database of the CEPII institute. Nominal corporate tax rates on profits in the destination country is acquired from the Corporate & Indirect Tax Survey 2011 of the firm KPMG. The information on national accounts at the industry level from the country of origin is obtained from the STAN Database for Structural Analysis of the OECD. The monetary values are deflated using the corresponding deflator available from the database, and posteriorly converted to dollars of year 2000. With this information it is calculated the weight of the industry within the country $\left(\frac{\text{Prod}_{ikt}}{\text{GDP}_{it}}\right)$, as well as the different indicators of industry productivity.

Different measures are employed for capital productivity (PK). One of the measures is the real interest rate, under the assumption that producers maximize their profits when the marginal productivity of capital is equal to its cost, that is, the real interest rate. According to this, we use the interest rate on loans in the country of origin, obtained from the World Development Indicators database, and subtracting from it the implicit inflation in the industry deflator. Other calculated measures employed in this study are industry's production and value added over its stock of capital. Similar to capital productivity, different measures are used for labor

productivity. Under the same profit maximization assumption, in which the marginal productivity of labor is equal to its cost, that is wages, we calculate the wage for the industry by dividing the labor cost over the number of employees. It is also calculated the value added of the industry divided by labor costs, the number of employees, and the working hours.

Similarly, different measures of technological productivity are employed at the country and industry levels. At the country level, we calculate the number of patent requests divided by: the number of people dedicated to research and development, number of people with tertiary education, total population, and total production. The number of patents for the country and the data on population are taken from the World Bank Development Indicators database. At the industry level, we calculate the expenditure on research and development over total production and over the stock of capital. Research and development expenditures are taken from the STAN R&D Expenditure in Industry database of the OECD.

The corporate governance variables are at the macro level given that the gravitational model, by definition, has an aggregated specification. According to the literature presented in the background section, these measures correspond to external mechanisms of corporate governance. There exist empirical findings that suggest that in less developed countries the greatest proportion in the variation of individual standards of corporate governance are explained by own country characteristics and not by firm characteristics (Doidge, Karolyi, and Stulz 2007). For this reason, we employ the Kaufmann variables, which are at the country level, time varying and constructed from a model of unobservable components with perceptual information from different sources on governance and institutionality (Kaufmann, Kraay, and Mastruzzi 2010). The institutional environment that captures these variables, according to Daniel, Cieslewicz, and Pourjalali (2011), determines the practices of corporate governance.

We also take two of the La Porta's indicators. The first one is the *anti-director rights*, which is a measure of protection for the minority shareholders based on legal mechanisms and it is related to voting rights (La Porta, Lopez-de-Silanes, and Shleifer 1998). The second one is the *anti-self-dealing index*, which measures the level of stockholders protection against *tunneling* transactions (Djankov et al. 2008).

Given that Kaufmann indicators are six, and that *anti-director rights* and *anti-self-dealing index* indicators are also available, an analysis of principal components is performed in order to construct a latent variable of corporate governance. This procedure allows us to gather in one single variable a big part of the different elements that are related to institutions, laws, codes and customs that determine the countries' practices of corporate governance. Besides, it allows us to take advantage of the cross sectional differences of the La Porta variables with the time varying Kaufmann indicators.[4] The results show that the first component captures around 68% of the total indicators variability. The average across time of the first results, as illustrated in Figure 1, shows a clear advantage of the OECD countries over their Latin American counter parts in terms of corporate governance standards. Among Latin American countries, Chile stands up above the others, with a corporate governance level similar to that of OECD countries. The countries with the lowest levels of corporate governance are Peru and Colombia.

[Figure 1 about here]

The variable Open_{ikt} measures the level of economic openness of the industry. It is calculated as the sum of industry exports and imports, divided by its total production (Chuang and Lin 1999). This data is also available in the STAN Database for Structural Analysis. The variable Trade_{ikjt} is the amount of bilateral trade from the industry in the destination country towards

the country of origin. This information is taken from the World Integrated Trade Solution (WITS) database of the World Bank.

Table 3 summarizes the expected signs of each of the variables in the model, according to the presented theoretical framework and previous empirical findings. With respect to the GDP of the destination and origin countries, it is expected a positive sign, given that it represents one of the fundamentals of the gravitational model. Similarly, it is expected that distance has a negative sign. Common language should promote M&As activity. In the international trade literature, this variable has been widely used and has been interpreted as a measure of cultural distance. Within the transnational M&As framework, this variable can be interpreted as a measure of the costs of doing business (Di Giovanni 2005) and costs of inspection (Head and Ries 2008).

It is expected that the presence of a trade agreement discourages transnational M&As activity, that is, that its sign is negative, contrary to international trade models. This is because the takeover market is a substitute of international trade. On the other hand, the effect of the earnings corporate tax rate is not completely clear. Some countries, in particular the emerging ones, have adopted tax relief policies in order to attract FDI (Hines Jr. 2001), and so it could be expected that higher tax rates discourage transnational M&As activity. However, it is documented that many times the empirical findings are contradictory (Hines Jr. 1997). With respect to corporate governance variables, it is expected that they have a positive sign, as it is argued in our hypothesis. In order to verify this result, additional robustness tests are performed.

In line with the hypothesis of this study, it is also expected that the sign of the different productivity measures is positive. This is the case, for example, for the labor and technological productivity. However, in the case of capital productivity, the neoclassical

theory proposes that investment is encouraged under the presence of high marginal productivity of capital, which occurs when the interest rate is high and there is low intensity in the usage of capital. Therefore, in line with this observation and the findings in studies related to FDI (Damijan et al. 2007; Helpman et al. 2004) we expect to find that in industries with high capital abundance, low marginal productivity of capital and low interest rates, there is more propensity to invest in foreign countries in the form of transnational M&As, and so we expect the sign of this variable to be negative.

Finally, it is expected that the sign of the openness variable is negative, for the same reason of the trade agreements variable: the lack of trade openness is an a priori barrier for the development of international trade, and so it is substituted by the takeover market. The difference between the two variables is that bilateral agreements reflect only the subscription of a treaty, while trade openness reflects how much the different agents in the economy take advantage of such agreements. And regarding the trade level between the industry in the country of origin and the destination country, it is expected that it encourages M&As activity, after controlling for trade agreements and openness, given that if the bilateral relation is high, it is due to less frictions for business development among the two.

Results

Main results

Table 4 shows the results from the econometric model estimation following two different methodologies: negative binomial of random effects panel data (NB, column 2), taking as dependent variable the number of transnational M&As announcements (Count_{ikjt}), due to this being a count variable; and a Tobit of random effects panel data (column 1), taking as dependent variable the transformation $\ln(1 + \text{Count}_{ikjt})$. The results support the idea that the

gravitational model at the industry level is applicable to transnational M&As. The greater the origin and destination countries' sizes ($\ln\text{GDP}_{it}$ and $\ln\text{GDP}_{jt}$), the greater is the number of transnational M&As announcements. It is observed that the coefficients are not too different comparing both estimation methodologies. It is also confirmed that the greater the size of the industry relative to the size of the economy in the country of origin, the greater is the number of transnational M&As announcements.

As proposed in hypothesis 1, the higher the labor productivity, the higher the number of transnational M&As announcements. The sign of the variable Wage_{ikt} is positive and statistically significant under both estimation methods. This indicates that in industries with high salaries and high labor productivity, companies try to penetrate foreign markets through the takeover market. The result is in line with the findings of Helpman, Melitz and Yealpe. (2004), who state that the most productive firms are the ones involved in international activities.

Regarding the marginal productivity of capital, it is confirmed that there is an inverse relation with transnational M&As activity, as the associated coefficient of the variable Interest Rate_{ikt} is negative and highly significant, and robust under the two estimation approaches. This indicates that in industries with low interest rates, high capital abundance (Damijan, Polanec, and Prašnikar 2007; Harford 2005; Pantelidis and Kyrkilis 2005), and depletion of the installed capacity (Andrade and Stafford 2004), firms try to grow or expand through the takeover market. Contrary to the expected, the variable Patent_{it}/ (R&D Personnel) of technological productivity has a negative sign, and is statistically significant and robust under both estimation methodologies. It is expected a positive relation between technological productivity and transnational M&As activity, however, it should be clarified that previous studies have found the same unexpected results on this variable (Pantelidis and Kyrkilis 2005).

With respect to hypothesis 2, the variables related to corporate governance, for both the country of origin ($CorpGov_{it}$) and the destination country ($CorpGov_{jt}$), are statistically significant and indicate a positive relation with transnational M&As activity. This implies that the external mechanisms of corporate governance, that is, the laws and conventions that determine the governance institutional practices of the countries (Denis and McConnell 2003), as well as the general level of investors protection (Djankov et al. 2008; La Porta, Lopez-de-Silanes, and Shleifer 1998), promote foreign investment through transnational M&As.

Last, the results related to the control variables are, in general terms, as expected. The variable for cultural distance or inspection costs ($ComLang_{ij}$) is positive and statistically significant, which indicates that if two countries share the same language, transnational M&As activity would be encouraged. The variable for trade agreements (RTA_{ijt}) is negative and significant, contrary to the findings of Hyun and Kim (2010), which can be interpreted as the takeover market being a substitute of the goods and services market in the absence of trade agreements (Di Giovanni 2005). On the other hand, although the variable for the corporate tax rate in the destination country ($TaxR_{jt}$) presents a positive sign, contrary to the expected, this is not at all surprising given similar findings in previous studies (Hines Jr. 1997). Trade openness ($Open_{ikt}$) has negative sign but it is only significant in one of the estimations; and bilateral trade ($lnTrade_{ikjt}$) is also significant with a positive sign, as expected.

In columns 3 and 4 of Table 4, the results of the negative binomial and Tobit estimations are presented, but considering as control variable the logarithm of industry's production in the country of origin ($Prod_{ikt}GDP_{it}$) instead of total country's GDP. The results support the idea that the greater the size of the industry, the greater the transnational M&As activity. The signs

and significance of the other variables do not present major differences, with the exception of technological productivity, openness, and bilateral trade, which lose statistical significance.

Robustness tests

Table 5 and 6 present the model estimations using alternative productivity variables through the negative binomial estimation methodology.[5] Columns 1 to 4 of Table 5 show the results of the additional variables for labor productivity: the logarithm of salary (Wage_{ikt}), the logarithm of the industry value added over labor costs ($\ln(\text{VA/Labor Costs})_{ikt}$), the logarithm of the industry value added over the number of employees ($\ln(\text{VA/Number of employees})_{ikt}$), and the logarithm of the industry value added over the number of working hours ($\ln(\text{VA/Number of hours})_{ikt}$). The results are consistent with the previous ones, in the sense that labor productivity promotes transnational M&As activity. Additionally, the variables are statistically significant.

Columns 5 and 6 of Table 5 describe the results for the additional variables related to capital productivity: the logarithm of production over the industry's capital stock ($\ln(\text{Prod/Capital Stock})_{ikt}$), and the logarithm of the value added over the industry's capital stock ($\ln(\text{VA/Capital Stock})_{ikt}$). However, the results are not statistically significant, although the same sign is preserved, just as for the variable real interest rate.

Columns 1 to 4 of Table 6 describe the results for the additional variables related to technological productivity: patents of the country of origin over population with tertiary education ($\text{Patents}_{ij}/\text{Tertiary ed. people}$), industry's research and development expenditures over production ($\text{R\&D expend.}_{ikt}/\text{Prod}_{ikt}$), and the number of patents per capita of the country. The negative sign obtained before is persistent in these estimations as well. However, only patents over population with tertiary education and patents per capita turn out to be statistically significant.

Finally, columns 5 and 6 of Table 6 present an alternative measure for the corporate governance standards in the country of origin. Instead of using the latent variable (which is constructed with the Kaufmann and La Porta's indicators), we take the Institutional Shareholders Services (ISS) indicators for all companies that are traded in the stock market and that belong to the studied industries.[6] The average of the individual indicators is calculated at the industry and country levels.[7] Column 5 and 6 show the results for the variable at the country and industry level, respectively. The results confirm that the better the corporate governance standards in the country or industry of origin, the greater is the number of announcements of transnational M&As.

Conclusions

The present study examines the impact of industry productivity on transnational M&As activity from OECD countries to Latin American countries in the period 1996 to 2010. The results show that the gravitational model at the industry level is applicable to the analysis of transnational M&As. Just as it is predicted in the literature, we find a positive relation between the size of the origin and destination countries and the number of transnational M&A announcements.

Additionally, we find that the productivity variables of the destination country explain the level of transnational M&A activity. However, not all variables support the idea that the greater the productivity, the greater the number of M&As. In particular, the productivity of capital presents an inverse relation and it is highly significant, which could be justified by the fact that firms in countries with high capital abundance try to expand their activities abroad through the takeover international market. Finally, we find that the external mechanisms of corporate governance, for both the origin and destination countries, foster an institutional environment that propitiates the presence of transnational M&As.

Future research of M&A activity in Latin America may wish to focus on study the determinant of transnational M&As having into account the industry integration involved for example vertical, horizontal or diversification. Second the study of agency problems involved in the M&A deals using internal mechanisms of corporate governance.

Notes

[1] The only exception, to our knowledge, is Hijzen, Görg and Manchin (2008) who specify a model at the industry level to contrast the hypothesis of tariff-jumping.

[2] To our knowledge, the only theoretical and empirical model at the industry level has been developed by Hijzen, Görg and Manchin (2008).

[3] In this way, it is possible to obtain 33 industries from 32 destination countries to 6 countries of origin, during a period of 15 years, which allows to generate a total of 95,040 possible observations. However, most of the announcements are concentrated in a few countries of origin and their respective industries, because of which, out of the 95,040 observations, 93,155 take a value of zero.

[4] For a formal definition of the construction of latent variables based on the analysis of principle components, see Lynn and McCulloch (2000).

[5] It is also estimated through Tobit, and the results are not qualitatively different.

[6] A vast quantity of corporate governance studies has used these indicators, including studies on external mechanisms of corporate governance (Aggarwal et al. 2009; Bruno and Claessens 2010; Doidge, Karolyi, and Stulz 2007).

[7] An unpaired t test is performed for the median, and it shows that in a big part of the countries and industries there are statistically significant differences among each other.

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Table 1. Transnational M&As announcements per industry of origin and year

Industry	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total	%
Mining and quarrying except energy producing materials	19	15	22	6	12	19	31	71	57	35	88	165	138	132	192	**1002**	**28%**
Renting of mach. and other business activities	9	12	26	47	60	33	14	8	7	9	21	40	27	28	45	**386**	**11%**
Mining and quarrying of energy producing materials	16	15	8	6	20	9	15	17	19	16	37	34	34	49	52	**347**	**10%**
Food products	26	17	27	14	30	22	13	11	20	12	18	22	28	17	10	**287**	**8%**
Chemicals and chemical products	25	17	18	21	23	18	4	6	7	12	8	19	10	11	20	**219**	**6%**
Machinery and equipment	17	21	20	17	17	13	5	4	8	10	12	20	21	15	13	**213**	**6%**
Wholesale and retail trade	7	19	18	17	15	15	12	4	12	10	11	12	6	13	9	**180**	**5%**
Printing and publishing	1	1	9	11	19	9	4	3	4	5	9	14	5	3	14	**111**	**3%**
Pulp	8	8	13	7	11	8	2	7	6	1	4	0	5	4	1	**85**	**2%**
Other non-metallic mineral products	5	9	15	13	12	5	3	0	5	1	3	4	5	2	2	**84**	**2%**
Fabricated metal products	5	6	10	5	9	6	1	3	3	3	6	4	9	7	5	**82**	**2%**
Construction	0	3	5	6	4	5	2	5	4	5	8	7	12	7	6	**79**	**2%**
Electrical machinery and apparatus	2	7	9	7	7	7	3	1	7	1	3	4	8	2	4	**72**	**2%**
Coke	7	4	5	9	10	4	4	2	1	3	5	2	1	0	2	**59**	**2%**
Basic metals	1	1	1	1	7	2	4	2	1	6	3	8	5	6	7	**55**	**2%**
Hotels and restaurants	5	2	3	9	5	3	1	4	5	2	7	5	1	0	2	**54**	**2%**
Textiles	1	1	13	3	5	2	3	3	2	3	2	3	3	3	2	**49**	**1%**
Other community	0	5	8	3	2	3	2	1	1	0	1	1	1	5	5	**38**	**1%**
Radio	1	2	3	2	7	3	4	2	0	0	1	4	5	1	2	**37**	**1%**
Agriculture	2	3	6	2	2	1	1	1	2	0	1	3	1	1	3	**29**	**1%**
Rubber and plastics products	2	4	2	1	1	1	3	1	0	0	3	0	2	2	1	**23**	**1%**
Medical	2	1	1	0	2	1	0	1	0	4	2	0	4	1	4	**23**	**1%**
Manufacturing n.e.c. and recycling	0	1	3	4	1	1	0	5	1	2	1	2	1	0	0	**22**	**1%**
Leather	1	5	2	0	0	1	0	1	1	2	1	2	2	2	0	**20**	**1%**
Office	0	3	2	2	0	0	0	1	0	0	2	0	1	0	0	**11**	**0%**
Wearing apparel	0	0	3	2	0	0	1	0	0	0	0	1	0	0	0	**7**	**0%**
Fishing	0	0	0	0	0	0	0	0	1	0	0	3	0	1	1	**6**	**0%**
Wood and products of wood and cork	0	0	0	1	1	0	1	1	0	0	0	1	0	0	0	**5**	**0%**
Motor vehicles	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**3**	**0%**
Other transport equipment	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	**3**	**0%**
Post and telecommunications	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**	**0%**
Electricity and gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0%**
Real estate activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0%**
Total	**2158**	**2180**	**2251**	**2216**	**2283**	**2193**	**2135**	**2168**	**2178**	**2147**	**2263**	**2387**	**2344**	**2322**	**2412**	**3592**	**100%**

The table shows the transnational M&As announcements per industry of origin and year from the OECD countries to six Latin American countries, as reported by Thomson One, in the period 1996 and 2010. The following deals were excluded from the sample: a) Hostile takeovers, privatizations, leverage buyouts, spin-offs, recapitalizations, and repurchases. b) Industries with special regulations, such as: transportation and public services, finance, insurance and real state, individual sanitary services, education services, mutual organizations and public administration. c) Announcements in which less than 5% was being acquired.

Table 2. Transnational M&As announcements per county of origin and year

Countries	All announcements								Horizontal announcements							
	ARG	BRA	CHL	COL	MEX	PER	Total	%	ARG	BRA	CHL	COL	MEX	PER	Total	%
USA	206	401	95	60	352	58	1172	33%	92	135	41	34	155	23	480	30%
CAN	115	143	116	78	432	179	1063	30%	56	71	50	51	269	100	597	37%
ESP	70	59	30	16	50	9	234	7%	31	28	14	9	23	5	110	7%
FRA	54	114	16	14	20	0	218	6%	15	42	6	8	6	0	77	5%
GBR	41	67	14	12	34	16	184	5%	23	18	2	7	14	8	72	4%
AUS	8	47	37	5	10	18	125	3%	5	20	14	2	1	6	48	3%
NLD	22	32	12	8	19	4	97	3%	14	17	4	4	9	1	49	3%
DEU	15	51	6	0	22	1	95	3%	6	13	3	0	6	0	28	2%
ITA	13	38	2	2	3	0	58	2%	4	18	2	1	1	0	26	2%
CHE	10	23	1	9	10	3	56	2%	3	6	1	3	5	1	19	1%
SWE	10	21	6	5	10	1	53	1%	7	8	2	5	6	1	29	2%
JPN	2	23	3	1	7	1	37	1%	0	6	2	0	3	0	11	1%
PRT	1	26	2	0	0	0	29	1%	1	18	2	0	0	0	21	1%
DNK	4	14	3	0	7	0	28	1%	2	6	3	0	3	0	14	1%
NOR	3	15	9	0	1	0	28	1%	1	6	0	0	0	0	7	0%
FIN	1	11	2	1	3	0	18	1%	0	2	0	0	1	0	3	0%
BEL	2	11	0	0	2	2	17	0%	0	4	0	0	0	0	4	0%
AUT	3	8	1	0	3	0	15	0%	1	2	0	0	0	0	3	0%
NZL	3	2	4	1	5	0	15	0%	2	0	1	0	1	0	4	0%
IRL	1	7	1	0	4	0	13	0%	0	1	0	0	2	0	3	0%
ISR	1	10	0	0	1	0	12	0%	0	5	0	0	1	0	6	0%
LUX	4	5	0	0	2	0	11	0%	0	1	0	0	2	0	3	0%
KOR	2	0	0	0	2	1	5	0%	0	0	0	0	1	0	1	0%
GRC	1	0	0	0	2	1	4	0%	0	0	0	0	0	0	0	0%
HUN	0	0	1	0	0	1	2	0%	0	0	0	0	0	0	0	0%
ISL	0	1	0	0	0	0	1	0%	0	1	0	0	0	0	1	0%
POL	0	0	1	0	0	0	1	0%	0	0	1	0	0	0	1	0%
TUR	0	1	0	0	0	0	1	0%	0	0	0	0	0	0	0	0%
CZE	0	0	0	0	0	0	0	0%	0	0	0	0	0	0	0	0%
EST	0	0	0	0	0	0	0	0%	0	0	0	0	0	0	0	0%
SVK	0	0	0	0	0	0	0	0%	0	0	0	0	0	0	0	0%
SVN	0	0	0	0	0	0	0	0%	0	0	0	0	0	0	0	0%
Total	592	1130	362	212	1001	295	3592	100%	263	428	148	124	509	145	1617	100%
%	16%	31%	10%	6%	28%	8%	100%		16%	26%	9%	8%	31%	9%	100%	

The table shows the transnational M&As announcements per country of origin and year from the OECD countries to six Latin American countries, as reported by Thomson One, in the period 1996 and 2010. The following deals were excluded from the sample: a) Hostile takeovers, privatizations, leverage buyouts, spin-offs, recapitalizations, and repurchases. b) Industries with special regulations, such as: transportation and public services, finance, insurance and real state, individual sanitary services, education services, mutual organizations and public administration. c) Announcements in which less than 5% was being acquired.

Table 3. Variable definition and expected signs

Variable		Measure	Expected sign
$\ln GDP_{it}$, $\ln GDP_{jt}$	Gross domestic product, acquirer and target country	Log of GDP at constant dollars	+
$\ln Dist_{ij}$	Geographical distance	Kilometers of geographical distance between countries	−
$\left(\dfrac{Prod_{ikt}}{GDP_{it}}\right)$	Weight of industry production in GDP	Industry production at constant dollars over GDP	+
$ComLang_{ij}$	Common language	Dummy variable	+
RTA_{ijt}	Regional trade agreement	Dummy variable	−
$TaxR_{jt}$	Corporate income tax rate	Rate	?
$CorpGov_{it}$, $CorpGov_{jt}$	Corporate governance index	Latent variable of Kaufmann, La Porta et al and Djankov et al variables	+
PL_{ikt}	Labor productivity	Wage, value added over labor costs, value added per employee, value added per hour worked	+
PK_{ikt}	Capital productivity	Real interest rate, production over capital stock and value added over capital stock	−
$PTech_{ikt}$	Technology productivity	Patent applications over R&D personnel, patent application over labor force with tertiary education, patent applications over production, patent applications per capita, R&D expenditure over production and R&D expenditure over capital stock	+
$Open_{ikt}$	Openness to international trade	Exports plus imports over production	−
$Trade_{ikjt}$	Bilateral trade	Exports from origin industry to target country	+

The table summarizes the expected signs of each of the variables of the model, according to the theoretical framework presented and previous empirical findings.

Table 4. Gravitational model results of transnational M&As activity

Dependent variable	Tobit (1) $\ln(1 + \text{Count}_{ikjt})$	NB (2) Count_{ikjt}	Tobit (3) $\ln(1 + \text{Count}_{ikjt})$	NB (4) Count_{ikjt}
$\ln \text{GDP}_i$	0.8228***	1.1471***		
	(0.1326)	(0.1781)		
$\text{Prod}_{ikt}/\text{GDP}_{it}$	10.3746***	10.5428**		
	(2.8549)	(3.6778)		
$\ln \text{Prod}_{ik}$			0.5919***	0.6813***
			(0.0892)	(0.1128)
$\ln \text{GDP}_j$	0.3975***	0.4287**	0.4440***	0.4526***
	(0.1032)	(0.1338)	(0.1057)	(0.1363)
$\ln \text{Dist}_{ij}$	-0.6325*	-1.1437**	-1.0053***	-1.7576***
	(0.3152)	(0.4097)	(0.3038)	(0.4058)
ComLang_{ij}	0.7217**	0.7259*	0.7352**	0.6596*
	(0.2344)	(0.3144)	(0.2378)	(0.3197)
RTA_{ijt}	-0.3815*	-0.5136*	-0.3725*	-0.4821*
	(0.1657)	(0.2283)	(0.1662)	(0.2297)
TaxR_{jt}	0.0767***	0.0883**	0.0751***	0.0881**
	(0.0216)	(0.0279)	(0.0216)	(0.028)
Corporate governance				
$\quad \text{CorpGov}_{it}$	0.4853***	0.6793***	0.3183*	0.4175*
	(0.1423)	(0.1914)	(0.1303)	(0.1761)
$\quad \text{CorpGov}_{jt}$	0.3995***	0.5933***	0.4281***	0.6538***
	(0.099)	(0.1295)	(0.0995)	(0.1299)
Labor productivity				
$\quad \text{Wage}_{ikt}$	6.6094**	7.3803**	5.1901*	5.8496*
	(2.2047)	(2.558)	(2.2332)	(2.6203)
Capital Productivity				
$\quad \text{Interest rate}_{ikt}$	-0.0057**	-0.0091***	-0.0078***	-0.0110***
	(0.002)	(0.0024)	(0.0021)	(0.0024)
Technology productivity				
$\quad \text{Patents}_{it}/\text{R\&D personnel}$	-4.5905**	-8.0757***	-0.9328	-2.4055
	(1.7266)	(2.3104)	(1.4391)	(2.0035)
Open_{ikt}	-0.0935	-0.3256**	0.0085	-0.1515
	(0.0621)	(0.125)	(0.0458)	(0.1262)
$\ln \text{Trade}_{ikjt}$	0.1037***	0.1625***	0.0452	0.0920*
	(0.0301)	(0.0413)	(0.0313)	(0.0432)
_cons	-35.6457***	-40.0181***	-23.7013***	-18.1536**
	(6.2486)	(7.9779)	(4.7645)	(5.9329)
N	8551	8551	8551	8551
N_lc	8222		8222	
N_unc	329		329	
Log likelihood	-1258.276	-1348.1554	-1257.4023	-1352.5661
AIC	2550.552	2730.3107	2546.8047	2737.1321

The table reports the gravitational model results of transnational M&As activity from OECD countries to six Latin American countries, as it is reported by Thomson One between 1996 and 2010. The model was estimated following two methodologies: (NB) Negative Binomial of random effects panel data, columns (2) and (4), taking as dependent variable the number of transnational M&As announcements (Count_{ikjt}). (Tobit) Tobit of random effects panel data, columns (1) and (2), taking as dependent variables the transformation $\ln(1 + \text{Count}_{ikjt})$. The following announcements were excluded from the sample: a) Hostile takeovers, privatizations, leverage buyouts, spin-offs, recapitalizations, and repurchases. b) Industries with special regulations, such as: transportation and public services, finance, insurance and real state, individual sanitary services, education services, mutual organizations and public administration. c) Announcements in which less than 5% was being acquired. The variables definition is shown in Tables 3. The standard errors are in parenthesis. *, ** and *** represent significance at the 10%, 5%, and 1%, respectively.

Table 5. Robustness tests. Alternative measure of labor and capital productivity

| | Labor productivity | | | | Capital productivity | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
Dependent variable	Count$_{ikjt}$	Count$_{ikjt}$	Count$_{ikjt}$	Count$_{ikjt}$	Count$_{ikjt}$	Count$_{ikjt}$
ln GDP$_i$	1.1360***	1.0290***	0.9633***	1.0970***	1.0921***	1.0664***
	(0.178)	(0.1697)	(0.1636)	(0.2839)	(0.2119)	(0.2103)
Prod$_{ikt}$/GDP$_{it}$	10.3092**	9.9925**	3.5363	-0.8478	15.9678***	15.1323***
	(3.6699)	(3.7539)	(3.2605)	(4.7466)	(4.1071)	(4.1413)
ln GDP$_j$	0.4272**	0.4080**	0.4493***	0.4555*	0.6446***	0.6375***
	(0.1335)	(0.1301)	(0.1241)	(0.1913)	(0.1653)	(0.1662)
ln Dist$_{ij}$	-1.1471**	-1.2798**	-0.7330*	-0.1099	-3.0760*	-3.1257*
	(0.4084)	(0.4059)	(0.3641)	(0.5179)	(1.2781)	(1.2804)
ComLang$_{ij}$	0.7359*	0.5974	0.8848**	-0.0813	0.7416*	0.7750*
	(0.3136)	(0.3178)	(0.3027)	(0.4765)	(0.345)	(0.3453)
RTA$_{ijt}$	-0.5169*	-0.4808*	-0.5974**	-0.189	-0.7857**	-0.7931**
	(0.2282)	(0.2192)	(0.2219)	(0.335)	(0.2465)	(0.2465)
TaxR$_{jt}$	0.0888**	0.0995***	0.0742**	0.0174	0.1690***	0.1677***
	(0.0279)	(0.0267)	(0.026)	(0.0369)	(0.0346)	(0.0346)
Corporate governance						
CorpGov$_{it}$	0.6719***	0.4725**	0.5248**	-0.0281	0.4783*	0.5434*
	(0.1909)	(0.1827)	(0.1822)	(0.362)	(0.2266)	(0.2354)
CorpGov$_{jt}$	0.5950***	0.6385***	0.4863***	0.2188	0.9790***	0.9748***
	-0.1295	-0.1249	-0.1201	-0.1707	-0.1687	-0.1689
Labor productivity						
Wage$_{ikt}$					6.8375	3.8132
					(4.081)	(3.2191)
ln Wage$_{ikt}$	8.9118**					
	(2.9235)					
ln (VA/Labor costs)$_{ikt}$		2.6426***				
		(0.4884)				
ln (VA/Number of employees)$_{ikt}$			0.9481***			
			(0.1283)			
ln (VA/Number of hours)$_{ikt}$				1.0959***		
				(0.2357)		
Capital Productivity						
Interest rate$_{ikt}$	-0.0092***	-0.0038	-0.0084***	-0.0112***		
	(0.0024)	(0.0027)	(0.0024)	(0.0032)		
ln (Prod/Capital stock)$_{ikt}$					-6.7531	
					(3.4795)	
ln (VA/Capital stock)$_{ikt}$						-11.6727
						(6.5677)
Technology productivity						
Patents$_{it}$/R&D personnel	-7.9673***	-5.8402**	-5.5081*	-15.9673**	-7.5332**	-7.2206**
	(2.3057)	(2.242)	(2.2248)	(5.0433)	(2.7847)	(2.7709)
Open$_{ikt}$	-0.3321**	-0.2455*	-0.3957***	-0.2179	0.0266	0.0383
	(0.1253)	(0.1201)	(0.1179)	(0.1773)	(0.049)	(0.0483)
ln Trade$_{ikjt}$	0.1635***	0.2105***	0.2225***	0.1682**	0.1891***	0.2022***
	(0.0412)	(0.0446)	(0.0395)	(0.0555)	(0.0525)	(0.0545)
_cons	-39.6928***	-40.0985***	-35.9457***	-46.4962***	-5.8267	8.4095
	(7.9611)	(7.5858)	(7.3621)	(12.9261)	(17.8086)	(23.5687)
N	8551	9301	9051	4177	6763	6733
Log likelihood	-1347.7021	-1428.0055	-1434.8924	-780.9986	-828.217	-828.4028
AIC	2729.4042	2890.011	2903.7849	1595.9973	1690.4339	1690.8056

The table reports the gravitational model results of transnational M&As activity from OECD countries to six Latin American countries, as it is reported by Thomson One between 1996 and 2010. The model was estimated using (NB) Negative Binomial of random effects panel data, taking as dependent variable the number of transnational M&As announcements (**Count$_{ikjt}$**). The alternative variables are presented as follows: columns (1) to (4) contain the variables related to labor productivity, and columns (5) and (6) those related to capital productivity. The following announcements were excluded from the sample: a) Hostile takeovers, privatizations, leverage buyouts, spin-offs,

recapitalizations, and repurchases. b) Industries with special regulations, such as: transportation and public services, finance, insurance and real state, individual sanitary services, education services, mutual organizations and public administration. c) Announcements in which less than 5% was being acquired. The variables definition is shown in Tables 3. The standard errors are in parenthesis. *, ** and *** represent significance at the 10%, 5%, and 1%, respectively.

Table 6. Robustness tests. Alternative measure of technology productivity and corporate governance standards

	Technology productivity				Corporate governance	
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	$Count_{ikjt}$	$Count_{ikjt}$	$Count_{ikjt}$	$Count_{ikjt}$	$Count_{ikjt}$	$Count_{ikjt}$
ln GDP_i	0.9101***	0.5521**	0.5077*	0.9361***	0.6630***	0.7368***
	(0.1492)	(0.1732)	(0.2029)	(0.1523)	(0.1858)	(0.2087)
$Prod_{ikt}/GDP_{it}$	10.3831**	9.3176*	10.2250*	10.4848**	10.8200**	7.9178
	(3.5792)	(4.3833)	(5.1079)	(3.5704)	(3.7022)	(4.501)
ln GDP_j	0.4714***	0.4763**	0.4204*	0.4873***	0.3778**	0.4774**
	(0.1318)	(0.1602)	(0.2131)	(0.1322)	(0.1324)	(0.1685)
ln $Dist_{ij}$	-0.8765*	-1.0947*	-4.0432*	-0.8063	-1.7230***	-1.5811***
	(0.4215)	(0.4371)	(1.6119)	(0.4344)	(0.3842)	(0.4737)
$ComLang_{ij}$	0.5305	0.6969*	0.8271*	0.5183	0.5164	0.7929
	(0.3163)	(0.3128)	(0.3986)	(0.3171)	(0.3052)	(0.504)
RTA_{ijt}	-0.4513*	-0.8324**	-0.8936**	-0.4035	-0.4932*	-0.3962
	(0.2227)	(0.2708)	(0.3158)	(0.223)	(0.2295)	(0.2851)
$TaxR_{jt}$	0.0836**	0.1708***	0.1930***	0.0802**	0.0999***	0.0406
	(0.0272)	(0.033)	(0.0436)	(0.0273)	(0.0276)	(0.0332)
Corporate governance						
$CorpGov_{it}$	0.6847***	0.1765	0.0626	0.8097***		
	(0.1842)	(0.1801)	(0.2395)	(0.199)		
$CorpGov_{jt}$	0.5747***	0.8314***	0.9375***	0.5566***	0.6854***	0.4524**
	(0.1285)	(0.1547)	(0.2322)	(0.1297)	(0.1276)	(0.1503)
CorpGov (ISS)$_{it}$					0.0284*	
					(0.0113)	
CorpGov (ISS)$_{jt}$						0.0227*
						(0.0097)
Labor productivity						
$Wage_{ikt}$	7.2010**	5.5176	5.9517*	7.3624**	7.6026**	2.5345
	(2.5357)	(2.8726)	(2.9776)	(2.5302)	(2.5591)	(6.0284)
Capital Productivity						
Interest rate$_{ikt}$	-0.0092***	-0.0053	-0.0059	-0.0092***	-0.0090***	-0.0071**
	(0.0023)	(0.0042)	(0.0047)	(0.0023)	(0.0024)	(0.0025)
Technology productivity						
Patents$_{it}$/R&D personnel					-4.5831*	-6.6437*
					(2.1521)	(2.8293)
Patents$_{it}$/Tertiary ed. People	-0.2612***					
	(0.0762)					
R&D expend.$_{ikt}$/Prod$_{ikt}$		-4.457				
		(4.2489)				
R&D expend.$_{ikt}$/Capital stock$_{ikt}$			-2.4145			
			(2.3836)			
Patents *per cápita* $_{it}$				-2568.3298***		
				(755.4227)		
$Open_{ikt}$	-0.3126**	-0.8326***	-0.6487*	-0.3059**	-0.3105*	-0.3503*
	(0.1189)	(0.2092)	(0.2579)	(0.1187)	(0.1253)	(0.1476)
ln $Trade_{ikjt}$	0.1562***	0.2974***	0.2495**	0.1545***	0.1519***	0.0435
	(0.0401)	(0.0682)	(0.0886)	(0.04)	(0.041)	(0.0489)
_cons	-36.9133***	-27.9200***	1.616	-38.9705***	-19.6656**	-21.6328**
	(7.6164)	(7.8929)	(18.1729)	(7.9683)	(6.5684)	(7.7775)
N	9064	6292	3144	9064	8551	3575
Log likelihood	-1395.0859	-876.5684	-553.0827	-1395.278	-1351.3032	-879.3412
AIC	2824.1717	1787.1367	1140.1655	2824.5561	2736.6064	1792.6824

The table reports the gravitational model results of transnational M&As activity from OECD countries to six Latin American countries, as it is reported by Thomson One between 1996 and 2010. The model was estimated using (NB) Negative Binomial of random effects panel data taking as dependent variable the number of transnational M&As announcements **(Count$_{ikjt}$).** The alternative variables are presented as follows: columns (1) to (4) contain the variables related to technological productivity, and columns (5) and (6) those related to corporate governance standards. The following announcements were excluded from the sample: a) Hostile takeovers, privatizations, leverage buyouts, spin-offs, recapitalizations, and repurchases. b) Industries with special regulations, such as: transportation and public services, finance, insurance and real state, individual sanitary services, education services, mutual organizations and public administration. c) Announcements in which less than 5% was being acquired. The variables definition is shown in Tables 3. The standard errors are in parenthesis. *, ** and *** represent significance at the 10%, 5%, and 1%, respectively.
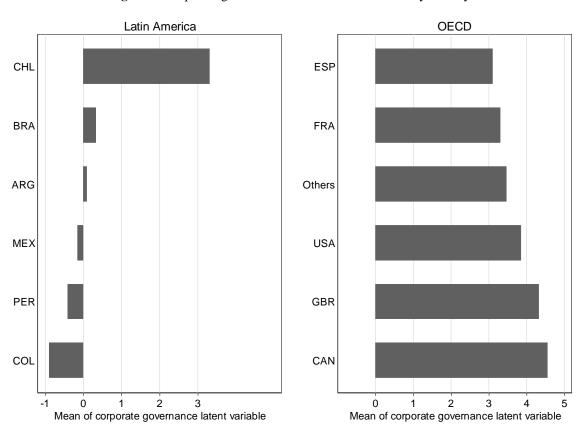
Figura 1. Corporate governance latent variable measure by country