

International diversification, pyramidal ownership and firm value in emerging markets: The Chilean Case

Abstract

This research is the first to analyze the impact of international diversification on the performance of South American firms. For this, we considered Chile.

Considering a sample of 47 companies listed on the Santiago Stock Exchange during the period between 2003 and 2013, we found, in the first place, an international diversification discount. Secondly, when investigating the relationship between international diversification and performance, we found that they are related through an S-shaped curve. Finally, we investigated how pyramidal ownership structure moderates the relationship between international diversification and performance, finding that this kind of ownership structure negatively impacts the performance of companies initiating international diversification strategies. It could be inferred that controlling shareholders adopt these kinds of strategies to divert wealth from minority shareholders.

JEL CODE: C30, C33, G15 and G32

KEY WORDS: International Diversification, Pyramidal Ownership, Firm Value.

I. Introduction

Recent research in business of emerging economies reports evidence about the negative relationship between pyramidal ownership structure and the value of companies when they initiate corporate diversification strategies, such as business and ownership diversification of other companies. (Jara-Bertín, M. et al., 2015). It is inferred that the controlling shareholder, especially in environments where external investor protection is weak (La Porta et al., 1998; La Porta et al., 1999), can have incentives to make companies adopt corporate strategies, aiming to obtain private control benefits, thus maximizing their own wealth at the expense of minority shareholders' wealth. This could be especially true for those companies initiating complex corporate strategies in an environment contributing to form pyramidal structures, as the case of international diversification corporate strategy in an emerging economy that has a high concentration of ownership and pyramidal ownership structures. In this line, business literature has not investigated in detail how the pyramidal ownership structure impacts the performance of the companies initiating international diversification strategies.

The relationship between international diversification and performance has been widely studied in business literature (Capar and Kotabe, 2003; Chen-Ho and Kumar, 2010; Lee and Gaur, 2012, among others), and has found no consensus regarding how is this relationship (Bobillo et al., 2010; Yang and Driffield, 2012; Jong and van Houten, 2014; among others).

In emerging economies, the studies in this area are incipient. In fact, studies relating international diversification strategy and performance have been mainly focused on North America (Thomas and Eden, 2004; Thomas (2006); Qian et al., 2008; Dos Santos et al., 2008; among others), Europe (Ruigrok and Wagner, 2003; Castellani and Zanfei, 2007; Bobillo et al., 2010), and Asia (Lu and Beamish, 2004; Pangarkar, 2008; Endo and Ozaki, 2010; Chen and Yu, 2012), being almost non-existent in emerging economies that have a highly concentrated ownership and pyramidal ownership structures, in a weak investor protection environment.

We focused on Chile because it is an interesting case study that, on one hand, it has different characteristics compared to developed countries and emerging economies where literature has focused on studying the relationship between international diversification and performance; and, on the other hand, companies in this economy have a high ownership concentration that contributes to form pyramidal ownership structures. In fact, Chile, firstly, is an emerging economy that has a corporate system based essentially on bank financing, where banks have a main role in comparison to capital markets (Fernández, González and Suárez 2010; Fernández 2005); even those companies belonging to economic groups or holdings (diversified companies), that despite the development of internal capital markets, have a close long-term relationship with banks or they own a bank in their respective economic groups. (Majluf et al., 1998). This corporate system eases the establishment of pyramidal ownership structures, and at the same time, contributes to the transfer of wealth from minority shareholders to the controlling shareholder. Second, most common agency conflict is between majority and minority shareholders, which favors expropriation of wealth for the benefit of the first (Santiago-Castro and Brown, 2007). Third, ownership concentration is high and belongs to just one shareholder or business consortium; thus, pyramidal structures that allow excessive control emerge (Lefort and González, 2008; Lefort and Walker, 2000). Fourth, the kind of legal system of anglo saxon countries with more dispersed ownership is dominated by common law system¹, whereas Chile has a civil law system² (La Porta et al., 1997 and 1998). This kind of law has low legal protection for investors compared to a common law system (Becht and Röell, 1999; Bianco and Casavola, 1999; La Porta et al., 1997 and 1998; Volpin, 2002).

Given the above mentioned, our research analyses, on one hand, how the international diversification strategies are related to Chilean firms' performance. Considering a sample of 47 companies listed on the Santiago Stock Exchange during the period between 2003 and 2013, we found an international diversification discount that is consistent with what was found for other kinds of diversification strategies. Secondly, when investigating the relationship between international diversification and performance, we found that they are related through an S-shaped curve, which is consistent for emerging economies. Finally, we investigated how a pyramidal ownership structure moderates the relationship between international diversification and performance, finding that this kind of ownership structure negatively impacts the performance of companies initiating international diversification strategies, and it could be inferred that the controlling shareholder adopts these kinds of strategies to divert wealth from minority shareholders.

Our work contributes to business literature by broadening the empirical evidence about the relationship between international diversification and performance in a small and open emerging economy. Also, we report evidence of an international diversification discount in a South American emerging economy. And further, we report that in economies such as Chile, the relationship between international diversification and performance has an S-shaped curve. Additionally, we show evidence about how pyramidal ownership structures have a negative impact on the relationship between international diversification and performance. Finally, our article extends previous works that have analyzed agency problems of business groups and weaker legal investor protection (Majluf, Silva, and Paredes 2006; Silva and Majluf 2008).

The article proceeds as follows. The next section summarizes the relevant literature and explores the research questions. Section III presents the sample and methodology. Section IV describes the results, and Section V concludes.

2. Analytical framework and hypotheses

¹Mainly the United States and the United Kingdom.

²Italy, Spain, France, Canada and Japan.

2.1 International diversification and firm value

There is a certain consensus in literature that international diversification can be considered as a strategic decision for the company that not only is focused on reducing risks derived from the reduction of demand in the domestic market (Bobillo et al., 2012; Geringer et al., 1989; Hitt et al., 1994), but also as a growth strategy that allows companies to capture opportunities offered by foreign markets (Capar and Kotabe, 2003; Bobillo et al., 2008), and with this the possibility to have competitive advantages sustainable over time (Chin-Chun and Boggs, 2003; Nachum and Zaheer, 2005; Hitt et al., 2006a; Delios et al., 2008). However, empirical evidence shows that the relationship between international diversification and performance is not always linear. In this context, positive linear relationship (Delios and Beamish 1999; Hitt et al., 2006b; Pangarkar, 2008); negative linear (Geringer et al., 2000; 2000; Denis et al., 2002; Lin et al., 2011); U-shaped (Lu and Beamish 2001; Ruigrok and Wagner 2003; Li and Yue, 2008); inverted U-shaped (Hitt et al. 1997; Li and Qian, 2005; Chen-Ho and Kumar, 2010; S-shaped (Contractor et al. 2003; Lu and Beamish, 2004; Bobillo et al., 2010); M-shaped (Lee, 2010; Almodóvar, 2012; Almodóvar and Rugman, 2013); and even without relationship (Dess et al. 1995; Genthon, 2008; Kahloul and Hallara, 2010) have been reported.

A series of factors and/or moderators have been reported to explain the different findings. For instance, the size and age of the company (Contractor et al., 2007; Qian, 2002; Qian et al., 2008; Chen and Tan, 2012), intangible assets (Lu and Beamish, 2004; Bausch and Krist, 2007), institutional environment (Estrin et al., 2008), human capital (Tuppura et al., 2008), and the company's internal and external competitive advantages (Bobillo et al., 2010) have been reported as variables influencing the relationship between international diversification and performance. However, previous studies have been focused on North American companies (Morck and Yeung, 1991; Qian, 2002; Thomas and Eden, 2004; Thomas, 2006; Qian et al., 2008; Dos Santos et al., 2008), European (Grant et al., 1988; Ramírez-Alesón and Espitia-Escuer, 2001; Ruigrok and Wagner, 2003; Castellani and Zanfei, 2007; Bobillo et al., 2010), Asiatic (Delios and Beamish, 1999; Geringer et al., 2000; Lu and Beamish, 2004; Pangarkar, 2008; Endo and Ozaki, 2010; Chen and Yu, 2012), and quite a few studies have considered companies from different countries (e.g., Geringer et al., 1989; Al-Obaidan and Scully, 1995; Contractor et al., 2003).

While recent lines of investigative research are focused on understanding the underlying reasons of the relationship between international diversification and performance more than on analyzing the shape of the curve resulting from the interaction between both variables (Hennart, 2007; Venzin et al., 2008; Ray, 2009), there are still economies where it is not known how this relationship is, even more so in emerging markets that have a highly concentrated ownership and pyramidal ownership structures. Specifically, in Chile there is no evidence as to how international diversification strategy is related to performance, and that is why the expected effect in Chilean companies becomes a purely empirical matter. Therefore, our first hypothesis could be posed as follows:

Hypothesis 1a: It is possible to expect an award for international diversification.

Hypothesis 1b: It is possible to expect a discount for international diversification.

Our second objective is to investigate the shape that adopts the relationship between international diversification and performance. In general, for both emerging and developed economies, the proposal that currently predominates is that which proposes the existence of an S-shaped

relationship between the international diversification degree and performance (Garbe and Richter, 2009)³.

Authors that propose an S-shaped relationship (e.g., Contractor et al., 2003; Lu and Beamish, 2004; Kumar and Singh, 2008; Outreville, 2010, 2012; Tsai, 2014) argue that the benefits and costs of internationalization change between the different states of company's international expansion process (Verbeke and Brugman, 2009; Son et al., 2011). In this model, the existent relationship between the degree of internationalization and performance is negative at very low and very high levels of internationalization, and positive at intermediate levels (e.g., Hitt et al., 2006a; Gaur and Kumar, 2009; Verbeke and Brugman, 2009; Mudambi et al., 2011; Chen and Tan, 2012). In the first state companies must cope with liabilities of newness and foreignness with a negative impact on their performance levels, as the costs derived from implementing an international expansion strategy exceed the benefits. However, after the initial stage, companies get positive returns from foreign markets, as they have knowledge and experience levels that allow them improve their levels of efficiency by better localizing resources. At the same time, these companies are gaining legitimacy in the foreign markets and are able to exploit the opportunities of the market, extend the product life cycle and exert global market power. However, after this growth stage, companies exceed the optimal level of internationalization, which explains why they are not able to respond to foreign market demand, and to cope with this, the costs of transactions, communication, control, and coordination increase, and because of this, companies experience negative returns derived from the international expansion of their operations.

This proposition has an impact on international business literature, since Contractor et al. (2003) and Lu and Beamish (2004) propose that the three-state model is a model or general theory about the relationship between international diversification levels and company performance, because this integrates conflict and divergent results (e.g., Hitt et al., 2006a; Contractor, 2007; Ruigrok et al., 2007; Bowen and Wiersema, 2009; Chen and Tan, 2012). Nevertheless, empirical evidence about the existence of the S-curve is limited and inconclusive (e.g., Hitt et al., 2006a; Bausch and Krist, 2007; Hennart, 2007, 2011; Bowen and Wiersema, 2009; Verbeke et al., 2009). It is argued that the model does not consider in its theoretical development the analysis of internationalization context, especially that which refers to cultural and institutional environment, and it is not able to show the nature of the impact of internationalization dispersion on performance (Son et al., 2011). Despite this, the three-state model is the one that has more theoretical development, and which has been mainly analyzed by researchers (Contractor (2012)). Aside from this, it is possible to suppose that contingency factors could explain why an important part of the latest studies have not concluded the existence of this kind of relationship (e.g., Lin et al., 2011; Chen and Yu, 2012; Hsu et al., 2012; Lampel and Giachetti, 2013; Singla and George, 2013). Considering the above, and that studies have analyzed the existence of an S-shaped relationship have not considered in their samples South American companies, the relationship shape between internationalization diversification strategy and performance is a purely empirical matter. Therefore, our second hypothesis could be posed as follows:

Hypothesis 2a: The existing relationship between international diversification and internationalizing companies performance variables is an S-shaped curve.

Hypothesis 2b: The existing relationship between international diversification and internationalizing companies performance variables is not an S-shaped curve.

³In the last years, some authors have proposed the existence of an M-shaped curve (Lee, 2010; Almodóvar, 2012; Lee, 2013; Almodóvar and Rugman, 2014). However, studies that conclude the existence of an M-shaped curve do not consider in their sample multinational companies, but rather international new ventures (INVs).

2.2 Pyramidal ownership

The traditional argument to explain the formation of pyramidal structures is the separation of cash flow rights from control rights (Almeida and Wolfenzon, 2006). As cash flow rights and control of the main owner are typically used in the definitions of Claessens et al. (2002) and Faccio and Lang (2002), the first is measured by the sum of the products of the ownership proportion along the control chain, whereas the latter is measured as the minimal ownership proportion along the control chain. Thus, literature argues that it is common to adopt a pyramidal ownership structure when there is greater separation of control rights from cash flow rights (Claessens et al., 2000; Almeida and Wolfenzon, 2006), what is known as excess control rights.

Excess control rights are considered as the difference between control rights or voting rights minus cash flow rights (Liu and Tian, 2012), and also as the ratio or leverage defined as cash flow rights to control rights (Djankov et al., 2008; Faccio and Lang, 2001; Paligorova and Xu, 2012). Basically, it has been said that excess control rights represent an opportunity for the controlling shareholders to expropriate private benefits from minority shareholders by transferring companies' resources to others, diverting profits to avoid creditors and the expropriation of corporate opportunities (Bertrand et al., 2002; Johnson et al., 2000; Shyu and Lee, 2009; Yeh et al., 2001). At the same time, excess control rights create strong incentives for the controlling shareholders to expropriate wealth from minority shareholders by diverting resources to themselves at the expense of the latter (Shyu and Lee, 2009). In this context, the literature related to a company's pyramidal ownership structure, international diversification, and performance is almost inexistent.

Chile has a legal system of Civil Law (La Porta et al., 1999; Lefort and Walker, 2000; Demirguc-Kunt and Maksimovic, 2002; Lefort and González, 2008), which is characterized by providing less protection for the external investor and minority shareholder; this made it easier for Chilean companies to have high degrees of ownership concentration throughout the past 20 years (Lefort and Walker, 2000; Espinosa, 2009), mainly in the hands of individual shareholders or well diversified business consortiums, which have given rise to pyramidal structures that allow an excess of control (Lefort and González, 2008; Lefort and Walker, 2000). Consequently, it is not surprising that approximately 68% of non-finance companies listed on the Santiago Stock Exchange are controlled by an important economic group. Structurally, in these groups the most common way of separating voting rights from cash flow rights is through pyramidal structures, which is how approximately one-third of the listed companies are structured (Majluf et al., 1998; Lefort and Walker, 2000, 2007).

Despite the existence of pyramidal ownership structures in Chile, studies in this area have focused mainly on reporting evidence about how ownership concentration (Espinosa, 2009), and business line diversification strategies and the ownership of other companies (Jara-Bertin et al., 2015) impact the performance of Chilean companies, and evidence does not exist about how pyramidal ownership structures impact the relationship between international diversification and performance. Therefore, like the previous hypotheses, investigating the relationships is a purely empirical matter. Therefore, our third hypothesis could be posed as follows:

Hypothesis 3a: Pyramidal ownership structures have a negative impact on the relationship between international diversification and performance of Chilean companies.

Hypothesis 3b: Pyramidal ownership structures have a positive impact on the relationship between international diversification and performance of Chilean companies.

3. Sample and methods

3.1 Sample

Data correspond to a sample of 47 companies listed on the Santiago Stock Exchange during the period between 2003 and 2013. The combination between the included companies and the periods analyzed give an unbalanced panel with 309 observations.

Data corresponding to exports (amount and number of countries) were obtained from the Santiago Chamber of Commerce. Accounting and financial information was obtained from Thomson Reuters and Economática. Information about cash flow rights and control rights was gathered from companies' records and reports. It is worth noting that this procedure was done company by company, as there is no data base in Chile containing this information.

3.2 Variables

3.2.1 Dependent variable

We used market-to-book ratio to measure company performance (PERFORM), which is a Tobin's q proxy. We calculated market-to-book ratio as the total value of assets minus common equity book value plus common equity market value, divided by total value of assets. This way of calculating company value has been widely used in literature (Khanna and Palepu, 2000; Silva, Majluf and Paredes, 2006; Lefort and Urzúa, 2008; Lensink and Van der Molen, 2010; Ammann, Oesch and Schmid, 2011; Singh and Gaur, 2013).

3.2.2 Explanatory variables

International diversification (DIVINT) and excess control rights (pyramidal structure), OWNPIR, are two independent variables used in this work. International diversification is measured, first, by the ratio of foreign sales (export) over total sales (EXPVTAS) and, second, using a logarithm of the number of countries (LNPAIS) where the assessed company exports. Due to the restriction of information in the emerging markets, we did not obtain other measurements of international diversification, such as number of employees abroad over the total number of employees or number of offices abroad over the total number of offices. However, measurements used in this work have been regularly used in literature to measure international diversification (Gaur and Kumar, 2009; Capar and Cotabe, 2003). To measure the potential effect that pyramidal structure has on the relationship between international diversification and company value, we estimated the separation of cash flow rights from control rights. The traditional argument to explain the formation of pyramidal structures is the separation of cash flow rights from control rights (Almeida and Wolfenzon, 2006). Therefore, we calculated the ratio between cash flow rights and control rights as an approximation to pyramidal structure (OWNPIR). Cash flow rights and control rights are estimated using the definition of Claessens et al. (2002) and Faccio and Lang (2002), where cash flow rights are the sum of the product of the ownership proportion along the control chain, and control rights are the minimal ownership proportion along the control chain.

3.2.3 Control variables

We included a series of control variables that potentially influence the generation of company value (Berger and Ofek, 1995; Campa and Kedia, 2002), such as company size (SIZE) measured using a logarithm of total sales; degree of indebtedness (DEB), measured by the ratio of total indebtedness over total assets; sales growth (GROW), measured by the percentage change of total sales; tangibility (TANG), measured by the ratio between total fixed asset over total assets; the age of the company (YEAR), measured using a logarithm of the total age; and ownership concentration (OWN), which represents the percentage of ownership that the main shareholder

has. Lastly, we introduced a set of dichotomous sectoral variables according to the sectoral classification assigned by the Superintendence of Securities and Insurance (DSEC) and a set of temporal dichotomous variables (DAÑO).

3.3 Modeling procedure

We estimated the following models. To investigate whether there is a discount award for international diversification:

$$\begin{aligned} \text{PERFORM}_{i,t} = & \beta_0 + \beta_1 \text{DIVINT}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{DEB}_{i,t} + \beta_4 \text{GROW}_{i,t} + \beta_5 \text{TANG}_{i,t} \\ & + \beta_6 \text{YEAR}_{i,t} + \beta_7 \text{OWN}_{i,t} + \beta_8 \text{DSEC}_{i,t} + \beta_9 \text{DAÑO}_{i,t} + \beta_{10} \mu_{i,t} \end{aligned} \quad (1)$$

To investigate the shape of the relationship between international diversification and performance:

$$\begin{aligned} \text{PERFORM}_{i,t} = & \beta_0 + \beta_1 \text{DIVINT}_{i,t} + \beta_2 \text{DIVINT}_{i,t}^2 + \beta_3 \text{DIVINT}_{i,t}^3 + \beta_4 \text{SIZE}_{i,t} + \beta_5 \text{DEB}_{i,t} \\ & + \beta_6 \text{GROW}_{i,t} + \beta_7 \text{TANG}_{i,t} + \beta_8 \text{YEAR}_{i,t} + \beta_9 \text{OWN}_{i,t} + \beta_{10} \text{DSEC}_{i,t} \\ & + \beta_{11} \text{DAÑO}_{i,t} + \beta_{12} \mu_{i,t} \end{aligned} \quad (2)$$

Finally, to investigate how pyramidal ownership impacts the relationship between international diversification and performance:

$$\begin{aligned} \text{PERFORM}_{i,t} = & \beta_0 + \beta_1 \text{DIVINT}_{i,t} + \beta_2 \text{OWNPIR}_{i,t} + \beta_3 \text{DIVINT} * \text{OWNPIR}_{i,t} + \beta_4 \text{SIZE}_{i,t} \\ & + \beta_5 \text{DEB}_{i,t} + \beta_6 \text{GROW}_{i,t} + \beta_7 \text{TANG}_{i,t} + \beta_8 \text{YEAR}_{i,t} + \beta_9 \text{OWN}_{i,t} + \beta_{10} \text{DSEC}_{i,t} \\ & + \beta_{11} \text{DAÑO}_{i,t} + \beta_{12} \mu_{i,t} \end{aligned} \quad (3)$$

3.4 Endogeneity

An extensive body of literature has highlighted the existence of problems of endogenous selection in corporate diversification models, such as diversification of business lines, ownership of other companies, and performance (Campa and Kedia, 2002; Villalonga, 2004; Miller, 2006; Jara-Bertin et al., 2015). On the other hand, business literature has reported that the strategy of international diversification is a decision that the company makes with the intention that it will take advantage of the opportunities offered by foreign markets (Capar and Kotabe, 2003; Bobillo et al., 2008), thus the possibility of having competitive advantages sustainable over time (Chin-Chun and Boggs, 2003; Nachum and Zaheer, 2005; Hitt et al., 2006a; Delios et al., 2008), improving its performance. Therefore, it could be considered that the adoption of an international diversification strategy and increase in company performance are closely related, inferring an endogenous relationship between these variables. Given this endogenous relationship, we can expect that both EXPVTAS and LNPAIS are correlated with the error term of equations (1), (2) and (3), respectively, and because of this, estimated coefficients β_i may present some bias derived from the presence of the model's endogenous selection problems.

To address such problems, we estimated the equation (1, 2 and 3) through panel data methodology. This methodology allows us to control unobservable heterogeneity, given estimators with a high efficiency compared to other estimation models (Arellano, 2003; Baltagi, 1995; Alonso-Borrego and Arellano, 1999). Specifically, to address endogenous problems, we used the GMM estimator system developed by Blundell and Bond (1998) and Bond (2002). The

GMM System (GMM-sys) is the augmented version of GMM outlined in Arellano and Bover (1995), and fully developed in Blundell and Bond (1998) who more precisely articulated the necessary assumptions for this augmented estimator and tested it with Monte Carlo simulations. Lagged levels are often poor instruments for first differences, especially for variables that are close to a random walk. Thus, in levels, the original equations can be added to the system, and the additional moment conditions could increase efficiency. In these equations, predetermined and endogenous variables in levels are instrumented with suitable lags of their own first differences.

We used independent variables with delay as differential instruments for the equations in levels. With this estimation method, the estimators' consistency critically depends on the absence of second-order serial autocorrelation of residues and instrument validity (Arellano and Bond, 1991). Consequently, we calculate in our estimations a statistical test of absence of second-order serial autocorrelation.

4. Results and Discussion

4.1 Descriptive analysis

Panel A of Table 1 shows general statistics of variables in study, observation without data were excluded and outliers were deleted. Panel B shows means, medians and standard deviations of segmented variables according the international diversification criteria (upper and lower third). Finally, Panel C shows means, medians and standard deviations of segmented variables according the pyramidal ownership criterion (upper and lower third).

In relation to international diversification measures, as shown in Table 1 Panel A, it can be seen that exports represent 17% of sales and, on average, go to 16.7 countries. Generally speaking, Chilean companies exporting have good performance, are 22 years old, have positive growth rates, show a high concentration of ownership and certain pyramidal ownership structures, the latter consistent with what Silva, Majluf and Paredes (2006) reported for a sample of Chilean companies in 2000.

Table 1 Panel B, shows that more internationally diversified companies have, on average, better performance compared to companies with less diversified sales. At the same time, they also have lower levels of debt, less sales, less capital expenditure, lower growth rates on sales and are less concentrated. In relation to pyramidal ownership, Table 1, Panel C shows that, on average, companies with this kind of structure are concerned about performance and are less diversified. They are not so different from those companies that do not have a pyramidal ownership structure in debt levels, capital expenditure, sales, and growth. However, they are younger and with more concentrated ownership. Younger companies have less formal governance structures, so they are candidates for having a highly concentrated ownership that can lead to pyramidal ownership structures. This combination of factors makes us think that companies having a pyramidal ownership structure could use this kind of structure to divert wealth from minority shareholders, through, in this case, complex organizational processes such as the international diversification process, but concerning performance.

4.2 International diversification and company value

Columns (1) and (4) of Table 2 show the results of estimations for equation (1), where the incidence on performance of a company with an international diversification strategy is analyzed. A clear negative relationship between the degree of international diversification and performance of Chilean firms is observed. As well as previous studies that analyzed the impact that diversification corporate strategies have (in business lines and in the ownership of other

companies), our results show the existence of an international diversification discount of 15% (22.8% when using EXPVTAS and 7.28% when using LNPAIS). This diversification discount could be explained by costs associated with the internationalization process, which are higher than benefits.

Columns (2), (3), (5) and (6) of Table 2 show the results of the estimations for equation (2), where the curve shape of the relationship between international diversification strategy and performance is analyzed, quadratic in first instance and then cubic.

We found a relationship in the shape of an S-curve between international diversification and company performance. At the initial stage of the internationalization process, costs are higher than benefits; however, after this initial stage, companies gain benefits from being internationally diversified because, in this stage, they have enough knowledge and experience to allow them to improve their levels of efficiency by better localizing the resources and/or gaining legitimacy in the foreign markets. After this growth stage, companies exceed the optimal level of internationalization, which explains why they are not able to respond to the foreign market demand, and to cope with this, there are increases in transaction, communication, control, and coordination costs, and because of these, they receive negative returns derived from the international expansion of their operations.

In addition, a company's age (YEAR), indebtedness level (DEBT), sales growth (GROW) and ownership concentration (OWN) are negatively related to the performance of companies initiating an international diversification strategy. That is to say, the better performance of these kinds of companies is associated with younger companies that are less indebted, with lower sales growth and have less concentrated ownership. This last point has not been very well studied in international business literature, and it is an important characteristic of emerging economies, especially in those economies having weak protection for investors and high ownership concentrations. These two characteristics ease the conformation of pyramidal ownership structures in which the controlling shareholder can divert wealth from minority shareholders using a series of corporate strategies such as business line diversification, diversification of other companies ownership (Jara-Bertín, M. et al., 2015) and, possibly, international diversification.

At the end of Table 2 are the model statistical adjustments, chi-square, whose p-values are significant at 1%. Aside from this, validating the estimators' consistency, critically depends on the absence of second-order serial autocorrelation of residuals and instrument validity, and we present p-values of first- and second-order autocorrelations AR(1) and AR(2), respectively where the test for AR(1) is rejected at the 5% level, and the test for AR(2) is satisfactory in this case at high p-values. In relation to overidentifying restrictions, the Sargan test shows satisfactory p-values at the 1% level.

4.3 Pyramidal ownership

Table 3 shows the results of estimations for equation (3) where the impact of pyramidal ownership on the relationship between international diversification and performance is analyzed. Interestingly, the international diversification discount is not a discount itself, but when controlling pyramidal ownership it is transformed into a statistically significant and positive award for the case of EXPVTAS (column (1)), even though it is not statistically significant for the case of LNPAIS (column (2)). It can be inferred that, in fact, companies from an emerging economy like Chile initiate an international diversification strategy with the objective of, initially, improving their performance. Nevertheless, the high ownership concentration that eases the conformation of pyramidal ownership structures will allow the controlling shareholder to divert wealth from minority shareholders. This is eased by the high ownership concentration that firms with pyramidal ownership show (see Table 1, Panel C). Variables

OWNPIR*EXPVTAS and OWNPIR*LNPAIS show the negative effect of pyramidal ownership structures on the relationship between international diversification and performance. Given the above, an international diversification strategy can be a means used by controlling shareholders to pursue their own interests, even at the expense of other shareholders' interests, trying to show good company performance. In this context, it is important to note that, in the first place, Chilean capital markets are much less attractive than those of developed countries. Therefore, monitoring complex corporate strategies, such as international diversification processes, is very difficult for both the market and minority shareholders, even more so given the existence of pyramidal structures.

To investigate this finding, we divided the sample into three subsamples. The first considers companies where excess control rights equal one. This means that voting rights are equal to cash flow rights, which implies the absence of a pyramidal ownership structure. The second subsample corresponds to those companies whose excess control rights are less than one and greater than the median for the industry in the years in which the company participated in the study. This implies a mild pyramidal ownership structure. The last group corresponds to those companies whose excess control rights are less than the industry median industry in the years in which the company participated in the study. This implies a high pyramidal ownership structure. We focused on the first and third groups to observe the direct effect of pyramidal ownership on the relationship between international diversification and performance. Columns (3) and (4) of Table 3 show the results when considering EXPVTAS and LNPAIS variables for Group 1 (pyramidal structure absence), whereas columns (5) and (6) show the results when considering EXPVTAS and LNPAIS variables for Group 3 (high pyramidal structure).

For Group 1 (columns (3) and (4)) the results show a negative impact, that is to say no statistical significance of pyramidal ownership and ownership concentration on the performance of companies, initiating an international diversification strategy. However, when considering the group of companies with a high pyramidal ownership structure, the results (columns (5) and (6)) show a negative impact, statistically significant for both pyramidal ownership and ownership concentration on the performance of companies, initiating an international diversification strategy. These results make it evident that in emerging economies with weak shareholder protection, high ownership concentration, and high pyramidal ownership structure, international diversification strategies could be motivated not by the purpose of improving the company's performance, but with the purpose of diverting wealth from minority shareholders to the controller. This opens a line of research and reconsiders internationalization processes theories, which, in some cases, as the above mentioned, can be considered as tunneling activity.

At the end of Table 3 are the model's statistical adjustments, chi-square, whose p-value are significant at 1%. Aside from this, to validate the estimators' consistency, which critically depends on the absence of second-order serial autocorrelation of residuals and instrument validity, we present p-values of first- and second-order autocorrelations AR(1) and AR(2), respectively where the test for AR(1) is rejected at the 1% level, and the test for AR(2) is satisfactory in this case at high p-values, with the exception of equations three and four. In relation to overidentifying restrictions, the Sargam test shows satisfactory p-values at the 1% level.

4. Conclusions

Our work is the first to analyze the impact of international diversification on the performance of South American firms. For this we considered Chile, a country with high ownership concentration, relatively low legal investor protection and with important pyramidal ownership structures of its firms. Given the framework of high ownership concentration of Chilean companies, not only is the relationship between international diversification and company value

studied, but also the extent to which this relationship is moderated by pyramidal ownership structure.

Considering a sample of 47 companies listed on the Santiago Stock Exchange during the period between 2003 and 2013, we found, in the first place, an international diversification discount of 15%. Secondly, when investigating the relationship between international diversification and performance, we found that they are related through an S-shaped curve, which is consistent for emerging economies. Third, given the characteristics of emerging economies such as Chile, we investigated how a pyramidal ownership structure moderates the relationship between international diversification and performance, finding that this kind of ownership structure negatively impacts the performance of companies initiating international diversification strategies, and it could be inferred that the controlling shareholder adopts this kind of strategy to divert wealth from minority shareholders.

The high ownership concentration of Chilean companies, aggravated by the use of pyramidal ownership structures, may allow the controlling shareholder, by using a corporate strategy such as international diversification, to extract private benefits. Thus, our results infer, on one hand, that pyramidal structures can be associated with inefficient use of resources and, this way, reduce the company's performance. On the other hand, an international diversification strategy can simply be a tunneling activity in those companies reporting high pyramidal ownership structures.

Our results may be interesting for researchers, professionals and those involved with public policy. For the academic world, this work contributes to literature by broadening the empirical evidence on the effect that international diversification strategies have on the performance of firms in emerging regions, where studies in this area have been incipient. In addition, we showed, for the firms first time, the curve shape of the relationship between international diversification and performance in a South American economy. For professionals and investors, we reported how pyramidal ownership structures affect company valuation, and thus we suggest the need to consider ownership structure when valuing companies. Lastly, policymakers can find in our article some keys to improve regulations in order to have better corporate governance that seeks to minimize the possibilities of wealth diversion from minority shareholders to the controller.

Future related lines of research could expand this study's analysis to a wide sample of emerging countries. This way, we could have a better understanding of national and international factors that make international diversification strategies more valuable for companies, and, at the same time, investigate the determinants that explain the curve shape of the relationship between international diversification and performance.

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Table 1: Descriptives.

Composition of the sample and main descriptive statistics. Panel A shows the mean, median and standard deviation of each variable for the total sample. Panel B shows the mean, median and standard deviation for each divided variable according to the criterion of the higher-third versus the lower-third of international diversified and non-international diversified companies, using the criterion of total exports over total sales. Panel C shows the mean, median and standard deviation of each divided variable according to the criterion of companies with pyramidal ownership (excess control rights less than one) and companies without pyramidal ownership (excess control rights equal to one).

Panel A:

	<u>Mean</u>	<u>Median</u>	<u>Desv. St</u>
PERFORM	1.546	1.301	0.749
EXPVTAS	0.170	0.080	0.232
N° COUNTRIES	16.712	9.000	22.549
DEB	0.422	0.415	0.170
SALES	18.731	18.745	1.683
TANG	0.686	0.730	0.176
AGE	22.258	22.945	5.941
GROW	0.198	0.093	0.640
OWN	0.487	0.492	0.224
VOTING RIGHTS	0.421	0.429	0.225
CASH FLOW RIGHTS	0.357	0.302	0.223
EXCESS OF VOTING RIGHTS	1.312	1.000	0.545
OBSERVATIONS	309		

Panel B:

	Firm more Div. Int.			Firm less Div. Int.			Test diff. (p-value)	
	Mean	Median	St Dev.	Mean	Median	St Dev.	Mean	Median
PERFORM	1.59	1.28	0.80	1.45	1.26	0.73	0.191	0.676
EXPVTAS	0.43	0.33	0.24	0.00	0.00	0.00	0.000	0.000
N° COUNTRIES	32.79	23.00	30.80	2.54	1.00	2.54	0.000	0.000
DEB	0.37	0.36	0.14	0.43	0.44	0.13	0.002	0.001
SALES	18.08	18.11	1.33	19.41	19.50	1.54	0.000	0.000
TANG	0.58	0.59	0.15	0.76	0.80	0.17	0.000	0.000
AGE	21.28	21.16	5.17	22.81	24.54	6.71	0.067	0.001
GROW	0.17	0.09	0.32	0.21	0.10	0.61	0.279	0.477
OWN	0.44	0.44	0.21	0.55	0.55	0.24	0.001	0.002
VOTING RIGHTS	0.35	0.30	0.16	0.52	0.49	0.26	0.000	0.001
CASH FLOW RIGHTS	0.29	0.23	0.18	0.43	0.38	0.25	0.000	0.000
EXCESS OF VOTING RIGHTS	1.39	1.00	0.59	1.32	1.00	0.59	0.350	0.018
OBSERVATIONS	103			103				

Panel C:

	Firms with high Pyramidal Ownership			Firms without Pyramidal Ownership			Test diff. (p-value)	
	Mean	Median	St Dev.	Mean	Median	St Dev.	Mean	Median
PERFORM	1.57	1.33	0.84	1.54	1.30	0.75	0.771	0.682
EXPVTAS	0.10	0.06	0.11	0.15	0.07	0.21	0.011	0.628
N° COUNTRIES	11.43	6.00	14.90	15.60	8.00	21.88	0.043	0.068
DEB	0.40	0.42	0.15	0.42	0.42	0.17	0.250	0.992
SALES	18.50	18.40	1.67	18.70	18.71	1.67	0.250	0.267
TANG	0.73	0.72	0.17	0.69	0.74	0.17	0.021	0.083
AGE	20.80	21.49	6.51	22.18	23.48	5.99	0.032	0.026
GROW	0.20	0.09	0.59	0.21	0.10	0.67	0.863	0.783
OWN	0.56	0.58	0.21	0.50	0.50	0.23	0.009	0.000
VOTING RIGHTS	0.43	0.43	0.23	0.42	0.42	0.23	0.707	0.726
CASH FLOW RIGHTS	0.29	0.20	0.21	0.34	0.29	0.22	0.022	0.035
EXCESS OF VOTING RIGHTS	1.67	1.46	0.63	1.37	1.00	0.58	0.000	0.000
OBSERVATIONS	143			258				

Table 2 International diversification and company performance

Estimated coefficients [z statistic] of estimations of equations (1) and (2) by GMM estimator developed by Blundell and Bond (1998). The dependent variable is company performance "I" in the year "t" (PERFORM). The explicative variable is international diversification (DIVINT). To see the shape, the curve is squared and then cubed. Control variables are company size (SIZE), measured using a logarithm of total sales; degree of indebtedness (DEB) is measured by the ratio of total indebtedness over total assets; sales growth (GROW) is measured by the percentage change of total sales; tangibility (TANG) is measured using the ratio between total fixed asset over total assets; the age of the company (YEAR) is measured as the logarithm of the total age of the company; and ownership concentration (OWN) represents the percentage of ownership that the main shareholder has. We controlled by temporary and sectorial effects. Wald Chi2 is a test for the joint significance of coefficients; *** indicates a level of significance for a contrast of two tails less than 1%; ** less than 5%; and * less than 10%. Standard errors in parentheses.

<i>Dependent Variable: Performance</i>						
	(1)	(2)	(3)	(4)	(5)	(6)
EXPVTAS	-0.2281*** (0.0649)	-0.4997*** (0.1403)	-1.9281*** (0.5063)			
EXPVTAS ²		0.4610*** (0.1693)	6.2524*** (1.6032)			
EXPVTAS ³			-4.8995*** (1.1867)			
LNPAIS				-0.0728*** (0.0096)	-0.1475*** (0.0378)	-0.0951*** (0.0253)
LNPAIS ²					0.0200 (0.0149)	0.0906*** (0.0172)
LNPAIS ³						-0.0250*** (0.0036)
YEAR	-0.9687*** (0.0903)	-1.3824*** (0.0934)	-1.0162*** (0.1033)	-0.9397*** (0.0258)	-1.3513*** (0.0899)	-0.9701*** (0.0927)
SIZE	0.0358 (0.0274)	0.1596*** (0.0403)	0.0289 (0.0188)	0.0375** (0.0152)	0.1554*** (0.0421)	0.0698* (0.0361)
DEB	-0.0812*** (0.0136)	-0.1907*** (0.0493)	-0.1559** (0.0744)	-0.1472** (0.0729)	-0.1716*** (0.0572)	-0.1372** (0.0549)
TANG	-0.1842*** (0.0566)	0.1085* (0.0571)	-0.0681 (0.0624)	-0.0645 (0.0900)	0.2116* (0.1105)	-0.0665 (0.0903)
GROW	-0.0200*** (0.0026)	-0.0114 (0.0106)	-0.0165*** (0.0038)	-0.0115*** (0.0043)	0.0132 (0.0153)	-0.0126*** (0.0048)
OWN	-0.1154*** (0.0107)	-0.5613*** (0.0471)	-0.1189*** (0.0250)	-0.1257*** (0.0244)	-0.5694*** (0.0303)	-0.1082*** (0.0150)
L.perform	0.0857*** (0.0096)	-0.1007*** (0.0092)	0.0562*** (0.0180)	0.0680*** (0.0089)	-0.1587*** (0.0202)	0.0402*** (0.0154)
Observations	199	199	199	199	199	199
Nº of firms	36	36	36	36	36	36
Chi2 p-value	0	0	0	0	0	0
Sargan p-value	0.000	0.000	0.000	0.000	0.000	0.000
ar1	-2.758	-2.397	-2.691	-2.842	-2.210	-2.794
Ar(1) p-value	0.005	0.016	0.007	0.004	0.027	0.005
Ar(2) p-value	0.552	0.490	0.958	0.674	0.276	0.557

Table 3. Pyramidal ownership, International diversification and company performance.

Estimated coefficients [z statistic] of estimations of equation (3) by GMM estimator developed by Blundell and Bond (1998). The dependent variable is company performance “*i*” in the year “*t*” (PERFORM). Explicative variables are international diversification (DIVINT) and pyramidal ownership (OWNPIR). Control variables are company size (SIZE) measured using a logarithm of total sales; degree of indebtedness (DEB) is measured by the ratio of total indebtedness over total assets; sales growth (GROW) is measured by the percentage change of total sales; tangibility (TANG) is measured by the ratio between total fixed assets over total assets; the age of the company (YEAR) is measured as the logarithm of total age of the company; and ownership concentration (OWN) represents the percentage of ownership that the main shareholder has. We controlled by temporary and sectoral effects. Wald Chi2 is a test for the joint significance of coefficients; *** indicates a level of significance for a contrast of two tails less than 1%; ** less than 5%; and * less than 10%. Standard errors are in parentheses.

<i>Dep. Variable: Performance</i>	(1)	(2)	(3)	(4)	(5)	(6)
EXPVTAS	0.4754** (0.2290)		3.7303 (7.6429)		0.4242 (0.3196)	
OWNPIR	-472.549 -1,603.268	280.865 -1,744.577	-135.2927 (975.7348)	-1,234.7769 (763.9768)	208.7359 (170.2325)	160.8001 (192.2680)
OWNPIR*EXPVTAS	-0.5864*** (0.1754)		-2.6174 (4.2623)		-0.5219*** (0.1818)	
LNPAIS		0.0651 (0.0590)		0.0241 (0.1297)		0.0329 (0.0382)
OWNPIR*LNPAIS		-0.1165** (0.0468)		-0.0719 (0.0712)		-0.0957*** (0.0290)
YEAR	-0.9797*** (0.0836)	-0.9485*** (0.1103)	-1.6680*** (0.4821)	-1.6007*** (0.4112)	-1.3884*** (0.1247)	-1.4773*** (0.1043)
SIZE	0.0269 (0.0239)	0.0414 (0.0358)	0.1626* (0.0859)	0.1087 (0.0733)	0.0800** (0.0370)	0.1560*** (0.0419)
DEB	-0.1340** (0.0665)	-0.1438 (0.0937)	0.0415 (0.6837)	0.1275 (0.7751)	-0.6382*** (0.0828)	-1.0343*** (0.2159)
TANG	-0.0963 (0.0792)	-0.1791** (0.0883)	0.1979 (0.5832)	-0.2528 (0.6391)	-0.1103 (0.0673)	-0.1066 (0.0739)
GROW	-0.0215*** (0.0024)	-0.0130** (0.0058)	-0.0423*** (0.0113)	-0.0348*** (0.0106)	-0.0302*** (0.0044)	-0.0228*** (0.0053)
OWN	-0.1222*** (0.0232)	-0.1175*** (0.0306)	0.0300 (0.1871)	0.0583 (0.1331)	-0.1885** (0.0772)	-0.1975*** (0.0234)
L.perform	0.1197*** (0.0220)	0.0570*** (0.0176)	0.0351 (0.1878)	-0.4984** (0.2513)	0.1479*** (0.0242)	0.0389 (0.0255)
Observations	199	199	92	92	178	178
Nº of firms	36	36	15	15	35	35
Chi2 p-value	0	0	0	0	0	0
Sargan p-value	0.000	0.000	0.027	0.017	0.000	0.000
Ar(1) p-value	0.005	0.005	0.219	.	0.009	0.013
Ar(2) p-value	0.495	0.697	.	0.337	0.731	0.719