Understanding and Modeling the Minority Shareholders in the Chilean Capital Market

ABSTRACT

In this research, the different types of minority shareholders are studied and horizontal asymmetry is further investigated to characterize these investors and to identify the causal relations between these characteristics and the asymmetry evaluated through the spread (bid-ask). In Chile, the characterization of minority shareholders is interesting due to the property concentration, the legal framework that protects minority investors, and the accounting rules applied to companies that issue public securities.

Thus, this study is descriptive and explanatory in nature and combines primary and secondary information sources. It starts with the characterization of minority shareholders for the 2013 and 2015 terms. Then, a model is proposed to enable the existing relations between the characteristics of such investors and the level of information asymmetry, as measured by the Santiago Stock Exchange (*Bolsa de Comercio de Santiago*) shares spread with intraday data for the 2013 term, to be studied.

The results provide evidence of an existing inverse relationship between the number of minority shareholders in the year 2013 and the information asymmetry for the same term. Nevertheless, there is no significant relationship between the number of minority shareholders who are legal persons and information asymmetry.

Keywords: information asymmetry, spread (bid-ask), minority shareholders.

INTRODUCTION

Among minority investors, we can distinguish those that can be ranked as professionals from others who are non-professionals (Lachmann, Worhmann, and Wompener, 2011). The board's performance is a key factor for investing decisions, although it is tempered by investor types; regarding professionals, these outweigh the directorate's performance, although they will take extra risks that are not undertaken by non-professionals (Sharma, 2006). Legal persons, who represent a large chunk of corporations' shareholders, can normally be classified as non-professionals, whereas legal entities, established to manage investments, can be classified as professionals. This distinction is important due to the analysis they conduct of the information that they receive, which therefore affects the shares' price and the spread.

Information asymmetry in markets has been a widely studied theme in the literature because of the effect it has on the efficient functioning and the correct assignment of resources, as directed by financial theory (Botosan and Plumlee, 2002; Francis, Lafond, Olsson, and Shipper, 2005; Hail, 2010; Leuz and Verrecchia, 2000). There are also problems of information asymmetry between controllers and minority shareholders (Lefort, 2008). The spread (bid-ask) is an information asymmetry measure that is widely used in the literature and that increases as the

market detects players, for example, stock brokers in possession of profuse information (Glostenand Milgrom, 1985). In Chile, there are important institutional investors that are generally considered minority shareholders, for example, the Pension Fund Managers (AFP), insurance companies, mutual funds, and others that impact the market's liquidity. Institutional investors influence securities liquidity (Cao and Petrasek, 2014). In the American market, it has been demonstrated that liquidity can grow with institutional investors but can decrease when property is concentrated in only a few institutional investors (Rubin, 2007).

There is accessible evidence in the literature of the relationship between the spread and information asymmetry; nevertheless, it does not remain constant during the entire transactional phase. Some authors have demonstrated that this relationship changes over different time intervals during the day, with major changes occurring at the start of the stock market, decreasing around noon, and increasing again during the last trading hours (Tannous, Wang, and Craig, 2013).

The share ownership concentration is related to liquidity, which is an alternate method of measuring information asymmetry. Thus, we can state that it is another agent that affects it. Similarly, Hernández and Parro (2004) show that the share ownership concentration in the Chilean market is a key agent in explaining the lack of liquidity. The Chilean equity market is highly concentrated. The first stockholder accounts for 39% of share ownership, and the first three stockholders account for 58%.

In the literature, there is generally no differentiation among the different types of minority shareholders, although an individual who has less than 1% of the ownership is not the same as a mutual fund that owns the same percentage.

The Securities and Insurance Superintendence, in its Financial Education Portal, defines a minority shareholder as "any person who, by themselves or in conjunction with other persons with whom there is a joint operation agreement, owns less than 10% of the voting shares in a corporation, provided that this percentage will not allow a board director to be appointed".

Chilean companies, many of them family owned, tend to keep control through a high shareholder ownership, and therefore, when new projects arise, they tend to appeal to bank financing, bond issuing, and credits between related companies (Buchuk, Larrain, Muñoz, and Urzúa, 2014). Issuing bonds entails a signal issued to the market. In addition, the instrument's issuing process requires information delivery, which is not the case with companies that do not assume this type of financing. Therefore, it seems reasonable that this affects information asymmetry.

Different investor types behave differently. They may assume qualitatively diverse risks (Sharma, 2006). Therefore, we can infer that such behavior would impact the spread. In such an environment, it is interesting to study the relationship between information asymmetry and minority shareholders. As defined by the Securities and Insurance Superintendence, minority shareholders are those who have less than 10% of the shareholder ownership. In Chile, there are different types of minority shareholders: i) investment companies, real estate, and consulting firms; ii) legal persons; iii) mutual funds and family compensation funds; iv) Pension fund managers (AFP); v) foundations; vi) insurance companies, banks, stock brokers, management, and associations; and vii) others, for example, religious congregations, estates, etc.

Based on this literature review, the following hypotheses can be proposed:

Hypothesis 1: The higher the minority shareholder participation in the company's ownership is, the lower the information asymmetry in the capital market.

Hypothesis 2: The higher the rate of participation by minority shareholders as legal persons in the company's ownership is, the lower the information asymmetry in the capital market.

This paper contributes to the literature by differentiating between different types of minority shareholders, which is a relevant difference in regard to other studies that pack all minority shareholders into one set. In addition, the investigation is conducted in a highly concentrated and pyramidal structured market with legislation that attempts to protect minority shareholders, for example, forcing a 30% dividend distribution of corporate benefits.

METHODOLOGY

The methodology used is descriptive and inferential, and primary and secondary data are used for the 2013 and 2015 periods. The empirical analysis is conducted with a sample composed of 42 companies that have had a continued presence in the Santiago Stock Market (IPSA) for a time series from 2007 to 2013.

First, minority shareholders in the Chilean capital markets for the 2013 and 2015 terms are categorized using an exploratory analysis as well as the evolution in time of their composition (Table 1): i) investment companies, real estate companies, real estate, and consulting firms; ii) legal persons; iii) mutual funds and family compensation funds; iv) pension fund managers (AFP); v) foundations; vi) insurance companies, banks, stock brokers, management, and associations; and vii) others.

An exploratory analysis of the information asymmetry in the Chilean capital market is also conducted (Table 1), using the Santiago Stock Exchange stock spread with intraday (between 11:00 and 14:00) data for the 2013 term as a proxy for this variable. Two measurements are considered for the calculation: i) the annual average of the difference in prices (the ask price (of the buyer) and the bid price (of the seller)), divided by their medium value (spread_ a_ b_ medium); and ii) the natural logarithm of the difference in prices (the ask price (of the buyer) and the bid price (of the seller)) (spread_ lna_lnb_medium). To that end, the medium is used as a measure of the central tendency of the series, in addition to the standard deviation as a dispersion measure.

The methodological analysis continues with the study of the possible existing relations between minority shareholders and the level of information asymmetry. To that end, different tests are performed: variance homogeneity, equality of means (analysis of variance (ANOVA) of a factor), and correlation analysis.

Finally, a cross-sectional model is developed to quantify the existing relations between the variables and information asymmetry, as measured by the spread (bid ask). The data for this analysis comprise the 2007-2015 period.

RESULTS

Table 1 shows that, regarding the case of information asymmetry, as measured through the spread, the magnitudes of the variables are very homogeneous, not presenting very different values in relation to their average value and standard deviation, regardless of the form by which the spread is calculated. However, in regard to the variables related to the characterization of minority shareholders, in 2013 and 2015, the results are somewhat different, showing a wide investor presence of the *legal persons* type for both 2013 and 2015, representing almost 90% and 88% of the total minority shareholders in the sample, respectively.

Table 1. Descriptive analysis of the companies in the sample

Variable	Media	Mediana	Moda	Desviación	Mínimo	Máximo
spread_a_b_medio_2013	0.0142114	0.01036068	0.0019267[a]	0.0130312	0.001927	0.066236
spread_lna_lnb_2013	0.0143679	0.01036208	0.0019267[a]	0.013405	0.001927	0.067087
sociedad_inversiones_inmobiliarias_asesorias_2013	96.47619	73.5	32	83.754938	9	361
personas_naturales_2013	2495.0952	1009.5	77[a]	4874.4483	77	26902
fondos_mutuos_cajas_compensacion_2013	29	28.5	0	25.330017	0	80
afp_2013	21.047619	23	28	18.680827	0	119
fundaciones_2013	4.6666667	3.5	0	5.4265232	0	32
aseguradoras_bancos_corredores_2013	52.714286	52	42	14.283345	28	90
otras_2013	83.571429	32	21	117.39347	5	469
sociedad_inversiones_inmobiliarias_asesorias_2015	75.142857	54	0	73.757537	0	314
personas_naturales_2015	1739.0714	666.5	0[a]	2874.8481	0	15058
fondos_mutuos_cajas_compensacion_2015	23.785714	13.5	0	26.114696	0	87
afp_2015	14.761905	15.5	0	11.59228	0	30
fundaciones_2015	2.952381	1.5	0	3.3854234	0	12
aseguradoras_bancos_corredores_2015	34.285714	32.5	26[a]	20.100098	0	82
otras_2015	81.714286	29	0	121.22692	0	514

Note: (a). There are several trends. The lesser value is shown.
Source: By the author.

On average, *foundations* show a lesser number of minority shareholders for both 2013 and 2015. Table 1 shows that the average number of minority shareholders in 2015 is always smaller than that in 2013. For example, in 2013, on average, there were 2,495 legal persons who were minority shareholders, whereas in 2015, this figure decreased to 1,739. The same holds true for the other minority shareholders categorized in this study. Generally, the average number of minority shareholders has decreased by as much as 30%.

The results of the variance homogeneity analysis, using the Levene statistical test applied to the set of minority shareholders for the periods of 2013 and 2015 (Table 2), shows a rejection of the

invalid hypothesis of variance equality, concluding that, in the case of the group of minority shareholders in both 2013 and 2015, there would be a difference among the population variances.

Table 2. Variance homogeneity test

	Levene statistical test	***gl1***	***gl2***	***Sig.***
2013 Shareholders	19.501	6	287	.000
2015 Shareholders	29.805	6	280	.000

Source: By the author.

To contrast the null hypothesis that the averages of minority shareholders for 2013 and for 2015 regarding they type of shareholder are the same (for each term), as opposed to the alternative that at least the average in a group is different from the others, an ANOVA test is conducted (Table 3).

Table 3. ANOVA test

		Sum of Squares	***gl***	***Quadratic Average***	***F***	***Sig.***
2013 Shareholders	Inter-groups	215870597.279	6	35978432.880	10.590	.000
	Intra-groups	975072918.190	287	3397466.614		
	Total	1190943515.469	293			
2015 Shareholders	Inter-groups	106841668.230	6	17806944.705	14.812	.000
	Intra-groups	336618128.976	280	1202207.603		
	Total	443459797.206	286			

Source: By the author.

The results in Table 3 reveal that, regarding the case of minority shareholders in both 2013 and 2015, the null hypothesis of the equality of averages of each of the seven types of minority shareholders is rejected. Therefore, it is not possible to state that the types of minority shareholders are the same for each term of analysis.

Regarding the correlation analysis, initially, a general study is conducted to identify the possible associations between minority shareholders (2013 and 2015) and the information asymmetry in 2013 (Table 4). Then, this same analysis is conducted but disaggregating the minority shareholders for each of the seven categories.

Table 4. Shareholders/information asymmetry correlations

		Shareholders 2013	***Shareholders 2015***	***spread_a_b_average_2013***	***spread_lna_lnb_2013***
2013 Shareholders	Pearson correlation	1	0.600**	-0.279	-0.278
	Significance		0.000	0.073	0.075
	N	294	287	42	42
2015 Shareholders	Pearson correlation	0.600**	1	-0.178	-0.178
	Significance	0.000		0.264	0.266
	N	287	287	41	41
2013 spread_a_b_average	Pearson correlation	-0.279	-0.178	1	0.999**
	Significance	0.073	0.264		0.000
	N	42	41	42	42

spread_lna_lnb_2013	Pearson correlation	-0.278	-0.178	0.999**	1
	Significance	0.075	0.266	0.000	
** Correlation is significant at the 0.01 level.					

Source: By the author.

Table 4 may suggest that a direct correlation exists between the number of minority shareholders for the years 2013 and 2015, at a significance of 0.01. The same applies to the two information asymmetry measures (spread_a_b_medium, spread_lna_lnb) for 2013, which makes much sense, given that, mathematically, the equation is similar. However, there is not a proper level of adequate significance to indicate that there would be a level of association between minority shareholders in 2013 and information asymmetry for the same term. Nonetheless, it is interesting to analyze the direction of this association (inverse), which would mean that, as more minority shareholders are found in each of the companies in the sample, the less information asymmetry there exists in the market, which is consistent with what has been shown in the literature review.

Table 5 shows the result of the correlation analysis for each type of minority shareholder for the 2013 term and the information asymmetry for the 42 companies in the sample for the 2013 term. At first glance, it is possible to perceive the inverse relationship between the information asymmetry measured through the spread and the different minority shareholder types identified, which is consistent with the global analytical results presented in Table 5 and in the studied literature. However, the meaningful associations are between information asymmetry (independent of its measurement pattern) and the following categories: investment companies, real estate, consulting firms, mutual funds, family compensation funds, insurance companies, banks, stock brokers, management, and associations, to a greater extent (significant at the 0.01 level).To a lesser extent, there is a meaningful association between information asymmetry and the categories: AFP and foundations (significant at the 0.05 level).There is a non-existing relationship between information asymmetry and the minority shareholders categories of sole proprietors and others.

Table 5. Pearson correlations of shareholders by category/information asymmetry and its bilateral significance for the 42 companies.

		spread_a_b_average_2013	spread_lna_lnb_2013	Investing-companies_real_estate_consulting_2013	legal_persons_2013	mutual_funds_compensation_funds_2013	afp_2013	foundations_2013	Insurance_companies_banks_stockbrokers_2013	other_2013
spread_a_b_average_2013	Correlation	1	0.999**	-0.508**	-0.201	-0.622**	-0.348*	-0.325*	-0.642**	-0.279
	Sig.		0.000	0.001	0.202	0.000	0.024	0.035	0.000	0.073
spread_lna_lnb_2013	Correlation	0.999**	1	-0.503**	-0.200	-0.618**	-0.342*	-0.318*	-0.633**	-0.278
	Sig.	0.000		0.001	0.205	0.000	0.027	0.040	0.000	0.075
** Correlation is significant at the 0.01 level (bilateral).										
* Correlation is significant at the 0.05 level (bilateral).										

Source: By the author.

Regarding the results of the methodological analysis presented, it is possible to note that there is a certain relationship between minority shareholders in 2013 and information asymmetry for the same term, presenting an inverse relationship; that is, the more minority shareholders are found in each of the companies in the sample, the lower the information asymmetry that exists in the market. However, when the analysis is conducted for each of the minority shareholder types identified in the 42 sampled companies, there is an inverse relationship between information asymmetry as measured through the spread and the different types of minority shareholders identified, especially with the institutional investors of the sample.

Below, using a cross-sectional econometric model, we study the existing relations between the following variables: the stock market presence of the sampled companies; whether the companies belong to the Santiago Stock Exchange during the study period; the number of minority shareholders that are legal entities; the issuance of bonds; the quality of corporate governance; and the overall assets of the sample's companies, with the level of information asymmetry measured by the spread (bid ask). The above makes it possible to arrive at conclusions concerning the determining factors of the information asymmetries for the companies belonging to an emergent market such as Chile.

Thus, the general model in its functional form is specified by the following equation:

$$\text{Average_Median_Spread}_i = \beta_0 + \beta_1 * \text{Market_Presence}_i + \beta_2 * \text{IPSA}_i + \beta_3 * \text{Professionals}_i + \beta_4 * \text{Bonds}_i + \beta_5 * \text{Botosan}_i + \beta_6 * \text{Ln_Assets}_i + \mu_i \quad \text{(equation 1)}$$

where:

$\text{Average_Median_Spread}_i$= measured as the annual average of the difference in prices divided by the medium value.

Market_Presence_i = the percentage of the stockmarket presence of the sampled companies according to the General Regulation No. 327 of January 17, 2012, of the Securities and Insurance Superintendence (*Superintendencia de Valores y Seguros*, SVS).

$IPSA_i$ = a dichotomous variable that takes the value of 1 if company *i* belongs to the Santiago Stock Exchange (IPSA) index and 0 otherwise.

$Professionals_i$ =the sum of minority shareholders that are legal persons (pension funds manager (AFP), mutual funds, insurance companies, etc.).

$Bonds_i$ = a dichotomous variable that takes the value of 1 when the company issues bonds to the general public and 0 when it does not.

$Botosan_i$ = an index that measures the quality of corporate governance.

Ln_Assets_i = the natural logarithm of the assets of the sampled companies.

μ_i = the random error term.

To develop this empirical application, we work with cross-sectional models, considering the sample's companies and periods as our cross sections. The data for the analysis performed derive from the Santiago Stock Exchange and the Securities and Insurance Superintendence and are available for the period of January 2007 to December 2015. Table 6 shows the results of the calculation of model expressed in equation 1, calculating two independent models, one that omits the control variable of LnAssets (Model 1) and another that incorporates it (Model 2).

Table 6. Model with the dependent variable: Average_ Medium_ Spread

		Typified Coefficient	***t***	***Sig.***
	Model 1			
Constant			14.446	0.000
Market presence		-.463	-6.408	0.000
IPSA		-.324	-4.611	0.000
Professionals		-.191	-3.041	0.003
Bonds		-.131	-2.418	0.018
Botosan		-.137	-2.233	0.029
	Model 2			
Constant			7.855	0.000
Market presence		-.432	-6.198	0.000
IPSA		-.295	-4.356	0.000
Professionals		-.090	-1.299	0.198
Bonds		-.127	-2.460	0.016
Botosan		-.184	-3.042	0.003
LnAssets		-.195	-2.943	0.004

The results from Table 6 show that the signs of all of the typified variables for the companies in the sample are coherent with the indications of economic theory. Regarding the quality of corporate governance of each of the companies in the sample, as measured through the Botosan indicator, the signs are as expected; that is, the higher the quality of corporate governance is, the lower the information asymmetry from the company.

Regarding the qualitative variable that measures whether companies in the sample belong to the Selective Stocks Price Index (IPSA), once the companies have belonged to this index, they show lower information asymmetries than when they did not belong, which is because increased

information disclosure generates a lower level of information asymmetry for investors, which means that the (bid-ask) spread is smaller.

Another variable that is accounted for is the market presence, an arrangement that necessarily must be considered in a small and not very intensive market. In this case, when the market presence increases, information asymmetry decreases.

Table 6 clearly shows that the Professionals variable significantly contributes to explaining the spread and affects both models (1 and 2) in a proportionally inverse manner. This result could be related to the fact that there are companies with professionals on their staff to manage their investments, among other reasons because they themselves are institutional investors or have some liability degree for the type of investments they perform against third parties, as is the case of the pension managing funds (PMFs), for example. This may be a clear signal for all market investors, thus diminishing the perceived information asymmetry.

Similarly, the Bonds variable also significantly contributes to the regressive adjustment of the spread in Models 1 and 2. The inverse relationship that this variable has with the spread is consistent with the evidence found in the reviewed literature, given that the additional information supplied by companies that issue bonds in the Chilean market and the signal sent to the market are related to the information asymmetry detected by the stock's spread.

Finally, regarding the control variable incorporated in Model 2 of Table 6, that is, the active natural logarithm as a measure of the company's size, larger-size companies feature more resources to develop corporate governance with stronger structures. Thus, they disclose more information, which lessens the information asymmetry, leading to a lesser spread (bid-ask).

CONCLUSION

In this research, minority shareholders in the Chilean stock exchange during the 2013 and 2015 terms have been characterized. For that end, this study adopts a sample of 42 companies, those with a continued presence in the Stock's Selective Price Index between 2007 and 2013. A model has been proposed to support the study of the existing relations among such investors and the level of information asymmetry, as measured by the spread of the Santiago Stock Exchange with intraday data for the 2013 term. This study is descriptive and explanatory in nature and combines primary and secondary information sources.

In this investigation, we have managed to establish that the evidence found is consistent with our hypotheses because it is confirmed that, provided that there are more minority shareholders sharing the company's ownership, the spread diminishes, which is in accord with H1. That is, the more minority shareholders there are involved in the Chilean company's ownership, the less information asymmetry there is in capital markets.

On the other hand, although we have established that there is a negative relationship between the number of minority shareholders who are legal persons and the behavior of the spread, this relationship not proven to be significant, and therefore, we reject the second hypothesis (H2).

The evidence from our data show that, the greater the number of legal persons as minority shareholders sharing the company's ownership, the lower the information asymmetry in capital markets, albeit with such a weak bearing effect that it does not reach the level of significance (at 1% or at 5%).

In contrast, it is proven that, when minority shareholders are institutional, a spread decrease is detected, and consequently, we deduct their significant influence in the improvement of the information's quality of the capital markets. This analysis can be extended including the invested amounts made by the different types of minority shareholders, but nevertheless, these data can only be gathered in the case of the Pension Funds Management (AFP).

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