

Unrevealing the relation between disclosure quality, ownership structure, and stock liquidity

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Unrevealing the relation between analyst following, ownership structure, and stock liquidity

Prior studies that examined the relation between analyst following and stock liquidity has been undertaken in the United States, in the context of developed financial stock markets and high IPO activity (Bolliger, 2004). Our study focus on the influence of analyst coverage on stock liquidity in France where analysts are less active and IPO are less frequent. Early research has point out the role of analysts in securities markets in terms of influencing firm information environment, information asymmetry and stock liquidity. However, no consensus has been reached on the sign of the relationship. One stream of research argues that analysts provide public information, reduce information asymmetry and increase therefore market liquidity. Another stream of research assumes that analysts are proxies for privately informed trade or signals of information asymmetry, consequently stock with high analyst coverage have lower market liquidity. We hypothesise that analysts proxy for the amount of public information available regarding a firm's value. We also examine the influence of minority expropriation risk on liquidity, assuming that market maker charge larger bid-ask spread for firms with high minority expropriation risk which result in lower market liquidity. Finally, we extend the work of Attig et al. (2006) by examining the role of analysts in mitigating the minority agency problem. We argue that analysts supply the market with public information, reducing therefore information asymmetry and mitigate the illiquidity due to minority expropriation risk.

Using a sample of 72 French firms composing SBF120 on the period 2001-2004, we examine the relation between analyst following, minority expropriation risk and market liquidity. We use two measures for stock liquidity: bid-ask spread and effective spread. The results are statistically significant and similar using both measures. First, we find that liquidity is positively associated to analyst coverage and negatively associated to minority expropriation risk. Second, the results show that widely covered firms suffer less from illiquidity due to the presence of minority expropriation risk then less covered firms. Finally, we infer that analysts mitigate liquidity effect pricing due to minority expropriation.

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1. Introduction

Liquidity is believed to be a cornerstone of the well-functioning capital market since it enhances the value of investors' assets and lower the cost of capital for firms. The purpose of this research is two-fold. First, to study the influence of analyst coverage on stock liquidity assuming that analysts increase the supply of information about a firm for investors, reducing information asymmetry and therefore increasing stock liquidity. Second, to examine the impact of minority expropriation risk on share liquidity.

Prior studies that examined the relation between analyst following and stock liquidity has been undertaken in the United States, in the context of developed financial stock market and high IPO activity (Bolliger, 2004). Our study focus on the influence of analyst coverage on stock liquidity in France where analysts are less active and IPO less frequent. Prior research has point out the role of analysts in securities markets in terms of influencing firm information environment, information asymmetry and therefore stock liquidity. However, no consensus has been reached on the sign of the relationship (Roulstone, 2003). One stream of research suggests that analysts provide public information (Atiase and Bamber, 1994; 1992; Marquardt and Wiedman, 1998), implying that highly analyst covered firms have better stock liquidity. Another stream of research assumes that analysts provide private information which increase information asymmetry and results in lower stock liquidity (Brennan and Subrahmanyam 1995; Easley, O'Hara, and Paperman 1998; Chung, McInish, Wood, and Wyhowski 1995).

Others research examine the economic consequences of ownership structure. While many studies examined the impact of ownership structure on stock liquidity in common law countries where minority investor protection is high (Chiang and Venkatesh, 1988; Heflin and

Shaw, 2000, Kothare, 1997), to the best of our knowledge, no study had examined the relationship between ownership structure and stock liquidity in France. France is affiliated to civil law system where minority shareholders are less protected and controlling shareholders can easily expropriate minority shareholders and trade on their private information (La Porta et al., 2000). Using a US context, Chiang and Venkatesh (1988) document a positive association between spreads and insiders ownership. Using a sample of 260 firms listed on NYSE and NASDAQ, Heflin and Shaw (2000) report that greater block-holder ownership is positively associated with lower liquidity.

Double voting shares are under debates (Global mail, October 18, 2005). On one hand, *“companies that use them say there's no evidence that companies with one share-one vote systems perform any better. In fact, they say that by giving control to a family or parent company, dual-class shares allow management to focus on long-term goals rather than short-term targets”*. On the other hand, the separation between voting rights and cash flow rights allows control shareholders to not support all the consequences of their actions, resulting in high minority expropriation risk. The Canadian context allows firms to issue dual class shares. Using a Canadian firm sample, Attig et al. (2006) find that stocks with greater deviations between ultimate control and ownership have a larger information asymmetry resulting in poor stock liquidity. Roulstone (2003) argue that market liquidity is determined, in part, by information asymmetry and the quality of information available regarding firm value. We extend the work of Attig et al. (2006) by examining the role of analysts in mitigating minority agency problem. We argue that analysts supply the market with public information, reduce therefore information asymmetry and moderate the decrease of liquidity due to minority expropriation risk.

Using a sample of 72 French firms composing SBF120 on the period 2001-2004, we first examine the relation between analyst coverage and stock liquidity, and second the association

between minority expropriation risk and liquidity. Finally, we determine if analyst following reduces agency conflict and limits the effect of minority expropriation risk on liquidity. We use two measures for stock liquidity bid-ask spread and effective spread. The results are similar with both measures. First, we find that liquidity is positively associated to analyst coverage and negatively associated to minority expropriation risk. Second, the results of our regression model demonstrate that highly analyst firms suffer less from liquidity decrease in the presence of minority expropriation risk than less followed firms. We conclude that analysts mitigate liquidity effect pricing due to minority expropriation. They provide public information to the market reducing therefore information asymmetry and enhancing liquidity.

Our contributions are as follows. First, this paper examines the role of analyst in security markets by investigating the relation between analyst coverage and market liquidity and the role of analyst in mitigating agency problem by providing public information. Second, the separation between voting rights and cash flow rights increases the severity of agency problems between controlling insiders and outsiders. The French law of 24/06/1966 permits firms to issue double voting rights shares. This practice is forbidden in French neighbour countries as Italy, Spain and United Kingdom. What are the benefits and disadvantages of this device? Should this law be changed in order to improve investor protection environment in France?

The remainder of this paper is organized as follows: section 2 examines the review of literature and presents our hypotheses; section 3 describes research design and methods; we present the results and their interpretations in section 4. Finally, we summarize and conclude in section 5.

2. Review of literature and hypotheses development

Many previous empirical research examined liquidity in French Market. Ginglinger and Hamon (2007) classify these studies in four groups: the description and construction of

liquidity indicators and the study of their behaviour in relationship to the market category/type, the study of competition inter-market (Jacquillat and Gresse, 1998, Hamet, 2002), the study of the relation between foreseen return rate and liquidity (Hamon et Jacquillat, 1999) and finally, the study of change in liquidity level during an event window, for example, earnings announcements (Gajewski, 1999). However, no study has examined the influence of minority expropriation neither the impact of analyst coverage on liquidity in France.

Liquidity and minority expropriation

Liquidity trading is an important component of market microstructure models which suggest that large individual owners have a negative effect on liquidity; firms with high numbers of shareholders should have higher liquidity. Prior studies examine the relationship between block holders and liquidity; however few examine the influence of minority expropriation risk on liquidity (Attig et al., 2006; Heflin and Shaw, 2000).

Bolton and Van Thaden (1998) examine the trade-off problem between the decrease of the liquidity and the increase in corporate control resulting from the presence of blocks. The authors develop an analytical model to examine the benefits and inconvenient of ownership concentration and provide criteria for the optimal choice of ownership structure.

Chiang and Venkatesh (1988) investigate the relationship between insiders' ownership and liquidity. Using a sample of 75 firms listed on the NYSE in 1973, they report a positive association between spreads and insiders' ownership suggesting that the adverse selection problem resulting from information asymmetry affects ordinary investors in two ways. First, a higher degree of information trading costs leads to a larger spread. Second, the adverse selection problem also places an ordinary investor more frequently on the wrong side in the case of informationally disadvantages trades (Demsetz, 1968).

Heflin and Shaw (2000) test the relation between blockholders, defined as shareholders owning more than 5% of a firm's outstanding shares, and market liquidity. They suggest that blockholding may reduce agency costs and monitor managers. However, the presence of blockholders may lead to another agency conflict which opposes controlling shareholders and minority ones. The authors argue that "*blockholder ownership is potentially costly, because their monitoring might provide blockholders with access to private, value-relevant information*". This private information gives blockholders incentives to expropriate minority shareholders; consequently minority shareholders are more likely to ask for a wider spread as a compensation of the risk due to expropriation. Heflin and Shaw (2000) document that in the probability of informed trading, market makers charge wider spreads and reduce the number of shares they offer to mitigate potential losses due to informed trading. Using a sample of 260 firms listed on NYSE and NASDAQ, the results show that firms with greater blockholder ownership, either by managers or external entities, have larger quoted spreads, effective spreads, adverse selection spread components, and smaller quoted depths.

Moreover, when controlling shareholders aim to maintain a concentrated ownership structure without assuming the risks and costs resulting from equity holding, they separate cash flow rights from voting rights by issuing dual-class shares and pyramids. The deviation from the one share-one vote rule increases the potential for expropriation of minority shareholders' rights. "*To increase the chance of executing his plans, the ultimate owner would minimize and delay the disclosure of information so that other shareholders cannot intervene, or must base their decisions on inadequate information*" (Attig et al., 2006). Firms providing poor disclosure suffer from information asymmetry problem resulting in low liquidity level and wider bid-ask spread (Glosten and Milgrom, 1985).

Claessens et al. (2002) document that the entrenchment effect resulting from the separation of ownership and control in East Asian firms has a negative effect on firm value. These findings

are consistent with the results of Grossman and Hart (1988) sustaining that separating ownership and control can lower shareholders' value. Attig et al. (2006) hypothesize that a larger deviation of control from ownership should be associated with more selfish behavior by the ultimate owner since he didn't assume all the consequences of his voting decision. Using a sample of 610 Canadian firms, the authors, first test the impact of deviation between ownership and control on liquidity, proxied by bid-ask spread; second they related the deviation between cash flow and voting rights to the information asymmetry component of the spread. The results show that stocks with greater deviation between ultimate control and ownership have a larger information asymmetry component of their bid-ask spread and high illiquidity level.

The discussion above suggests the following hypothesis:

H1: there is a negative relationship between minority expropriation and liquidity

Analyst coverage and liquidity

Roulstone (2003) documents that "*prior research has found contradictory results on the relation between analyst following and market liquidity and has offered differing theories on how analysts affect liquidity*". The direction of the relation depends on how analysts provide information to market. On one hand, analysts can be considered as providers of public information. Thus, analyst following proxy for the amount of information available regarding a firm's value suggesting that highly followed firms should have less information asymmetry. This leads to a positive relation between analyst coverage and market liquidity. On the other hand, analysts may be considered as proxies for privately informed trade or as signals of information asymmetry. In fact, prior research suggests that analysts provide private

information to few market actors who pay to be informed and hold an information advantage compared to uninformed market participants. Consequently, high level of analysts following can signal for information asymmetry and result in lower market liquidity.

Brennan and Subrahmanyam (1995) suggest also a positive association between analysts following and market liquidity but they attribute this relation to increased competition among informed traders leading to a decrease in the adverse-selection problem of market makers. However, Chung et al. (1995) find a negative association between analysts following and bid ask spread using a simultaneous equation. They argue that analysts choose to follow firms with high informational asymmetries, thus, the market participants intercept a high level of analyst following as a signal of higher information asymmetry and ask for a higher spreads.

Using cross-sectional simultaneous estimation on a sample of 3960 firm-months representing 452 unique firms, Roulstone (2003) study the role of analyst in providing information to market. Contrary to Chung et al. (1995) suggestion, Roulstone (2003) finds that analysts provide public information implying that analyst coverage is positively associated to market liquidity.

Following Roulstone (2003), we hypothesis that analysts provide public information to market and suggest a positive relation between analyst coverage and market liquidity.

We develop our second hypothesis, as follows:

H2: there is a positive relationship between analyst coverage and liquidity

Liquidity, minority expropriation and analyst following

We intend in this paper to test if analyst following mitigate the decrease in market liquidity due to high minority expropriation risk. To the best of our knowledge, no previous study had examined the impact on liquidity of the analyst following in the presence of high minority expropriation risk. Attig et al (2006) find that stocks with greater deviations between ultimate control and ownership, ie when minority expropriation risk is high, have a larger information asymmetry component of their bid-ask spread and high illiquidity level. Analysts provide public information to market and thus reduce information asymmetry and mitigate illiquidity problem due to high expropriation risk.

We develop our third hypothesis, as follows:

H3: Analyst following mitigates the decrease of liquidity due to minority expropriation risk

3. Research design and method

This section presents the sample, the dependant variable: stock liquidity, the independent variables: ownership concentration, disclosure quality, analyst following, and minority expropriation.

3.1 The sample

The sample was selected from French firms listed on the Paris Stock Exchange and composing the SBF 120 index in 31/12/2004. The first step was to select only industrial and

commercial firms. Following Depoers (2000), we eliminate financial and insurance companies because of their specific disclosure requirements and financial characteristics. Second, 38 companies were excluded from the sample because of a lack of data. The final sample was composed of 72 companies, as shown in Table 1. The period of the study is from 2001 to 2004.

{Insert table 1 – about here}

3.2 The dependent variables

Stock liquidity

Liquidity, generally described as the ability to trade an asset quickly at low cost, is a critical feature of financial markets. However, liquidity is an elusive concept that is not directly observed, but rather has a number of aspects that are captured by different measures. Finance literature has proposed a broad range of measures to proxy for market liquidity, suggesting that there is no consensus about the most appropriate liquidity measure. Aitken and Forde (2003) classify various (il)liquidity measures into two broad categories: spread-based measures and trade-based measures. They find that there is little correlation between the two categories of (il)liquidity measures. This suggests the choice of measure will affect conclusions regarding the impact of liquidity on the financial markets.

As measures of illiquidity, spread-based measures reflect the round-trip trading costs of order executions. In this category, the mostly used illiquidity measure is the bid-ask spreads (*BASpd*). However, Lee (1993) finds that a significant portion of the shares, especially large trades or block trades, execute within the bid-ask spreads, causing bid-ask spreads to overestimate the actual trading costs incurred to large trades. Lee (1993) proposes effective spread (*EffSpd*) as a more appropriate measure of trading costs. Effective spread measures the distance from the midpoint of the market at the time when the order is entered to the

transaction price that is executed. This value is doubled to capture the round-trip cost of trading, i.e., $EffSpd_t = 2 \times |(B_t + A_t) / 2 - P_t|$, where B_t , A_t , and P_t denote closing bid, closing ask, and closing price at day t , respectively. By definition, effective spreads should be smaller than (or equal to) bid-ask spreads, reflecting the fact that some trades are executed within the bid-ask spreads.

The trade-based category of liquidity measures is based on the notion that higher trading activities lead to greater liquidity. In this category, Brennan, Chordia and Subrahmanyam, (1998) use trading volume (VOL) and Datar, Naik and Radcliffe (1998) propose turnover ratio ($TURNOVER$) to measure the degree of trading activities. The turnover ratio of a stock is defined as the number of shares traded divided by the number of shares outstanding in that stock, i.e., $TURNOVER_t = VOL_t / SharesOut_t$. $TURNOVER$ has the intuitive metric of how frequent the stock changes hands.

Recently, a new liquidity measure has been suggested by Amihud (2002). The “Amihud illiquidity” ($ILLIQ$) measures the illiquidity of stock by the absolute return scaled by the dollar volume of the stock, i.e., $ILLIQ_t = |R_t| / VOL_t$. It is based on the intuition that for an illiquid stock, the price moves by a lot in response to little volume. The $ILLIQ$ measure has received empirical support. For example, Hasbrouck (2002) evaluates the empirical reliability of various estimates of (il)liquidity and finds that “within the class of daily-based estimates, the [Amihud] illiquidity ratio appears to have the most reliable proxy relationship.”

These (il)liquidity measures are constructed from daily return and volume data for each stock at day t . Then each of the (il)liquidity measure is averaged across time to obtain the average (il)liquidity measure for each stock.

We use in this study two measures of spread-based measures (effective spread (*EffSpd*) ; bid-ask spreads (*BASpd*)) and we intend in following work to test if the relation is similar using trade based measures.

3.3 The independent variables

3.3.1 Analyst following

Following Lang and Lundholm (1996) and Brennan and Hughe (1991), we estimate analyst following by the number of analysts that report at least one estimate of current-year EPS (*Earning Per Share*). Analyst data are taken from IBES (*Institutional Brokers' Estimate System*) Detail Tape.

3.3.2 Expropriation of minority

Bebchuck et al. (1999) present mechanisms that allow a controlling shareholder to maintain complete control of the firm while he owns a relative low percentage of total shares. Indeed, issuing two categories of shares, shares with voting rights and shares without, results in separating voting rights and cash flow rights. Claessens et al. (2002) and Faccio and Lang (2002) sustained that the separation of ownership from control amplify the expropriation minority problem. Prior research evaluates minority expropriation level using three measures. First, Faccio and Lang (2002) employ a dummy variable which equals one if there is a separation between voting rights and cash flow rights and zero otherwise. A second proxy for minority expropriation consists in calculating the percentage of voting rights of the first shareholder. Third, Claessens et al. (2002) measure the alignment between voting (V) and capital rights (C) using the ratio of the level of cash flow rights to the level of voting rights of the largest shareholder (C/V). Attig et al. (2006) calculate the ultimate ownership stake (UOWS) and ultimate control stake (UCOS) using the methodology of La Porta et al. (1999) and Claessens et al. (2000).

In France, there is little disclosure about the identity of share holders in the absence of a strict obligation. The law constrain firms to disclose the identity of shareholders who owns at least 5% of cash flow or voting rights. First, we notice that even in the firms composing SBF120, which are the top 120 firms in the French market, not all the firms respect this obligation. Moreover, many firms disclose the identity of those shareholders without mentioning the percentage of cash flow and voting right they posses which makes difficult to evaluate the minority expropriation risk. Finally, there is a significant use of pyramid structures and cross-holdings, consequently, it's difficult to identify the ultimate owner (Le Maux, 2003). In our analysis, we choose voting rights of the largest shareholder to evaluate minority expropriation risk

3.3.3 Analyst coverage, agency problem and liquidity

We measure how analysts mitigate agency conflict between minority and controlling shareholders using the product of voting rights of the largest shareholders by the number of analysts following the firm ($AnaExp = VOT1 * Analysts$).

3.4 The control variables

To investigate whether or not analyst coverage and minority expropriation risk can explain market liquidity and information asymmetry, we need to control for variables that have cross-sectional explanatory power according to prior research (Roulstone, 2003; Attig et al, 2006; Heflin and shaw, 2000). The most common control variables are: trading volume, stock volatility, stock price and firm size. We control for all these variables.

Roulstone (2003) points out that *“firms with higher trading volume present market maker with more opportunities to manage their inventory and recoup losses to informed investors”*. Consequently, there is a negative association between bid ask spread and trading volume. Chiang and Venkatesh (1988) suggest that big firm provide large amount of information to

public. While greater information lowers adverse selection, large sized firms should have lower bid-ask spreads. Following Roulstone (2003), we control for firm size and trading volume to ensure that the relationship between analyst following and liquidity is not driven by large firms being highly covered or by analysts preferring to follow high-volume firms. We control also for stock price and stock volatility.

4. Results

4.1 Descriptive statistics

Table 2 presents descriptive statistics. The average firm of our sample has a market capitalisation of 7 262 thousands of Euros and is covered by 23 analysts. The maximum of analyst coverage is 51, the minimum is 1 and the standard deviation is about 10. This result shows a high dispersion in analyst coverage across firm's sample. We find that the maximum voting rights of the largest shareholder equal 85% with a minimum of 2%. On average, the percentage of voting rights equal 33.5%. This result show that there is a high minority expropriation risk in France and that ownership is concentrated even in the top 120 French firms.

We also calculate turnover ratio to measure the degree of trading activities and particularly how frequent the stock changes hands. The turnover ratio of a stock is defined as the number of shares traded divided by the number of shares outstanding in that stock. The results show a low level of the average turnover of the sample (0.0043). Consistent with the large size of the firms, spreads are quite small with an average bid-ask spread of 0.13 and an average effective spread of 0.11.

Table 3 presents the correlation structure for the main variables. As hypothesised, bid ask spread is negatively associated to analyst coverage and positively associated to minority expropriation risk. The results are similar using effective spread.

4.2 Multivariate Results

We run Hausman Test for Random Effect to choose between fixed effect regression or random effect regression. The result shows an insignificant p-value. Consequently we can't reject the null hypothesis: coefficients estimated by random effect and fixed effect are the same. We use GLS (Generalized Least Squared) regression.

$$Spread = \alpha_0 + \alpha_1 Analyst + \alpha_2 VOTI + \alpha_3 B2M + \alpha_4 Volatility + \alpha_5 MktVal + \alpha_6 Volume + \varepsilon_l \quad (1)$$

$$Spread = \alpha_0 + \alpha_1 Analyst + \alpha_2 VOTI + \alpha_3 AnaExp + \alpha_3 B2M + \alpha_4 Volatility + \alpha_5 MktVal + \alpha_6 Volume + \varepsilon \quad (2)$$

Tables 4a et 4b contain the results of estimating (1) and (2). Using bid-ask spread and effective spread, we find that liquidity is positively correlated to Analyst coverage. This result is coherent with those found by Roulstone (2003) and Brennan and Subrahmanyam (1995) but are contrary to those of Chung et al. (1995). Using a simultaneous regression and Granger causality test, Roulstone (2003) show that analyst following is associated with increased market liquidity. The author also examines the relationship between analyst forecast dispersion and liquidity to shed the light on how analyst affect information environment of the market. He documents that if analysts proxy for privately informed traders, dispersion should reduce information asymmetry and increase liquidity because privately informed traders would have less precise information. On the other side, if analysts provide information that becomes public, dispersion should increase information asymmetry and decrease therefore liquidity because dispersion is associated with less precise public information. Contrarily to Brennan and Subrahmanyam (1995) suggestion, the author finds a negative relation between dispersion and liquidity and infer that analyst provide public information to the market.

After controlling for size, trading volume and other liquidity determinants, the results show a negative relationship between liquidity and minority expropriation risk. This finding is

consistent with Attig et al. (2006) and Heflin and Shaw (2000). The regression results show that the coefficient of VOT1 is positive and statistically significant at the 1% level. In fact, an increase of 10% in voting rights of the largest shareholder is associated to an increase of 1.795 of the bid-ask spread and 2.05 of the effective spread.

Controlling shareholders benefit from private information which gives them more incentive to expropriate minority shareholders. Glosten and Milgrom, (1985) show that information asymmetry problem leads to wider spread and lower market liquidity; thus, minority shareholders charge wider spreads and reduce the number of shares they offer to mitigate potential losses due to informed trading. We find that volume trading is negatively associated with spread. This is consistent with Heflin and Shaw (2000) suggestion that uninformed shareholders reduce the number of shares they offer for firms with high minority expropriation risk to avoid potential losses.

Finally we explore the possibility that analysts mitigate agency conflict. Table4b present the result of regression (2). We introduce in regression (2) an adding variable AnaExp to examine if analysts mitigate the agency problem relative to minority expropriation by multiplying VOT1 (expropriation risk) and Analyst (analyst coverage). First, we notice that the explanatory power of the regressions improved for both regressions with bid-ask and effective spread. The R squared using BASpd (EffSpd) increases from 12.29% (11.88%) to 15.83% (14.32%). Moreover, the coefficient estimates of AnaExp is negatively correlated to bid-ask spread (effective spread) at 1% (10%) level.

Attig et al (2006) document that controlling shareholders have incentives to minimise and delay disclosure and exacerbate information asymmetry to increase the chance of executing his plans and avoid that minority shareholders intervene. Assuming that analyst provide public information and reduce therefore information asymmetry and illiquidity problem, we

find a negative association between analyst coverage and spread. Our data provide evidence that analyst mitigate the decrease of liquidity due to minority expropriation risk.

5. Conclusion

This research examines the relation between analyst coverage and liquidity. While prior studies has been undertaken in the United States, in the context of developed financial stock markets and high IPO activity, our study focus on French context where financial market is less active. Our findings are similar with those found by Roulstone (2003) and Brennan and Subrahmanyam (1995) in the American market. Measuring liquidity using bid-ask spread and effective spread, we show that liquidity is negatively correlated with analyst coverage. We extend these studies by examining the role of analyst in mitigating illiquidity due to minority expropriation problem. Our results show that the product of analyst coverage by minority expropriation risk is positively correlated to liquidity. There is no consensus on how analysts provide information to the market. One stream of the research argues that analysts provide public information and another stream documents that analysts proxy for the amount of private information and signal information asymmetry. Our results indirectly corroborate the findings of Roulstone (2003), i.e. that analyst provides public information to the market, reduce information asymmetry and increase liquidity. Moreover, we infer that analyst reduce agency conflict by providing information to public and diminishing information asymmetry which leads to mitigate illiquidity due to minority expropriation risk.

We examine also the relationship between minority expropriation risk and liquidity. The French context is worth to study because of poor investor protection (La Porta et al, 1999) allowing us to examine the relationship between minority expropriation risk and liquidity. Although controlling shareholders can monitor managers and reduce agency costs, they also potentially benefit from private information. Minority shareholders have incentives to charge wider spread and offer less shares, thus decreasing stock liquidity, to prevent from potential

losses due to informed trades. Our results are coherent with those of Attig et al (2006) and Heflin and Shaw (2000).

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Table 1: Sampling procedure

Companies listed on Paris Stock Exchange on 31 December 2004 composing SBF 120 inc	120
Financial companies	20
Companies with Missing data	38
<i>Final sample</i>	72

Table 2: Descriptive statistics

	Minimum	Maximum	Mean	Std. Deviation
Bid-Ask Spread	0.01	1.1181	0.1302	0.1814
Effective Spread	0.01	0.973	0.1117	0.1577
Turnover	0.0001	0.0235	0.0043	0.0037
Herfindahl Index	0.001	0.725	0.1462	0.1723
Vot1	0.019	0.85	0.3352	0.2531
Analyst	1	51	22.68	10.588
Volatility	0.0081	0.0399	0.0169	0.0067
MktVal	255.7467	53596.1317	7261.9308	11055.9928

vot1: voting rights of the largest shareholders

Analyst: analyst coverage, ie number of analysts following a firm

MktVal: market value

Herfindahl index: measure ownership concentration,

= the sum of the squared percentage of cash flow of shareholders

Table 3: Correlation Matrix

	BAspd	EffSpd	Volatility	MktVal	B2M	Volume	Analyst	VOT1
BAspd	1							
EffSpd	0.97	1						
Volatility	-0.2	-0.2	1					
MktVal	-0.31	-0.27	-0.21	1				
B2M	-0.12	-0.11	0.03	0.38	1			
Volume	-0.4	-0.35	-0.02	0.84	0.21	1		
Analyst	-0.38	-0.34	-0.1	0.7	0.27	0.77	1	
VOT1	0.45	0.45	-0.14	-0.01	0.06	-0.17	-0.21	1

Table 4a: Multivariate analyses of expropriation risk, analyst coverage and market liquidity

	BASpd	EffSpd
Intercept	0.2202 (3.88)***	0.2203 (3.47)***
Volatility	-1.051 (-1.00)	-1.9238 (-1.60)
Firm Value (x10000)	0.0009 -0.54	-0.0005 (-0.26)
Book-to-Market	0.0007 -0.17	0.0007 -0.16
Volume (x10000)	-0.0077 (-2.28)**	-0.0046 (-1.20)
Analyst	-0.0025 (-2.15)**	-0.0021 (-1.83)*
VOT1	0.1795 (2.94)***	0.205 (3.21)***
Hausman Test for Random Effect	m = 4.74 p-val = 0.58	m = 2.74 p-val = 0.84
F Test for Ho: effect on	F = 7.00	F = 6.51
# of Analyst is zero	p-val = 0.00**	p-val = 0.00***
Rsq	0.1229	0.1188

*, ** and *** indicate that the coefficients are significantly different from zero at the 1%, 5% and 10% levels

Table 4b: Multivariate analyses of expropriation risk, agency conflict, analyst coverage and market liquidity

	BASpd	EffSpd
Intercept	0.1596 (2.65)***	0.1799 (2.64)***
Volatility	-1.0311 (-1.00)	-1.943 (-1.62)
Firm Value (x10000)	0.0073 -0.47	-0.0064 (-0.36)
Book-to-Market	0.0018 -0.47	0.0019 -0.29
Volume (x10000)	-0.0063 (-1.83)*	-0.0034 (-0.85)
Analyst	-0.0019 (-1.42)	-0.002 (-1.27)
VOT1	0.3022 (3.75)***	0.3027 (3.47)***
DMA	0.049 -1.15	0.061 -1.23
AnaExp	-0.2166 (-2.66)***	-0.1834 (-1.93)*
Hausman Test for Random Effect	m = 4.38 p-val = 0.82	m = 3.39 p-val = 0.91
F Test for Ho: effect on	F = 5.78	F = 3.29
Herfindahl is zero	p-val = 0.02**	p-val = 0.05*
Rsq	0.1583	0.1432

*, ** and *** indicate that the coefficients are significantly different from zero at the 1%, 5% and 10% levels

DMA is a dummy variable equal 0 if the firm is highly covered by analysts and 1 otherwise
 AnaExp=Analyst*VOT1