

## The Impact of Web-Based Disclosure on the Capital Market Risk

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### Abstract

This paper evaluates the Web-based voluntary disclosure practices in a sample of 180 French listed firms. The main objective is to investigate the impact of Internet-based disclosure on capital market risk. Three measures are used to present the capital market risk: total risk is measured by the standard deviation of stock returns, and systematic risk and idiosyncratic risk are the beta and standard deviation of the residuals generated from the market model, respectively. Following the method of Gajewski and Li, the Web-based disclosure is measured by an index of 40 items. The empirical results show that total risk and idiosyncratic risk vary inversely with the strength of Internet disclosure. This indicates that improved online disclosure can reduce investors' uncertainty in the capital market. However, systematic risk is not influenced by the disclosure practice. Furthermore, capital concentration and board size are negatively associated with total and idiosyncratic risk. This study extends the prior research by investigating the influence of online disclosure on capital risk in the French stock market. I am particularly concerned about the technical features of Internet disclosure and its impact on capital risk. Online information is generally considered to be user-friendly, yet it is now necessary to analyze the effect of this convenience provided by Internet technology on the capital market.

**Keywords:** Web-based disclosure; Capital market risk; Stock return volatility

### Introduction

Internet-based disclosure presents several advantages over such traditional media as the annual report. These include lower information distribution costs, a broader range of information receivers, greater convenience in information collection and processing, and so on. In France, Internet-based disclosure had long been voluntary and unregulated. However, in response to the development of European transparency directive, the *Autorités des Marchés Financiers* (AMF)<sup>1</sup> promulgated new disclosure regulation, and required all listed companies to publish mandatory financial information via the Internet as of January 20, 2007. This regulation is designed to improve the integrity of the information dissemination system, reduce the opacity of financial statements, and protect investors from accounting fraud. The Internet has obviously played an increasingly important role in financial reporting.

This paper evaluates the Web-based voluntary disclosure practices in a sample of 180 French listed firms. The main objective is to investigate the impact of Internet-based disclosure on capital market risk. Following the method of Gajewski and Li [1], the Web-based disclosure is measured by an index of 40 items. Three risk measures are included: total risk (expressed as the standard deviation of daily stock returns), and systematic and idiosyncratic risk (respectively expressed as the beta and standard deviation of the residuals generated from the market model). I attempt to determine whether these three risk measures are associated with online voluntary disclosure in a similar manner.

A series of corporate governance factors are also included to study the relationship between the governance mechanism and capital market risk. These are ownership structure, board size, board composition, supervisory committee power, CEO duality and governance system. In addition, I include firm size, financial leverage and market-to-book ratio as control variables in the regression models.

The empirical results show that the improved Internet-based

disclosure can reduce total risk and idiosyncratic risk. Consistent with prior studies, board size is negatively associated with risk. The concentration of capital has a negative impact on the risk level.

This paper extends prior research in several ways. First, I focus on the impact of Internet-based disclosure. Previous studies generally examined the effect of financial disclosure on capital markets by evaluating a single traditional medium, such as the annual report. However, in practice, listed companies often publish information via multiple media. Naturally, we wonder whether the information supplied through a single medium can represent the total amount of information published through all the various channels. The Internet makes it easy to group together the information disseminated by various media. Investors can download the last annual report, get the financial data in Excel format, watch videos of general shareholder meetings, follow the forecasts made by financial analysts, etc. The flexibility and vast range of options offered by the Internet are such that a company website becomes a user-friendly information center. In this regard, we might assume that disclosure via the Internet is more suitable for representing a company's global communication strategy. As Botosan [2] indicates in his paper, "I find no evidence of an association between my measure of disclosure level and the cost of equity capital for firms with a high analysts following. This may be because my disclosure measure is limited to the information provided in the annual report and accordingly may not yield a powerful proxy for overall disclosure level when a substantial amount of information is disseminated through financial analysts." By assessing the information published via the Internet, it is possible to overcome this limitation of previous research and establish a more convincing assessment of the

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<sup>1</sup> AMF: Autorité des Marchés Financiers- the French Financial Markets Authority

level of the overall supply of information.

Furthermore, the prior research concerning Internet-based disclosure generally focuses on its determinants. The impact of such disclosure is rarely examined. This study extends the prior research by investigating the influence of online disclosure on capital risk in the French stock market. I am particularly concerned about the technical features of Internet disclosure and its impact on capital risk. Disclosure practice refers not only to the content of information, but also to its presentation. Online information is generally considered to be user-friendly, yet it is now necessary to analyze the effect of this convenience provided by Internet technology on the capital market.

The novelty of the French Companies Act is another motivation for this research. French legislation allows domestic publicly listed companies to choose between a one-tier system (also called the single system and obligatory in the UK, the US, etc.) and a two-tier system (obligatory in Germany, Slovenia, etc.). Furthermore, according to the "loi NRE" of May 15, 2001, French listed companies are free to decide on CEO duality or not. The freedom of choice on these two issues therefore makes the French situation unique. The past research concerning Internet-based disclosure or capital market risk was generally carried out using Anglo-American samples. Because of the features of French corporate governance, it is necessary to verify whether the prior results are valid in the French context.

The remainder of the paper is organized as follows: Section 2 reviews the prior research on the impact of financial disclosure and corporate governance on capital market risk and then develops hypotheses. Section 3 outlines the sample selection and measurement of all the variables. Section 4 presents the empirical analysis and results. The summary is provided in Section 5.

## Literature Review and Hypothesis Development

In this section, I review the literature on the links between capital market risk and corporate disclosure in order to develop the main hypotheses of the paper. I then present the corporate governance factors that, according to the literature, may have an impact on capital market risk.

### Internet-based disclosure and risk

Research on financial disclosure generally suggests that improved financial transparency can reduce the information asymmetry problem, prevent negative surprise about the company's performance, and keep stock prices relatively stable [3,4]. With regard to the relationship between disclosure and risk, both theoretical and empirical studies reveal mixed results.

Some studies demonstrate an inverse association between financial disclosure and capital market risk. For example, Patell [5] finds a negative link between stock return volatility and the voluntary publication of earnings forecasts. McNichols and Manegold [6] prove that companies can reduce the return variability if they release interim financial statements in addition to their annual financial reports. Furthermore, they point out that the systematic risk is not influenced by financial disclosure. However, the study of Barry and Brown [7] proves theoretically that a company suffers higher systematic risk when the information transparency is low. As a result, they suggest reducing market beta by providing more information.

We also find studies indicating a positive association between risk and disclosure. Lang and Lundholm [3] find that managers try to reduce information asymmetry by improving disclosure, and this

higher quality disclosure is weakly associated with greater stock return volatility. Jorgensen and Kirschenheiter [8] theoretically study the link between mandatory disclosure and market risk, and they point out that stricter disclosure regulations expose companies to higher market risk. Bushee and Noe [9] analyze the relationship between disclosure and stock volatility through the impact of institutional investors. They suggest that improved disclosure might attract transient institutional investors who trade aggressively in the stock market, thus leading to higher stock return volatility.

Certain studies, moreover, examine how new disclosure regulations, such as SOX, impact capital market risk. For example, Stigler [10] reports that the variance of IPO stock prices was significantly reduced in the post-1933 Securities Act period, because of the stricter requirements for financial disclosure. Akhigbe and Martin [11] examine whether significant shifts in risk occurred in the US financial services sector following the passage of SOX. They find that financial disclosure and governance factors are inversely associated with the risk shifts and they conclude that "the market rewarded (punished) firms with stronger (weaker) disclosure and stronger (weaker) governance." Given these discrepancies in the literature, the first hypothesis of this research is presented in alternative form:

**Hypothesis 1: Internet-based disclosure is positively/negatively associated with capital market risk.**

### Corporate governance mechanisms and risk

Identifying the relationship between corporate governance and risk is a complex task because corporate governance is inherently very difficult to measure. As Sullivan and Spong [12] indicate in their work, the rise in corporate scandals and the implementation of the Sarbanes-Oxley Act have shown how little we know about a good governance system and its impact on risk management. This section attempts to identify the relationship between capital risk and corporate governance mechanisms by analyzing the following factors: ownership structure, governance system, board size, board independence, CEO duality, and supervisory committee power.

#### Ownership concentration

According to agency theory, the separation of ownership and control causes a conflict of interest between shareholders and managers. The ownership structure influences the manager's incentive for risk-taking [13]. Many studies find a significant relationship between ownership concentration and risk-taking, but there is no consensus as to whether this relationship is positive or negative [14-16].

According to the work of Pathan [17], bank shareholders show a stronger incentive for risk-taking in order to cover the expense of the deposit insurance and make a profit. However, bank managers have different incentives regarding risk. Managers are risk-averse because they may lose their job and professional reputation if their risky project fails [18]. Although shareholders own the bank, bank managers directly control the risk structure by their daily management activities. Shareholders try to force managers to take high risk and profitable projects, while managers resist [16,17,19]. When ownership is concentrated, the major stockholders may influence corporate management more easily and directly. They may have greater power to control the risk-averse managers in order to reach their objectives. In this regard, ownership concentration should be positively related with capital market risk.

**Hypothesis 2a: Ownership concentration is positively associated**

with capital market risk.

#### Board size

Studies generally demonstrate that a large board is less efficient than a smaller board, as the members on large boards tend to become more or less symbolic. This leads to agency problems such as director free-riding [20,21]. Yermack [22] proves that small boards with fewer directors are more efficient, whereas big boards have a negative impact on corporate governance. Lipton and Lorsch [21] suggest taking ten members as the limit of efficacy and assume that more than ten members will be inefficient.

An efficient board represents shareholder's interests better and, since shareholders have a stronger incentive for risk-taking, board size should be negatively related to the risk. Pathan [17] empirically tests this assumption and finds that smaller boards can reduce the manager's risk-averse manner. Therefore, I form hypothesis 2b:

**Hypothesis 2b: Board size is negatively associated with capital market risk.**

#### Board composition

In general, board members can be divided into three categories: inside directors, grey directors and independent directors. The proportion of independent directors appears to be the factor most examined in the literature on corporate governance. The main duty of the independent director is to supervise management, evaluate and ratify the firm's operating strategies, and provide advice for improving corporate governance. Prior studies indicate that independent directors are better and more efficient at monitoring managerial decisions and protecting shareholder interest [23]. Rosenstein and Wyatt [24] find that stock market prices react positively to the announcement of increasing independent membership. This could be explained by the market rewarding firms with a high proportion of independent directors.

The question is how independent directors impact risk-taking. Agency theories point out that a higher proportion of independent directors limits the conflicts of interest between managers and shareholders. In this regard, increased independent membership helps to ensure that managers behave in the interest of shareholders, who have a preference for risk-taking, according to the corporate literature. For example, Pathan [17] assumed that a higher proportion of independent directors would be positively associated with the risk-taking level. A positive relationship between independent directors and risk-taking was thus hypothesized. However, contrary to his assumption, the empirical result proves an inverse relationship between outsider directors and risk level. As he concludes, the independent directors might view their role as balancing the interests of the different shareholders.

The function of independent directors and their effectiveness are, in fact, questioned by many researchers. Klein [25] argues in his research that "boards need specialized, expert- provided information about the firm's activities to evaluate and ratify the firm's long-term strategies. But, the attainment of this knowledge requires both time and firm-specific expertise on the part of the directors, two things that inside directors have but outside directors lack." Callahana et al. [26] then point out that inside directors, due to their firm-specialized knowledge, have a comparative advantage over independent directors. Furthermore, Akhigbe and Martin [11] prove by factor analysis that board independence is negatively related to bank risk-taking. Consequently, an open hypothesis is developed:

**Hypothesis 2c: The proportion of independent directors is positively/negatively associated with capital market risk.**

#### Board committees

Many French companies choose to create special board committees in order to improve efficacy. According to Harrison [27], board committees can be classed into two groups: management support committees and monitoring committees. The latter include the audit, compensation, and nominating committees. The creation of these committees is expected to improve corporate efficacy and reduce the interest conflicts between managers and shareholders. If managers are acting in the interest of shareholders, they should be less risk-averse in order to maximize corporate value. Consequently, the involvement of monitoring committees is expected to be positively related with risk taking.

**Hypothesis 2d: The involvement of monitoring committees is positively associated with capital market risk.**

#### Governance system

Two governance systems co-exist in modern corporate management: the one-tier system (also called the single governance system), which is mainly adopted by Anglo-American listed companies, and the two-tier system with European origins. For companies that adopt the one-tier system, the board, including the CEO, has ultimate responsibility for management, general affairs, direction and performance of the business as a whole. Companies with the two-tier management system have a supervisory board and a management board. In this system, the management board is vested with power by the supervisory board and takes charge of the company's operation activities. The supervisory board provides permanent oversight of company management. It names the members of the management board and appoints its chairman and general managers.

Because the two-tier system clearly separates the functions of management and supervision, it is supposed to offer a more effective management style compared with the single board. For the company with a two-tier system, the supervisory board can express opinions on all decisions relative to the major strategic, economic, and financial aspects of the company. The management board must be authorized by the supervisory board to carry out a project. This mechanism gives the shareholders of two-tier system companies relatively more influence and power to control the managers. As prior studies point out, managers are risk-averse in order to protect their professional reputation and job security, while shareholders have incentives to pursue high-risk projects. Therefore, the risk level of two-tier system companies is expected to be higher.

**Hypothesis 2e: The companies with a two-tier system demonstrate a higher level of risk than those with a one-tier system.**

#### CEO duality

The independence and effectiveness of a board is largely influenced by the power of the CEO. Advocates of improved corporate governance often suggest separating the role of the CEO and chairman in order to avoid concentrating too much power in the hands of a single executive. It is assumed that the separation of positions allows the board directors to be more independent. CEO duality may lead to weak monitoring, potential CEO entrenchment and poor performance. When CEOs chair the board, it is easier for them to restrict the information to the other members on the board. This CEO duality could reduce the

board's independence and its efficacy in monitoring the managers.

Akhigbe and Martin [11] suggest that the strong involvement of the CEO in management activities may weaken the efficacy of the board and its committees. When the CEO has more power and ability to control the board, the company should exhibit less risk since managers are risk-averse. Pathan [17] provides evidence that CEO duality is negatively related to bank risk-taking. Based on these prior studies, I form the last hypothesis:

**Hypothesis 2f: CEO duality is negatively associated with capital market risk.**

## Data and Research Method

### Sample description and data collection methods

The initial sample contained all French firms belonging to the SBF 250 index. I then excluded twenty-nine companies in the financial sector because of different disclosure requirements. Moreover, 41 firms were rejected for lack of sufficient information. The final sample therefore consists of 180 companies covering nine sectors: Oil and Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecommunications, Utilities and Technology. Data on ownership structure was collected from the "Thomson ONE Banker" and "Dafsalien" databases. Information on corporate governance was collected from websites and annual reports. Other financial and accounting data were obtained from the "Datastream" and "Worldscope" databases. All collected data pertain to the 2007 financial year.

### Measurement of the variables

Total, systematic and idiosyncratic risks are calculated for each firm. Total risk is measured as the standard deviation of the daily stock returns during fiscal year 2007. Systematic risk and idiosyncratic risk are generated from the market model:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

Where:

$R_{it}$  is the stock return of firm  $i$  for time  $t$

$R_{mt}$  is the return of index SBF 250 for time  $t$

$\varepsilon_{it}$  is the error term for time  $t$

Systematic risk is the coefficient of  $R_{mt}$  generated from the regression, and idiosyncratic risk is the standard deviation of the residuals ( $\varepsilon$ ) in the model.

The paper of Gajewski and Li has developed an index of 40 items to evaluate the French firms' web disclosure practice (Appendix II). Following their method, I exam all sample firms during the month of May and June in 2007. I assign one point to each item presented in the firm's web site. The maximum possible score that a listed firm can obtain is 40 points. For each company, the total score is presented as the percentage of the actual score in relation to the maximum possible score. Therefore, the level of Web based disclosure (**Web**) of each company varies between 0 and 1, with 1 the highest score and 0 the lowest.

Moreover, a series of governance factors are included and measured as follows: Ownership concentration (**Block**) is measured by the proportion of capital held by block holders (those investors owning 5% or more of a corporation's stock). Board size (**Board**) is the number

of board members. Composition of the board (**Independence**) is the percentage of independent directors on the board. Governance system (**Governance**) is measured by a dummy variable. The companies with one-tier systems are coded 0 and those with two-tier systems are coded 1. CEO duality (**CEO**) is measured by a dummy variable, with a value of 1 if the positions of CEO and chairman are separated and 0 if the CEO is also the chairman of the board.

Three dummy variables are introduced to examine the creation of monitoring committees inside the board: an audit committee, with a value of 1 if the audit committee exists, and 0 otherwise; a remuneration committee, with a value of 1 if the remuneration committee exists, and 0 otherwise; and a nomination committee, with a value of 1 if the nomination committee exists, and 0 otherwise. Furthermore, the sum of these three variables indicates the involvement of supervisory committees in governance. This involvement is represented by the variable **Committee**.

Consistent with prior research Akhigbe and Martin [11], Kim et al. [28], Faleye [29] I include firm size (**Cap**), financial leverage (**Leverage**) and market-to-book ratio (**MvBv**) as control variables for the risk analysis. Firm size is measured by the natural logarithm of market capitalization at the end of 2007. Market-to-book ratio is computed as the market capitalization divided by the book value of equity at the end of 2007. Financial leverage is the ratio of long-term debt to total assets.

## Empirical Results

### Descriptive statistics

The statistics are set out in Table 1. The average of total risk, systematic risk and idiosyncratic risk are 0.0173, 0.6320 and 0.0156, respectively. The results on the overall Internet-based voluntary disclosure (**Web**) indicate that the highest score achieved by any company is 0.85, while the lowest is 0.125. The mean value of **Web** is 0.4219. These results suggest that, across the 180 listed companies in the sample, there is widespread variation in the global level of voluntary disclosure via the Internet.

On average, 52.92% of the outstanding shares are held by block holders. With an American sample, Kelton and Yang [30] highlight that the average percentage of capital held by the block shareholders is about 20%. The study of Marston and Polei [31] shows that the average free floats of German listed companies is 42.75%. Compared with their counterparts, French companies have a much higher concentration of capital. In addition, the majority (71.11%) of the sample companies chose the one-tier governance system. On average, the board consists of ten members and 29.96% of the board members are considered as independent directors. Furthermore, 47.78% of the sample firms separate the roles of CEO and chairman.

### Correlation

Table 2 shows the univariate correlation between risk and each explanatory variable. The total risk (**TR**) and idiosyncratic risk (**IR**) are negatively correlated with Web-based disclosure (**Web**), while the systematic risk is positively associated with Internet disclosure.

Overall, total risk and idiosyncratic risk are correlated with the independent variables in a similar way. As shown in the table, they are both negatively related to **Cap** and **Board**. Market risk is negatively associated with **Block**, but positively associated with **Cap**, **Independence**, **Board** and **Committee**. We can observe that some explanatory variables are correlated. For example, Internet disclosure is highly correlated with some governance variables, such as capital

concentration. This can cause the problem of multi collinearity in the multiple regressions. As a result, a robust test is necessary.

### Regression

Table 3 displays the results of the three regression models used to test the hypothesis. The Web-based voluntary disclosure (**Web**) is negatively associated with total risk (Model1-TR), measured by the standard deviation of stock returns. This finding is consistent with prior studies (Patell [5], McNichols and Manegold [6] which indicate that increased disclosure is useful to reduce stock return volatility. Furthermore, **Web** is negatively and significantly associated with idiosyncratic risk (Model2-IR), measured by the standard deviation of the residual in the market model. This result suggests the possibility for listed companies to reduce special risk by revealing more information. Furthermore, the  $R^2$  of the idiosyncratic risk model is higher than that of total risk. It seems that the technology features of Internet disclosure are very powerful in the reduction of stock volatility. There is no significant relationship between systematic risk and Internet-based disclosure (Model 3-SR). Consistent with the study of McNichols and Manegold [6], the systematic risk is not influenced by companies' disclosure level.

The capital concentration (**Block**) is negatively associated with total risk, idiosyncratic risk and market risk in all the models. These finding conflicts with hypothesis 2a, which assumes that block holders have a stronger incentive for risk-taking in order to make a profit.

Consistent with hypothesis 2b, I find that board size has a negative impact on manager's risk-taking behavior. This result supports the assumption that a smaller board is more efficient in monitoring. It is also consistent with the finding of Pathan [17], who indicated that

smaller boards can reduce the manager's risk-averse behavior.

The impact of independent directors on risk-taking is not statistically proven by the regression tests. As Hermalin and Weisbach [32] point out, independent board directors are often thought to play a monitoring role, but their incentives are not clear. The empirical results on the impact of outside directors are generally poor. As a result, these authors confirm that it is not reasonable to assume that a specific board composition is optimal for all firms.

The positive coefficient of **Governance** might indicate that two-tier system companies have a higher level of risk. But this result is not significantly proved by the regression model. The "No result" may confirm the novelty and flexibility of the French Companies Act: there is no general answer about which system is better for corporate governance, and each company should choose a governance system according to its characters and developing environment.

Market capitalization is positively associated with systematic risk but negatively linked to idiosyncratic risk. The monitoring committee power (**Committee**) is positively associated with the risk measures but this result is not statistically proved by the regression model.

The correlation test shows a potential multi collinearity problem that may bias the result of the OLS regression. I address this concern in two ways. First, the variance inflation factor (VIF) is calculated in the Table 4. Indeed, none of the variables show a VIF exceeding 2.95, which is a value much lower than the critical limit of 10 proposed by the study of Neter et al. [33]. Second, I re-estimate the regression using Internet-based disclosure and the variables of governance one at a time. The results show that the signs of the coefficients of Internet disclosure and the governance variables remain the same, as shown in the Table 3. Therefore, the results of the linear regression are reliable.

### Conclusion

The first purpose of this study is to analyze the impact of Internet-based voluntary disclosure on French capital market risk. Second, the relationship between risk and corporate governance factors is tested in a French context. Three measures are used to present the capital market risk: total risk is measured by the standard deviation of stock returns, and systematic risk and idiosyncratic risk are the beta and standard deviation of the residuals generated from the market model, respectively. The web disclosure is measured by a check list of 40 items based on the study of Gajewski and Li [1].

### Results and Implications to Theory and Practice

The empirical results show that the overall level of Internet disclosure is negatively associated with the total risk and the idiosyncratic risk. Furthermore, the  $R^2$  of the idiosyncratic risk model is higher than that of total risk. These findings suggest that listed firms can reduce special risk and limit investors' uncertainty by releasing more information via the Internet. In other words, the technology features of Internet disclosure are very powerful in the reduction of stock volatility. They also provide evidence of the advantages of Internet-based disclosure in comparison with the traditional media, such as the annual report. However, the relationship between Internet-based disclosure and systematic risk is not clear. In general, these finds are consistent with previous studies.

Capital concentration has a negative impact on the total risk and idiosyncratic risk. This finding conflicts with the assumption that block holders have a stronger incentive for risk-taking in order to make a profit. Block holders' outside wealth could be an explanation for this

Variable	Mean	Std. Dev.	Min	Max
<b>Web</b>	0.4219	0.1262	0.1250	0.8500
<b>TR</b>	0.0173	0.0042	0.0090	0.0310
<b>IR</b>	0.0156	0.0041	0.0076	0.0299
<b>SR</b>	0.6320	0.3570	-0.1522	1.4551
<b>Block</b>	0.5192	0.2394	0.0000	1.0000
<b>Governance</b>	0.2889	0.4545	0.0000	1.0000
<b>CEO</b>	0.4778	0.5009	0.0000	1.0000
<b>Independence</b>	0.2996	0.2341	0.0000	0.9000
<b>Board</b>	10.1778	4.2547	3.0000	22.0000
<b>Committee</b>	1.8944	1.1603	0.0000	3.0000
<b>Mv-Bv</b>	2.9382	4.6908	0.7395	61.4239
<b>Leverage</b>	15.9569	12.6508	0.0028	80.5844
<b>Cap</b>	7.0531	1.7473	3.8487	11.9081

The number of observations = 180

**Note:**

- Web:** Score of web disclosure;
- TR:** Total risk is measured as the standard deviation of the daily stock returns during fiscal year 2007;
- IR:** Idiosyncratic risk (generated from the market model);
- SR:** Systematic risk (generated from the market model); **Block:** Proportion of capital held by blocks;
- Governance:** Companies operating the one-tier system are coded by 0, while two-tier companies are coded by 1;
- CEO:** Firms that separate the posts of CEO and chairman are noted as 1, and the others are 0; **Independence:** Proportion of independent directors;
- Board:** Number of board members;
- Committee:** Number of monitoring committees inside the board;
- Mv-Bv:** The market capitalization divided by the book value of equity at the end of 2007; **Leverage:** ratio of long-term debt to total assets;
- Cap:** Ln (market capitalisation);

**Table 1:** Descriptive statistics.

	Variable	<1>	<2>	<3>	<4>	<5>	<6>	<7>	<8>	<9>	<10>	<11>	<12>
<1>	<b>Web</b>	1											
<2>	<b>TR</b>	-0.197 [0.008]	1										
<3>	<b>IR</b>	-0.427 [0.000]	0.927 [0.000]	1									
<4>	<b>SR</b>	0.462 [0.000]	0.48 [0.000]	0.131 [0.081]	1								
<5>	<b>Block</b>	-0.377 [0.000]	-0.233 [0.002]	-0.03 [0.691]	-0.552 [0.000]	1							
<6>	<b>Governance</b>	-0.148 [0.048]	-0.036 [0.636]	-0.01 [0.891]	-0.056 [0.454]	-0.086 [0.252]	1						
<7>	<b>CEO</b>	0.034 [0.648]	-0.115 [0.123]	-0.117 [0.118]	-0.033 [0.659]	-0.077 [0.305]	0.666 [0.000]	1					
<8>	<b>Independence</b>	0.332 [0.000]	0.107 [0.151]	-0.035 [0.638]	0.369 [0.000]	-0.386 [0.000]	-0.069 [0.360]	0.001 [0.993]	1				
<9>	<b>Board</b>	0.486 [0.000]	-0.228 [0.002]	-0.395 [0.000]	0.303 [0.000]	-0.254 [0.001]	0.222 [0.003]	0.238 [0.001]	0.124 [0.096]	1			
<10>	<b>Committee</b>	0.421 [0.000]	-0.011 [0.888]	-0.167 [0.025]	0.38 [0.000]	-0.285 [0.000]	0.069 [0.359]	0.087 [0.244]	0.317 [0.000]	0.501 [0.000]	1		
<11>	<b>Mv-Bv</b>	-0.061 [0.419]	-0.004 [0.958]	0.026 [0.732]	-0.079 [0.294]	0.127 [0.089]	-0.093 [0.216]	-0.092 [0.218]	-0.099 [0.188]	-0.011 [0.885]	0.041 [0.589]	1	
<12>	<b>Leverage</b>	0.032 [0.672]	-0.09 [0.229]	-0.095 [0.203]	-0.025 [0.739]	-0.018 [0.809]	-0.039 [0.601]	-0.101 [0.179]	0.032 [0.670]	0.046 [0.541]	0.049 [0.514]	0.4 [0.000]	1
<13>	<b>Cap</b>	0.725 [0.000]	-0.186 [0.013]	-0.449 [0.000]	0.551 [0.000]	-0.318 [0.000]	-0.089 [0.234]	0.067 [0.368]	0.248 [0.001]	0.628 [0.000]	0.467 [0.000]	0.116 [0.120]	0.093 [0.212]

**Note:**

[p value]

The number of observations = 180

**Web:** Score of web disclosure;

**TR:** Total risk is measured as the standard deviation of the daily stock returns during fiscal year 2007;

**IR:** Idiosyncratic risk (generated from the market model);

**SR:** Systematic risk (generated from the market model);

**Block:** Proportion of capital held by blocks;

**Governance:** Companies operating the one-tier system are coded by 0, while two-tier companies are coded by 1; **CEO:** Firms that separate the posts of CEO and chairman are noted as 1, and the others are 0;

**Independence:** Proportion of independent directors;

**Board:** Number of board members;

**Committee:** Number of monitoring committees inside the board;

**Mv-Bv:** The market capitalization divided by the book value of equity at the end of 2007; **Leverage:** ratio of long-term debt to total assets;

**Cap:** Ln (market capitalisation);

**Table 2:** Pearson correlation coefficients.

negative relationship. As Parrino et al. [34] point out in their study, a manager’s outside wealth has an important effect on his willingness to take risks. Block holders can be influenced in a similar manner. When the concentration of ownership is low, it is possible that shareholders’ wealth is relatively more dispersed. In this condition, they may have stronger incentives for risk-taking to make a profit. In the opposite condition, shareholders should be more motivated to monitor and reduce risk in order to avoid high losses to their wealth. As evidence, the study of Iannotta et al. [35] shows a negative relationship between ownership concentration and insolvency risk.

The board size is negatively related to the risk measures. This result shows that a smaller board is more efficient at monitoring and reducing the manager’s risk-averseness. The percentage of independent directors on a board does not have a significant impact on the risk level [36-40]. It seems that the impact of independent directors is relatively limited in French listed companies. Moreover, the influence of CEO duality and the governance system are not clear according to the regression

models. This result highlights the complexity of defining “good and efficient corporate governance.”

### Limitation and Future Research

This study is not without limitations. It examined a limited number of corporate governance factors that might explain the variation in capital market risk. The composition of monitoring committees, manager holding ownership and other governance factors may also be explanatory variables. Unfortunately, the data are insufficient for the study of these variables in this French sample. Furthermore, a simple market model is used to measure the risk, whereas more sophisticated risk models might have shown more significant results.

Future research could extend the findings of this paper by including more corporate factors and using a longer study period. A study on the impact of the new AFM regulations will be interesting. It is hoped that the findings of this work provide insight into the influence of Internet-

	Model 1-TR			Model 2-IR			Model 3-SR		
	Coef.	t		Coef.	t		Coef.	t	
<b>_cons</b>	<b>0.0266</b>	14.98	***	<b>0.0276</b>	16.93	***	<b>0.3335</b>	2.75	***
<b>Web</b>	<b>-0.0086</b>	-2.44	**	<b>-0.0093</b>	-2.87	***	<b>-0.1291</b>	-0.54	
<b>Block</b>	<b>-0.0062</b>	-4.52	***	<b>-0.0042</b>	-3.36	***	<b>-0.5564</b>	-5.94	***
<b>Governance</b>	<b>0</b>	0.01		<b>-0.0001</b>	-0.07		<b>0.0355</b>	0.57	
<b>CEO</b>	<b>-0.0008</b>	-1.06		<b>-0.0006</b>	-0.8		<b>-0.0823</b>	-1.55	
<b>Independence</b>	<b>0.0012</b>	0.87		<b>0.0006</b>	0.47		<b>0.1484</b>	1.57	
<b>Board</b>	<b>-0.0002</b>	-2	**	<b>-0.0002</b>	-2.02	**	<b>-0.0107</b>	-1.63	
<b>Committee</b>	<b>0.0004</b>	1.26		<b>0.0003</b>	1.16		<b>0.0329</b>	1.59	
<b>Mv-Bv</b>	<b>0.0001</b>	0.9		<b>0.0001</b>	1.45		<b>-0.0053</b>	-1.13	
<b>Leverage</b>	<b>0</b>	-1.6		<b>0</b>	-1.63		<b>-0.0017</b>	-1.02	
<b>Cap</b>	<b>-0.0001</b>	-0.37		<b>-0.0006</b>	-2.32	**	<b>0.1016</b>	5.35	***
<b>Adjusted R<sup>2</sup></b>	<b>0.1696</b>			<b>0.2818</b>			<b>0.4757</b>		
<b>F ratio</b>	<b>4.66</b>			<b>8.02</b>			<b>17.24</b>		

**Note:**

**Web:** Score of web disclosure;

**TR:** Total risk is measured as the standard deviation of the daily stock returns during fiscal year 2007;

**SR:** Systematic risk (generated from the market model);

**IR:** Idiosyncratic risk (generated from the market model);

**Block:** Proportion of capital held by blocks;

**Board:** Number of board members;

**Independence:** proportion of independent directors;

**CEO:** Firms that separate the posts of CEO and chairman are noted as 1, and the others are 0;

**Committee:** number of monitoring committees inside the board;

**Table 3:** Regression.

Variable	VIF
<b>Web</b>	2.46
<b>Block</b>	1.35
<b>Governance</b>	2.12
<b>CEO</b>	1.9
<b>Independence</b>	1.32
<b>Board</b>	2.11
<b>Committee</b>	1.54
<b>Mv-Bv</b>	1.31
<b>Leverage</b>	1.22
<b>Cap</b>	2.95
<b>Mean VIF</b>	1.83

**Governance:** Companies operating the one-tier system are coded by 0, while two-tier companies are coded by 1;

**Cap:** Ln (market capitalisation);

**Leverage:** Ratio of long-term debt to total assets

**Mv-Bv:** The market capitalization divided by the book value of equity at the end of 2007.

The number of observations = 180

\* Significant at the 10% level; \*\* Significant at the 5% level; \*\*\* Significant at the 1% level

**Table 4:** Variance inflation factor (VIF).

based voluntary disclosure on capital market risk in France and will be useful to accounting regulators and policy-makers in their future work.

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