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Why firms listed on an unregulated financial market comply voluntarily with IFRS: An empirical analysis with French data

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Abstract:

This study examines the determinants of voluntary adoption of IFRS by French companies listed on an unregulated financial market. These firms can choose IFRS or the French accounting standards to present their accounts. We analyze the annual reports of 85 French firms listed in 2010 on an unregulated financial market: Alternext. The results reveal that size is an important determinant of the voluntary adoption of IFRS, showing a positive correlation. The percentage of assets in place is also a significant factor: firms with a higher percentage are protected by heavy barriers to entry and they thus voluntarily adopt IFRS. Industry sector shows a negative and significant relationship, as it explains the decision not to adopt IFRS. The following variables are not significant: leverage, internationality, profitability, type of auditor, and ownership concentration. Our findings suggest that without the intervention of regulatory bodies, companies listed on an unregulated financial market will continue to opt for local accounting standards, thereby maintaining the status quo.

Key words: Voluntary adoption; determinants; accounting choices; IFRS; France; unregulated financial market

1. Introduction

On January 1, 2005, international financial reporting standards (IFRS) became compulsory for European companies listed on a regulated financial market. Before this date, it had long been observed that certain firms voluntarily adopted these standards. However, little research has been conducted to determine the characteristics that distinguish such firms from those that maintain local accounting standards. According to Meek *et al.* (1995), however, “Understanding why firms invest in disclosure transparency is useful not only for preparers and users of accounting information but also for regulators.” Moreover, Dumontier and Raffournier (1998) note that “Knowledge of the characteristics of companies which voluntarily adopt a particular set of accounting standards may be of particular interest for standard-setting. It may give an indication of the type of companies which will naturally be in favor of accounting regulation and, adversely, of firms which standard setters will have to convince.” Our objective, therefore, was to fill a gap in the literature by defining the characteristics of those firms that choose IFRS.

When IFRS became compulsory, the European firms affected were those listed on regulated financial markets and presenting consolidated accounts. Today, however, IFRS for SMEs is under debate in Europe, and this will affect many more companies. The International Accounting Standards Board (IASB) published the IFRS for SMEs in July, 2009, in order to simplify the preparation of financial statements in IFRS for smaller companies¹. Then, in a move to modernize its accounting directives (4th and 7th Directives), the European Commission conducted a survey among member countries about the possibility of integrating the IFRS for SMEs into the European legal framework². The organization had already indicated potential improvements by underlining that the financial statement needs of SMEs differed from those of companies listed on a regulated market³, and further emphasized that SME needs were insufficiently taken into account in the standards project. The survey ended in March, 2010. France came out against an extension of the IFRS for SMEs and instead recommended modernizing the French accounting standards (CRC 99-02), which already applied to consolidated accounts. During the first half of 2011, the European Financial Reporting Advisory Group (EFRAG) also responded negatively to a public consultation launched by the Small and Medium Enterprise Implementation Group (SMEIG) of the IASB. At the same time, the French Authority of Accounting Standards (ANC *Autorité des Normes Comptables*), in its strategic plan for 2010-2011 (p. 16), analyzed the IFRS for SMEs and

noted several flaws but agreed to manage the risk of introducing IFRS beyond the current field of listed companies.

Given the strong opposition of French regulators, we investigate the determinants of IFRS adoption for companies listed on an unregulated market. We first reviewed the articles dedicated to IFRS voluntary adoption (e.g., Al-Basketi, 1995; Dumontier and Raffournier, 1998; Murphy, 1999; El-Gazzar et al., 1999; Asbaugh, 2001; Cuijpers and Buijink, 2005; Joachim and Thorsten, 2006; Renders and Gaeremynck, 2007; Zéghal and Sellami, 2010) and identified the relevant variables.

We then studied the annual reports of 85 companies listed in 2010 on Alternext, an unregulated French financial market in which companies have the choice of adopting international accounting standards or keeping the national standards. We find that the rate of voluntary adoption of IFRS is 37.65% on this market. This result brings to light that size remains the essential determinant of the choice to voluntarily adopt IFRS: the bigger the companies are, the more likely they are to adopt IFRS voluntarily.

Another factor appears to be the percentage of assets in place. The industry sector, when it is significant, negatively affects the decision to adopt IFRS. These results thus confirm and extend the findings of previous studies. Size and assets in place are key determinants for any company listed on Alternext and wishing to adopt IFRS. Our findings suggest that without the intervention of regulatory bodies, companies listed on an unregulated market will continue to opt for local accounting standards and the status quo will be maintained.

The article is organized as follows: the next section presents the French regulation framework. Section 3 provides a literature review and the hypotheses relative to the determinants of voluntary adoption of IFRS. The research method and analyses are reported in Section 4. The last section contains a discussion of the results and a conclusion.

2. The French regulation framework

2.1. Financial markets

France has several financial markets in which companies can raise funds. The leaders are Euronext and Alternext.

The NYSE Euronext includes all the companies listed on a regulated market. There are three compartments: the A compartment for capitalizations over 1 billion euros, the B compartment for capitalizations between 150 million and 1 billion euros, and the C compartment for capitalizations under 150 million euros. Companies have to open at least 25% of their capital and present audited and certified accounts over three years. The publication of the annual accounts, the biannual results and the quarterly turnover are compulsory.

NYSE Alternext is an exchange-regulated market with a regulatory regime that is less strict. It is not a regulated market as defined by the Markets in Financial Instruments Directive (MiFID) of April 21, 2004. It is regulated by NYSE Euronext through a body of rules applicable to intermediaries and listed companies. It has been open since May 17, 2005⁴. It was created by NYSE Euronext to meet the needs of SMEs that want simple access to the financial market. To make a public offering, the company has to submit supporting documents (describing its activity and its legal and accounting situation) to obtain the agreement of the Authority of Financial Markets (AMF) and have a floating 2.5 million euro capitalization (15 million on average in the regulated Euronext market). The company has to present its accounts over two years instead of the three years on Euronext. Once listed, the company has to publish certified annual and biannual accounts, but no compulsory biannual results, contrary to what is required in a regulated financial market. The company has a "listing sponsor," a financial specialist who accompanies and helps the company during its initial public offering (IPO) and in the first years that follow.

It should be noted that several SMEs previously listed on the regulated Euronext market (compartments B and C of Euronext) moved to Alternext to escape overly strict statutory constraints⁵.

2.2. Accounting constraints

The constraints and accounting obligations differ, depending on the company listing. Since January 1, 2005, European companies listed on a regulated financial market and presenting

consolidated accounts have had to establish their accounts in IFRS. These companies responded to a legal constraint. On the other hand, unlisted companies presenting consolidated accounts had the choice and could choose to adopt IFRS on January 1 or later.

Companies listed on Alternext could also choose IFRS. Thus, certain companies use international standards (IFRS) and others the national standards (not IFRS). Many factors probably explain the accounting choice in the context of the changes describes above.

3. Reasons for Voluntary Compliance with IFRS: Literature Review and Hypotheses

It appears that firms adopting international standards publish more information than firms adopting local standards (Ashbaugh and Pincus, 2001). According to El-Gazzar *et al.* (1999), “compliance with IAS is a form of expanded disclosure.” Several authors point out the advantages associated with voluntary disclosure: a reduction in agency cost (Jensen and Meckling, 1976; Chow and Wong-Boren, 1987) or in the cost of capital (Choi, 1973; Diamond and Verrecchia, 1991; Lev, 1992). Nevertheless, as underlined by Dumontier and Raffournier (1998), complying with international accounting standards is particularly costly. Therefore, the cost/benefit analysis is fundamental in the choice to adopt a new accounting framework. This is particularly important in the French context (not market-oriented) in which firms have considerable discretion in accounting practices (Dumontier and Raffournier, 1998).

Agency, signaling, political and transaction cost theories allow us to draw hypotheses about the voluntary adoption of IFRS. The literature on voluntary disclosure and the less plentiful literature on voluntary adoption of IFRS are presented, in accordance with the relevant hypotheses.

3.1. Leverage

Agency theory deals with the potential conflicts between shareholders and creditors (Jensen and Meckling, 1976). Conflicts can be explained by asymmetric information: the level and the quality of information is not the same from one agent to the other and investment projects of different quality raise the problem of adverse selection (Akerloff, 1970). The financial structure of the company can thus be a signal sent to creditors (Ross, 1977). As underlined by Zéghal and Mnif Sellami (2010), the more a company goes into debt, the greater the need for

effective control of agency relations between shareholders and creditors. Voluntary information disclosed in financial statements can therefore be used by creditors to control shareholders.

Jaggi and Low (2000) and Michaïlesco (1999) assume a positive association between debt level and the publication of financial information. Heavily indebted companies are attentively followed by creditors who make sure that they do not violate the restrictive clauses imposed on them. This attention prompts these companies to publish more information in order to meet creditors' expectations. Jaggi and Low (2000) distinguish a positive relation between debt and the quantity of financial information published in countries of common law and a negative relation in countries of codified law. Zarzeski (1996) assumes that creditors stay very close to a company and thus have direct access to information. She thus assumes a negative relationship between the debt level and the quantity of published information.

H1: Voluntary adoption of IFRS is positively correlated with leverage.

The empirical studies using agency theory have in fact shown contradictory findings regarding the links between debt level and voluntary disclosure/voluntary adoption of IFRS.

The empirical results of Chow and Wong-Boren (1987), Wagenhofer (1990), Raffournier (1991), Garcia-Benau and Monterrey-Mayoral (1993), Hossain *et al.* (1994), Hossain *et al.* (1995), Raffournier (1995), Inchausti (1997), Depoers (2000) and Chau and Gray (2002) do not support the influence of leverage on the level of disclosure.

Hail (2002) reports a positive and significant relationship between the level of debt and the level of disclosure for Swiss firms. Michaïlesco (1999) confirms the positive relationship between leverage and the quality of information disclosed in the French context. The results obtained by Jaggi and Low (2000) also confirm the relationship obtained by Zarzeski (1996) wherein France, Germany and Japan present a negative link between debt level and the level of information publication (whereas the link is positive for Hong Kong, Norway, the United Kingdom and the United States but significant only for Norway). Meek *et al.* (1995) obtained a negative and significant relationship between debt and global publications for American, British and European multinational companies. Ahmed and Courtis (1999) performed a meta-

analysis, comparing the data from 28 empirical studies on information disclosure. They found that the level of debt indeed explains both the global and voluntary publications of a company.

As regards the studies more specifically focused on the link between debt and the voluntary adoption of IFRS, Dumontier and Raffournier (1998), Murphy (1999) and Renders and Gaeremynk (2007) do not find any relationship between the level of debts and the voluntary adoption of the IFRS. Zéghal and Mnif Sellami (2010) find, on the other hand, that the most heavily indebted French groups try to reduce information asymmetry between shareholders and creditors by voluntary adoption of IFRS.

3.2. Size

According to political cost theory, large companies should publish more information than smaller ones because they are subject to more attentive examination by financial analysts and greater demand from the public (Schipper, 1991). Their ownership often being very diversified, these firms supply detailed and understandable accounting information for a large number of investors, possibly from many countries, whether they are big investors, such as institutional investors, or groups of small shareholders. Big companies are also often more dependent on resources obtained from foreign financial markets (Zarzeski, 1996).

Raffournier (1995) also underline that publishing detailed information is less expensive for big companies because they already publish this information for internal purposes. In addition, Dye (1985) and Craswell and Taylor (1992) suggest that small firm managers, whose annual reports are the only possible information source for their competitors, can be reluctant to publish a great deal of information. Singhvi and Desai (1971) also underline that small firms risk a competitive disadvantage when they voluntarily disclose information. Large firms, which are generally well established, do not have this fear about publishing detailed information, even though it might lead to a negative reaction of the market (Low, 1998).

H2: Voluntary adoption of IFRS is positively correlated with size.
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It seems that, generally, size and voluntary disclosure/voluntary adoption of the IFRS are correlated: the bigger companies are, the more information they disclose or the more likely they are to voluntarily adopt IFRS.

Numerous studies have validated this hypothesis in various contexts. Buzby (1975), and Salamon and Dhaliwal (1980) show the positive influence of size in the United States; Firth (1979) does the same in Canada; McNally *et al.* (1982) in New Zealand; Chow and Wong-Boren (1987) in Mexico; Wallace (1988) in Nigeria; Cooke (1989) in Sweden; Cooke (1991) in Japan; Wallace *et al.* (1994) in Spain; Raffournier (1995) and Hail (2002) in Switzerland; Wallace and Naser (1995) in Hong Kong; Meek *et al.* (1995) for the American, British and European multinationals; and Chau and Gray (2002) in Singapore and in Hong Kong for listed companies. Zarzeski (1996), Salter and Niswander (1995), and Jaggi and Low (2000) also find that size is significantly correlated with the level of accounting information disclosed: big companies reveal more information than smaller ones. Ahmed and Courtis (1999) performed a meta-analysis and found that size explains the level of publication of companies, whether it be voluntary, compulsory or consolidated.

Singhvi and Desai (1971), on the other hand, did not confirm this relationship in their multivariate analysis. Moreover, Leuz and Verrecchia (2000) did not validate the hypothesis of size in the German context. However, by eliminating the variable of “listing on a British or American market” in their regression analysis, they found that size became positively correlated with the publication level. Ball and Foster (1982) indicate that size is used as a variable for testing many types of influence, and Leftwich *et al.* (1981) note that size may mask the impact of industry, political costs, and listing status. However, in an empirical study, Raffournier (1995) chose to remove size as a variable from a multivariate analysis and revealed that size has an impact on the level of publication, although different from the indirect links resulting from correlated variables.

Dumontier and Raffournier (1998) find a positive and significant influence of size on the voluntary adoption of IFRS. This is also the case for Ashbaugh (2001), Cuijpers and Buijink (2005), Renders and Gaeremynck (2007), and Zéghal and Mnif Sellami (2010).

3.3. Internationality

To obtain the resources they need at a lower cost (hiring foreign employees, producing abroad, acquiring assets and raising funds on foreign financial markets), companies need to be "visible" and thus to publish a substantial amount of accounting information in order to reduce their transaction costs. Inchausti (1997) notes that a company listed on several financial markets needs external resources. This may lead to potential conflicts among shareholders, creditors and managers. Publication of information is then used to reduce agency costs and information asymmetry between a company and its current and potential capital providers. Generally, companies listed on foreign financial markets also have to meet various regulations and respond to demands for compulsory information, in addition to that required by the domestic financial market (Dumontier and Raffournier, 1998). This exposes them to higher litigation risks (Van Tendeloo and Vanstraelen, 2005). Moreover, this information tends to become increasingly more sophisticated (Doupnik and Salter, 1995). Firms can also choose to publish more information voluntarily to attract foreign investors more easily and obtain resources at a lower cost. The voluntary adoption of IFRS would thus reduce information asymmetry between managers and shareholders.

Saudagaran (1988) also finds a significant positive relationship between the percentage of sales abroad and the listing status of a company.

H3: Voluntary adoption of IFRS is positively correlated with the level of foreign sales.

H4: Voluntary adoption of IFRS is positively correlated with the listing status.

It appears that both hypotheses relative to the degree of internationalization (listing status and part of sales realized abroad) are validated in a large number of studies: companies listed on foreign markets publish more information, which is valid also for companies having important levels of sales abroad.

Singhvi and Desai (1971), Choi (1973), Firth (1979), Cooke (1989; 1991; 1992), Meek and Gray (1989), Saudagaran and Biddle (1992), Malone *et al.* (1993), Hossain *et al.* (1994),

Meek, Robert and Gray (1995), Inchausti (1997), Zhou (1997), Patton and Zelenka (1997), Street and Bryant (2000), and Leuz and Verrecchia (2000) confirm the significant influence of the listing status (or multiple listings) on the publication of information. Herrmann and Thomas (1996) and Michailesco (1999) report a significant relationship between multiple listings and the quality of published information. Gray *et al.* (1995) find that multinational companies listed on international capital markets publish significantly more voluntary information than multinational companies only listed on their domestic market. On the other hand, Raffournier (1991) and Garcia-Benau and Monterrey-Mayoral (1993) do not observe any relationship between the fact of being listed on a foreign market and the level of publication.

Dumontier and Raffournier (1998) and Murphy (1999) show that Swiss companies listed on foreign markets adopt IFRS more voluntarily than domestic companies do. Cuijpers and Buijink (2005) find an influence of the listing on American markets or the EASDAQ (Nasdaq Europe) on the voluntary adoption of IFRS. Renders and Gaeremynck (2007) find a positive influence of multiple listings on the early adoption of IFRS in common law countries. Zéghal and Mnif Sellami (2010) find a positive influence of the number of listings on foreign financial markets on the decision to voluntarily adopt IFRS.

Raffournier (1995), Zarzeski (1996), Ahmed and Courtis (1999), and Hail (2002) report a positive and significant link between the percentage of sales abroad and the level of publications. Chau and Gray (2002) note a positive link between the percentage of sales abroad and the disclosure of both financial and non-financial information. Garcia-Benau and Monterrey-Mayoral (1993), on the other hand, find no significant influence of the degree of internationalization, nor did Meek, Robert and Gray (1995). Dumontier and Raffournier (1998), Murphy (1999), El-Gazzar *et al.* (1999), Depoers (2000), and Cuijpers and Buijink (2005) demonstrate an influence of the percentage of foreign sales on the voluntary adoption of IFRS, as do Zéghal and Mnif Sellami (2010).

3.4. Profitability

According to signaling theory, the most successful companies should distinguish themselves in order to obtain capital in optimal conditions. This implies voluntary information disclosure (Foster, 1986). According to the theory of political costs, companies with high profits will publish more information to justify their profitability. Conversely, when performance is low,

managers hide the reasons for losses or lower profit. If we assume, in line with Ashbaugh and Pincus (2001), that IFRS implies more information disclosure, we can hypothesize that the most profitable companies will voluntarily adopt IFRS.

H5: Voluntary adoption of IFRS is positively correlated with the level of profitability.
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The studies that analyze the link between profitability and voluntary disclosure/voluntary adoption of IFRS highlight mixed results.

Singhvi and Desai (1971) and Leuz and Verrecchia (2000) validate the hypothesis that the amount of published information rises with the success of a company. Ahmed and Courtis (1999) observe the same for the publication of strictly voluntary information.

Yet, contrary to previous studies, Garcia-Benau and Monterrey-Mayoral (1993), Singhvi and Desai (1971), McNally *et al.* (1982), Malone *et al.* (1993), Meek *et al.* (1995), Patton and Zelenka (1997), Chau and Gray (2002), and Cahan *et al.* (2005) report that this relationship does not appear to be significant in multivariate regression analysis. Michaïlesco (1999) finds no significant relationship between performance and the quality of disclosed information. Wagenhofer (1990), on the other hand, does not validate the inverse hypothesis based on signaling theory, according to which information is used as a mechanism to explain "bad news." Inchausti (1997) obtains a negative and significant link between performance and the level of disclosure but in the opposite way that it was envisaged, quite as Wallace and Naser (1995).

Dumontier and Raffournier (1998) find no significant relationship between profitability and the voluntary adoption of IFRS in Switzerland, nor do Renders and Gaeremynck (2007) for companies belonging to seven common law countries or Zéghal and Mnif Sellami (2010) in the French context.

3.5. Industry

According to Verrecchia (1983), the cost of property rights varies from one industry to another. Moreover, Watts and Zimmerman (1986) suggest that belonging to a specific sector

probably affects the political vulnerability of a company. Industry can thus exercise an influence on voluntary publications: certain subjects are more sensitive for companies in certain sectors (Meek *et al.*, 1995). Moreover, Inchausti (1997) assumes that if a company does not adopt the same disclosure strategy as the other companies in its sector, this can be interpreted by the market as a signal of "bad news," in line with signaling theory.

H6: Voluntary adoption of IFRS is linked with the industry sector to which the company belongs.

The attempt to reveal an industry effect is often limited by the relative heterogeneity of the sectors defined: several classifications are often used, leading to results which cannot be compared from one study to another.

Amernic and Maiocco (1981), Cooke (1989; 1992), Wagenhofer (1990), Meek, Robert and Gray (1995), Wallace and Naser (1995), Zarzeski (1996), Watson *et al.* (2002), Botosan (1997) and Sengupta (1998) find an industry effect with very heterogeneous levels of publication.

Conversely, McNally *et al.* (1982), Wallace *et al.* (1994), Inchausti (1997), and Chau and Gray (2002) do not find any industry influence. The industry variable was not tested by Dumontier and Raffournier (1998), Murphy (1999), El-Gazzar *et al.*, (1999), or Zéghal and Mnif Sellami (2010).

3.6. Type of Auditor

According to Singhvi and Desai (1971) and Firth (1979), large and well-known audit firms (such as the "Big Four") encourage their customers to disclose the maximum of information. According to Dumontier and Raffournier (1998), big audit firms have two reasons for wanting their clients to use IFRS. First, IFRS are strict and high-quality standards that prove their seriousness and independence, and thus strengthen their reputation. Second, big audit firms have a competitive advantage in controlling IFRS applications because of the high-level training of their employees. The voluntary adoption of IFRS would thus increase the volume and quality of information disclosed.

H7: Voluntary adoption of IFRS is positively correlated with auditing by a "Big Four" company.

The studies that analyzed the links between the type of audit firm and the voluntary disclosure/voluntary adoption of IFRS highlight mixed results.

Singhvi and Desai (1971), Craswell and Taylor (1992), Raffournier (1995), Patton and Zelenka (1997), and Inchausti (1997) find a positive and significant relationship between the reputation of the auditor and the level of information publication. In contrast, Firth (1979), Hossain *et al.* (1994), Hossain *et al.* (1995) and Owusu-Ansah (1998) do not find that the type of audit firm is a significant variable to explain the level of publication. Wallace and Naser (1995) indicate a negative and significant relationship between the reputation of the auditor and the level of information disclosed.

Dumontier and Raffournier (1998) and Murphy (1999) do not find that the type of audit firm is a significant variable to explain the voluntary adoption of IFRS in Switzerland. Al-Basteki (1995), Renders and Gaeremynck (2007), and Zéghal and Mnif Sellami (2010) find that voluntary adoption of the IFRS is correlated with the type of audit firm. The type of audit firm is also a determinant of the degree of conformity to IFRS (Street and Gray, 2002; Glaum and Street, 2003).

3.7. Ownership concentration

Agency theory specifies that conflicts may exist between shareholders and managers because of the separation between property and management in companies in which capital is very diffuse (Fama and Jensen, 1983).

Jensen and Meckling (1976) show that managers can be tempted to acquire wealth to the detriment of shareholders. There are thus mechanisms to limit this phenomenon, and the publication of voluntary information falls into this category as it reduces the information asymmetry between shareholders and managers. Companies in which capital is very diffuse thus tend to publish more voluntary information than those whose capital is very concentrated. They will adopt thus more often voluntarily adopt IFRS.

H8: Voluntary adoption of IFRS is negatively correlated with ownership concentration.

The studies that analyzed the links between ownership concentration and voluntary disclosure/voluntary adoption of IFRS highlight mixed results.

Hossain *et al.* (1994), Ho and Wong (2001), Chau and Gray (2002), and Makhija and Patton (2004) find that property concentration is negatively and significantly correlated with the level of voluntary publication. Raffournier (1995), Wallace and Naser (1995), and Depoers (2000) do not report any significant relationship between these variables.

With regard to more specific results concerning the voluntary adoption of IFRS, Dumontier and Raffournier (1998), Renders and Gaeremynck (2007), and Joachim and Thorsten (2006) show that voluntary adoption of IFRS depends on ownership concentration. Cuijpers and Buijink (2005) and Zéghal and Mnif Sellami (2010) do not find any significant link.

3.8. Assets in place

Myers (1977) notes that a company's value is based on the assets in place and the opportunities for growth. He assumes that transfers of wealth are more difficult between shareholders and creditors in companies with a high percentage of assets in place.

Raffournier (1995, p. 265) suggests that “because shareholders can be considered as holders of a call option on the firm's value (Jensen and Meckling, 1976) and because the price of a call option is an increasing function of the risk of the underlying asset (Merton, 1973), managers acting as substitutes of shareholders have an interest to increase the risk of the firm.” Myers (1977) argues that this wealth transfer can be more easily operated through the acquisition of new assets than by replacing those already owned because it is more costly to shift the risk of existing than future assets. According to Raffournier (1995), this indicates that the level of disclosure is negatively correlated with the weight of the fixed assets of the firm. Voluntary adoption of IFRS, which would bring a higher level of publication, would thus be negatively correlated with the weight of fixed assets (assets in place) of the firm.

H9: Voluntary adoption of IFRS is negatively correlated with assets in place.

The studies that analyzed the links between assets in place and voluntary disclosure/voluntary adoption of IFRS do not highlight significant relations.

Empirical research by Chow and Wong-Boren (1987), Hossain *et al.* (1994), Hossain *et al.* (1995), and Raffournier (1995) do not show a significant relationship between assets in place and the level of voluntary publication. Dumontier and Raffournier (1998) find no link between the early adoption of IFRS and a company's capital intensity.

4. Research Method and Analysis

The sample is composed of 118 companies listed on Alternext on December 31, 2010. Among these companies, 4 were eliminated because they were not French, 22 because they presented social or combined accounts rather than consolidated accounts, and 6 because they were in pre-bankruptcy counseling and/or had not published their financial statements over the study period. The final sample is composed of 85 French companies whose data were collected from annual reports published between June 30, 2010 and June 30, 2011.

Certain companies switched their listing market in 2010: at the beginning of the year, they were listed on Euronext and shifted on Alternext in the course of the year. For these companies, the annual report analyzed is the one established while the company was listed on Alternext⁶.

Analysis of the annual reports identified 53 companies using the French accounting standards of the *Comité de Réglementation Comptable* (CRC), whereas 32 companies applied IFRS. Therefore, the rate of voluntary adoption of IFRS is 37.65%.

4.1. Descriptive and univariate analysis

Descriptive statistics and univariate analysis are presented in Tables 1 and 2. The Kolmogorov-Smirnov test of normality indicates that three variables deviate from normality: size, assets in place and listing status. We apply the non-parametric Mann-Whitney U-test to the size and assets in place variables and the Student t-test for other continuous variables: foreign sales, ownership concentration, leverage, profitability (ROA, ROE1, ROE2). Chi-square tests were used for the dichotomous independent variables: listing status, auditor type and industry dummies.

Insert Table 1 - Descriptive statistics and normality test for independent variables (n=85)

Insert Table 2 - Results of univariate analysis for both groups (IFRS versus not IFRS) (n=85)

The Student t-test indicates no difference between the 53 companies using French accounting standards and the 32 companies voluntarily complying with IFRS for the variables following a normal distribution: foreign sales, ownership concentration, leverage, profitability (ROA, ROE1, ROE2). The Mann-Whitney U-test shows differences between the two groups for size and assets in place, the two variables that did not follow a normal distribution. The results show that the companies that voluntarily adopted IFRS are rather large-sized companies and have a high percentage of assets in place. These results support hypotheses H2 and H9.

The Chi-Square test indicates that the listing status explains voluntary adoption of IFRS. Therefore, hypothesis H4 is validated. There is also an industry effect: a positive relationship between industries 4 (health care) and 5 (consumer services) and voluntary IFRS adoption.

The other variables (leverage, foreign sales, profitability, auditor type, ownership concentration, as well as the other industry dummies) are not significant. Hypotheses H1, H3, H5, H7 and H8 are not validated.

4.2. Multivariate analysis

Logistic regressions were performed.

The dependent variable is dichotomous and takes the value of 1 if the company voluntarily adopts IFRS, 0 if otherwise. Factors considered as related to the company's choice to use local standards or IFRS are tested using the binomial logistic regression model (1):

$$P(\text{GAAP}_i) = \beta_0 + \beta_1 \text{FOREIGN SALES}_i + \beta_2 \text{SIZE}_i + \beta_3 \text{OWNERSHIP CONCENTRATION}_i + \beta_4 \text{LEVERAGE}_i + \beta_5 \text{ASSETS IN PLACE}_i + \beta_6 \text{PROFITABILITY}_i + \beta_7 \text{FOREIGN LISTING}_i + \beta_8 \text{AUDITOR TYPE}_i + \beta_{9-18} \text{INDUSTRY dummies}_i + \varepsilon_i \quad (1)$$

Variable definitions:

GAAP = The variable takes the value 1 if the company chose to apply IFRS and 0 if the company used local standards for its annual report.

FOREIGN SALES = % of sales abroad/sales. If the value is missing, it is replaced by the sample mean of % sales abroad/sales.

SIZE = Log SALES and Log ASSETS. Company size measured, respectively, by the decimal logarithm of the total sales and that of the total assets.

OWNERSHIP CONCENTRATION = concentration of the property. The variable is measured by the percentage of shares held by the three most important shareholders (data collected in annual reports or, if missing, on Alternext's site).

LEVERAGE = % Debt/Assets and % Long-term Debt/Assets; debt level of the company measured, respectively, by the total of debts/total assets and the total of long term financial debts/total assets.

ASSETS IN PLACE = book value of fixed assets/total assets.

PROFITABILITY = company performance level measured by the ROA (profit before interests and taxes/total assets), the ROE1 (net profit/equity) and the ROE2 (profit before interests and taxes/equity).

FOREIGN LISTING = Listing on a foreign financial market. The variable takes the value 1 if yes, 0 if no.

AUDITOR (Type) = Nature of the audit firm. The variable takes the value 1 if belonging to the Big Four, 0 otherwise.

INDUSTRY (type) = ICB, company's business sector code. The variable takes the following values: 0 = oil and gas; 1 = basic materials; 2 = industrials; 3 = consumer goods; 4 = health care; 5 = consumer services; 6 = telecommunications; 7 = utilities; 8 = financial companies; 9 = technology

Before applying the logistic regression model, we verified the absence of multicollinearity between independent variables. Pearson correlation coefficients were calculated between independent variables. Results can be found in Table 3.

Insert Table 3 - Pearson correlations between independent variables (n = 85).

We observe rather high and significant correlations (i) between size variables (log sales and log assets), (ii) between profitability variables (ROA, ROE1 and ROE2), and (iii) between the leverage (LT debts/assets) and assets in place. Log assets was retained for the multivariate logistic regression analysis, as was the measure of size, because it was significant in the univariate regression analyses.

Profitability variables were successively introduced into the regression model. ROA showed the highest R^2 and was thus retained. The same variables are significant whatever the profitability variable used. Both LT debt/assets and assets in place presented a strong correlation and were thus successively excluded from the regression analysis. Three models of regression are therefore presented in Table 4: (a) regression with all variables, (b) regression with all variables minus the leverage ratio LT debt/assets, and (c) regression with all the variables minus assets in place.

Insert Table 4 - Logistic regression analysis of IFRS voluntary adoption determinants (n=85)

The results of equation (a) presented in Table 4 show that the decision to adopt IFRS rather than local accounting standards is significantly and positively correlated with the size of the company, foreign listing, assets in place, and industry 4 (health care). It is significantly and negatively correlated with industry 3 (consumer goods) and 7 (utilities) as well as leverage (LT debt/assets).

In model (b), the decision to adopt IFRS rather than local accounting standards is significantly and positively correlated with size, foreign listing and assets in place. It is significantly and negatively correlated with industry 7 (utilities). Industries 3 and 4 are no longer significant. Industry 5 (consumer services) becomes significant: it is negatively correlated with the voluntary adoption of IFRS.

In model (c), the decision to adopt IFRS rather than local accounting standards is significantly and positively correlated with size and foreign listing. It is significantly and negatively correlated with industry 7 (utilities). No other industries explain the voluntary adoption of IFRS.

Of the 32 companies using IFRS, 12 companies left Euronext in 2010 and joined Alternext. From the original 85 companies, we thus removed these 12 companies which had adopted IFRS only because these standards are compulsory on Euronext. The same tests as previously used were thus conducted with these 73 remaining companies, so as to identify the characteristics of companies that had truly been voluntary in choosing to apply IFRS. Of the

73 firms, 20 firms use IFRS whereas 53 use French accounting standards (there are the same as in previous analysis).

Insert Table 5 - Descriptive statistics and normality test for independent variables (n=73)

Insert Table 6 - Results of univariate analysis for both groups (IFRS versus not IFRS) (n=73)

Insert Table 7 - Pearson correlations between independent variables (n = 73)

Insert Table 8 - Logistic regression analysis of IFRS voluntary adoption determinants (n=73)

The results of equation (a) presented in Table 8 show that the decision to adopt IFRS rather than local accounting standards is significantly and positively correlated (i) with size and (ii) assets in place, and is significantly and negatively correlated (iii) with industries 3 (consumer goods), 5 (consumer services) and 7 (utilities).

Insert Table 9 - Comparison of logistic regression results for IFRS voluntary adoption determinants (n=85 and n=73, equation (a))

Listing on a foreign financial market, the level of LT financial debt, and industry 4 (health care) are no longer significant factors of the decision to voluntarily adopt IFRS. On the other hand, industry 5 (consumer services) becomes significant but negatively correlated: therefore, firms belonging to industries 3 (consumer goods), 5 and 7 are less likely to voluntarily adopt IFRS than those in other industries. A comparison of logistic regression results for IFRS voluntary adoption determinants (equation a) is presented in Table 9.

In model (b), the decision to adopt IFRS rather than local accounting standards is significantly and positively correlated with size and assets in place. It is significantly and negatively correlated with industries 5 (consumer services) and 7 (utilities). Industry 3 is no longer significant.

In model (c), the decision to adopt IFRS rather than local accounting standards is significantly and positively correlated with size. It is significantly and negatively correlated with industries 5 (consumer services) and 7 (utilities). No other industries explain the voluntary adoption of IFRS.

5. Discussion and conclusions

The objective of this study is to determine why companies that have the choice voluntarily adopt IFRS. As shown in the literature review, this type of study was also conducted in the pre-IFRS period and served as a source for the variables used in the present study.

We analyzed two sets of companies: the full set of the 85 companies listed on Alternext and the 73 that remained when those firms switching from Euronext were removed. The results show that certain variables are significantly correlated with voluntary adoption in both sets: size, assets in place and industry (see Table 8).

Size appears to be an important determinant. The bigger the firm (measured by its assets), the more likely it is to voluntarily adopt IFRS compared with smaller firms. This conclusion is coherent with previous research. The theory of political costs is thus still highly relevant. We can also advance the cost/benefit argument, as did Raffournier (1995): it is less expensive for a big company to change accounting standards than for a smaller one. From this point of view, nothing has changed between the pre-IFRS and post-IFRS periods.

Firms having important assets in place are more likely to voluntarily adopt IFRS. This result conflicts with the findings of most studies in the literature, particularly those conducted pre-IFRS, which found no significant correlation. It nevertheless validates the hypothesis of Depoers (2000)⁷, according to which “Firms that are protected in their sector by heavy barriers to entry are much more likely to disclose more information than firms that are not”. It

seems to indicate the importance of the amount of investment in fixed assets thus constitutes, quite like size, a real entry barrier for companies wishing to move to international standards.

We also brought to light an industry effect. Companies belonging to the “consumer goods” sector (sector 3) and the “utilities” sector (sector 7) may be less likely to adopt IFRS than companies from other sectors. Most empirical studies have revealed an industry effect but, given that the classifications used are quite heterogeneous, it is very difficult to compare the results. We used the ICB classification. Nevertheless, the results highlight, as underlined by Watson *et al.* (2002), “The importance of controlling fully the impact of industry, otherwise important relationships may be lost.” It would therefore be interesting to standardize the industry variable in order to test for clear and recurrent positive or negative relationships in specific industries.

The determinants of the choice to voluntarily adopt IFRS by companies listed on an unregulated market like Alternext should enlighten the future choices of SMEs with regard to the IFRS specifically for SMEs. Everything will depend on whether or not this standard is implemented in Europe, and more specifically in France, and on the willingness of public authorities to move companies toward international standards. Our results indicate that leaving the choice of IFRS for SMEs to the companies themselves (as is the case today with companies listed on unregulated financial markets) will lead to a status quo, unless the standard is simplified enough and the cost/benefit analysis is positive. Otherwise, only a legal constraint, as was the case in 2005 for companies listed on regulated financial markets, could make them switch to IFRS.

Notes

¹The IFRS for SMEs has fewer reporting requirements than full IFRS.

²Consultation on the international financial reporting standard for small and medium-sized entities, November 2009.

http://ec.europa.eu/internal_market/consultations/docs/2009/ifrs_for_sme/consultation_paper_IFRS_SME_en.pdf

³Communication from the commission on a simplified business environment for companies in the areas of company law, accounting and auditing, July 2007.

http://ec.europa.eu/internal_market/company/docs/simplification/com2007_394_en.pdf

⁴<http://www.euronext.com/landing/equitiesOP-21363-EN.html>

⁵The law n°2009-1255 of October 19th, 2009, and the adaptation by the French Authority of Financial Markets (AMF *Autorité des Marchés Financiers*) of certain articles of this law by the order of November 4th, 2009, indeed made it possible for SMEs listed on Euronext to move to Alternext.

⁶The annual report of one company was not included in the sample: its fiscal year closed too late (31/08/2011).

⁷Depoers (2000) measured barriers to entry by the amount of gross fixed assets. Her hypothesis was not validated.

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Table 1. Descriptive statistics and normality test for independent variables (n=85)

Continuous variables	Total (n=85)			IFRS (n=32)			Not IFRS (n=53)			K-S test for normality two-sample test (IFRS versus Not IFRS)	
	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	Expected sign	z-statistic
FOREIGN SALES	31.2112	28.8110	30.5000	32.3853	29.8751	32.3100	30.5023	30.5000	28.4156	+	0.687
Log SALES	10.3067	1.2116	10.4587	10.4382	1.4471	10.6749	10.2272	10.4414	1.0515	+	1.140
- Log ASSETS	10.6529	0.9572	10.4884	11.0795	1.0304	10.9166	10.3954	10.3825	0.8171	+	1.364**
OWNERSHIP CONCENTRATION	58.6600	20.4935	61.6000	56.8806	24.1883	59.5000	59.7343	62.2000	18.0698	-	0.611
DEBT/ASSETS	53.2974	20.5421	53.2600	53.3328	19.9869	53.0500	53.2760	56.2300	21.0596	+	0.553
LT DEBT/ASSETS	13.0118	14.3568	7.9400	14.6303	13.7709	10.9750	12.0345	6.5600	14.7419	+	0.967
FIXED ASSETS/ASSETS	38.2167	21.4821	35.2500	47.3034	19.4886	42.7800	32.7304	20.9178	27.6900	-	1.886***
ROA	0.7515	15.0542	4.3400	0.6603	11.6159	4.1350	0.8066	5.0600	16.9011	+	0.766
ROE1	-16.0379	80.1436	4.0300	-7.8875	35.2530	5.2150	-20.9589	3.9000	97.8221	+	0.495
ROE2	-2.5469	47.2953	13.1200	-2.2406	34.0773	9.9500	-2.7319	14.1900	54.0461	+	0.769
Dichotomous variables											
FOREIGN LISTING	0.1600	0.3730	0.0000	0.3400	0.4830	0.0000	0.0600	0.2330	0.0000	+	1.283*
AUDITOR	0.4200	0.4970	0.0000	0.4100	0.4990	0.0000	0.4300	0.5000	0.0000	+	0.124
INDUSTRY 0	0.0200	0.1520	0.0000	0.0000	0.0000	0.0000	0.0400	0.1920	0.0000		0.169
INDUSTRY 1	0.0100	0.1080	0.0000	0.0300	0.1770	0.0000	0.0000	0.0000	0.0000		0.140
INDUSTRY 2	0.2500	0.4340	0.0000	0.2800	0.4570	0.0000	0.2300	0.4230	0.0000		0.245
INDUSTRY 3	0.0700	0.2580	0.0000	0.0600	0.2460	0.0000	0.0800	0.2670	0.0000		0.058
INDUSTRY 4	0.0800	0.2770	0.0000	0.1600	0.3690	0.0000	0.0400	0.1920	0.0000		0.529
INDUSTRY 5	0.2400	0.4270	0.0000	0.0900	0.2960	0.0000	0.3200	0.4710	0.0000		1.014
INDUSTRY 6	0.0100	0.1080	0.0000	0.0300	0.1770	0.0000	0.0000	0.0000	0.0000		0.140
INDUSTRY 7	0.0400	0.1860	0.0000	0.0300	0.1770	0.0000	0.0400	0.1920	0.0000		0.029
INDUSTRY 8	0.0700	0.2580	0.0000	0.1300	0.3360	0.0000	0.0400	0.1920	0.0000		0.390
INDUSTRY 9	0.2100	0.4110	0.0000	0.1900	0.3970	0.0000	0.2300	0.4230	0.0000		0.174

Notes: ***, **, * significantly different (two-sided) at 0.01, 0.05 and 0.10, respectively.

Variable definitions:

GAAP = The variable takes the value 1 if the company chose to apply IFRS and 0 if the company used local standards for its annual report.

FOREIGN SALES = % of sales abroad/sales. If the value is missing, it is replaced by the sample mean of % sales abroad/sales.

SIZE = Log SALES and Log ASSETS. Company size measured, respectively, by the decimal logarithm of the total sales and that of the total assets.

OWNERSHIP CONCENTRATION = concentration of the property. The variable is measured by the percentage of shares held by the three most important shareholders (data collected in annual reports or, if missing, on Alternext's site).

LEVERAGE = % Debt/Assets and % Long-term Debt/Assets; debt level of the company measured, respectively, by the total of debts/total assets and the total of long term financial debts/total assets.

ASSETS IN PLACE = book value of fixed assets/total assets.

PROFITABILITY = company performance level measured by the ROA (profit before interests and taxes/total assets), the ROE1 (net profit/equity) and the ROE2 (profit before interests and taxes/equity).

FOREIGN LISTING = Listing on a foreign financial market. The variable takes the value 1 if yes, 0 if no.

AUDITOR (Type) = Nature of the audit firm. The variable takes the value 1 if belonging to the Big Four, 0 otherwise.

INDUSTRY (type) = ICB, company's business sector code. The variable takes the following values: 0 = oil and gas; 1 = basic materials; 2 = industrials; 3 = consumer goods; 4 = health care; 5 = consumer services; 6 = telecommunications; 7 = utilities; 8 = financial companies; 9 = technology

Table 2. Results of univariate analysis for both groups (IFRS versus not IFRS) (n=85)

	IFRS firms (n=32)			Not IFRS firms (n=53)			Student t-test	Mann-Whitney U-test	Chi-square test
	Mean	SD	Median	Mean	SD	Median			
Continuous variables									
FOREIGN SALES	32.3853	29.8751	32.3100	30.5023	30.5000	28.4156	t = 0.290	NA	NA
Log SALES	10.4382	1.4471	10.6749	10.2272	10.4414	1.0515	t = 0.718	NA	NA
Log ASSETS	11.0795	1.0304	10.9166	10.3954	10.3825	0.8171	NA	Z = 2.957***	NA
OWNERSHIP CONCENTRATION	56.8806	24.1883	59.5000	59.7343	62.2000	18.0698	t = - 0.577	NA	NA
DEBT/ASSETS	53.3328	19.9869	53.0500	53.2760	56.2300	21.0596	t = 0.012	NA	NA
LT DEBT/ASSETS	14.6303	13.7709	10.9750	12.0345	6.5600	14.7419	t = 0.806	NA	NA
FIXED ASSETS/ ASSETS	47.3034	19.4886	42.7800	32.7304	20.9178	27.6900	NA	Z = 3.229***	NA
ROA	0.6603	11.6159	4.1350	0.8066	5.0600	16.9011	t = - 0.043	NA	NA
ROE1	-7.8875	35.2530	5.2150	-20.9589	3.9000	97.8221	t = 0.726	NA	NA
ROE2	-2.2406	34.0773	9.9500	-2.7319	14.1900	54.0461	t = 0.046	NA	NA
Dichotomous variables									
FOREIGN LISTING	0.3400	0.4830	0.0000	0.0600	0.0000	0.2330	NA	NA	X ² = 11.958***
AUDITOR	0.0000	0.0000	0.0000	0.4300	0.0000	0.5000	NA	NA	χ ² = 0.063
INDUSTRY 0	0.0300	0.1770	0.0000	0.0400	0.0000	0.1920	NA	NA	χ ² = 1.237
INDUSTRY 1	0.2800	0.4570	0.0000	0.0000	0.0000	0.0000	NA	NA	χ ² = 1.676
INDUSTRY 2	0.0600	0.2460	0.0000	0.2300	0.0000	0.4230	NA	NA	χ ² = 0.323
INDUSTRY 3	0.1600	0.3690	0.0000	0.0800	0.0000	0.2670	NA	NA	χ ² = 0.051
INDUSTRY 4	0.0900	0.2960	0.0000	0.0400	0.0000	0.1920	NA	NA	χ ² = 3.708*
INDUSTRY 5	0.0300	0.1770	0.0000	0.3200	0.0000	0.4710	NA	NA	χ ² = 5.714**
INDUSTRY 6	0.0300	0.1770	0.0000	0.0000	0.0000	0.0000	NA	NA	χ ² = 1.676
INDUSTRY 7	0.1300	0.3360	0.0000	0.0400	0.0000	0.1920	NA	NA	χ ² = 0.025
INDUSTRY 8	0.1900	0.3970	0.0000	0.0400	0.0000	0.1920	NA	NA	χ ² = 2.316
INDUSTRY 9	0.3400	0.4830	0.0000	0.2300	0.0000	0.4230	NA	NA	χ ² = 0.181

Notes: ***, **, * significantly different (two-sided) at 0.01, 0.05 and 0.10, respectively.

NA: Not Appropriate

Table 3. Pearson correlations between independent variables (n = 85)

	FOREIGN LISTING	FOREIGN SALES	Log SALES	Log ASSETS	OWNERSHIP CONCENTRATION	DEBT/ASSETS	LT DEBT/ASSETS	FIXED ASSETS/ASSETS	ROA	ROE1	ROE2	AUDITOR	INDUS TRY 0	INDUS TRY 1	INDUS TRY 2	INDUS TRY 3	INDUS TRY 4	INDUS TRY 5	INDUS TRY 6	INDUS TRY 7	INDUS TRY 8	INDUS TRY 9
FOREIGN LISTING	1.000	0.036	0.031	0.151	-0.086	-0.013	0.175	0.212	-0.145	-0.044	-0.150	0.005	-0.069	0.246*	0.113	-0.122	0.213	-0.172	-0.048	0.259*	-0.122	-0.075
FOREIGN SALES	0.036	1.000	-0.131	-0.108	-0.127	-0.260*	-0.043	-0.127	-0.209	-0.004	-0.073	0.101	0.060	-0.119	0.102	0.061	0.311**	-0.142	0.004	-0.007	-0.233*	-0.049
Log SALES	0.031	-0.131	1.000	0.619**	0.240*	0.329**	-0.167	-0.179	0.396**	0.238*	0.348**	0.058	0.198	-0.128	0.328**	0.152	-0.311**	-0.055	-0.035	-0.071	-0.143	-0.084
Log ASSETS	0.151	-0.108	0.619**	1.000	0.217*	0.303**	0.308**	0.330**	0.205	0.198	0.214*	0.105	0.183	0.037	0.229*	0.110	-0.169	-0.205	-0.165	0.303**	0.242*	-0.306**
OWNERSHIP CONCENTRATION	-0.086	-0.127	0.240*	0.217*	1.000	0.143	0.112	0.052	0.271*	0.121	0.201	-0.141	-0.166	-0.219*	0.145	0.253*	-0.335**	0.034	0.023	0.118	-0.015	-0.052
DEBT/ASSETS	-0.013	-0.260*	0.329**	0.303**	0.143	1.000	0.272*	0.108	0.100	-0.226*	-0.068	0.045	0.204	-0.100	0.092	-0.066	-0.333**	0.012	-0.016	0.208	0.030	-0.002
LT DEBT/ASSETS	0.175	-0.043	-0.167	0.308**	0.112	0.272*	1.000	0.602**	-0.250*	-0.154	-0.179	0.214*	-0.119	-0.022	-0.017	0.017	0.112	-0.035	-0.096	0.430**	0.129	-0.231*
FIXED ASSETS/ASSETS	0.212	-0.127	-0.179	0.330**	0.052	0.108	0.602**	1.000	-0.051	-0.059	-0.083	0.024	-0.142	0.285**	-0.049	0.079	-0.084	-0.049	-0.030	0.310**	0.171	-0.151
ROA	-0.145	-0.209	0.396**	0.205	0.271*	0.100	-0.250*	-0.051	1.000	0.443**	0.774**	-0.266*	-0.027	0.203	0.226*	0.095	-0.585**	0.073	0.037	-0.126	-0.060	0.060
ROE1	-0.044	-0.004	0.238*	0.198	0.121	-0.226*	-0.154	-0.059	0.443**	1.000	0.761**	0.002	-0.015	0.083	0.129	0.069	-0.163	0.037	0.000	-0.092	0.071	-0.127
ROE2	-0.150	-0.073	0.348**	0.214*	0.201	-0.068	-0.179	-0.083	0.774**	0.761**	1.000	-0.155	-0.044	0.113	0.130	0.091	-0.376**	0.158	0.034	-0.209	0.051	-0.067
AUDITOR	0.005	0.101	0.058	0.105	-0.141	0.045	0.214*	0.024	-0.266*	0.002	-0.155	1.000	0.181	-0.094	0.061	-0.143	0.176	-0.083	-0.094	0.094	0.043	-0.095
INDUSTRY 0	-0.069	0.060	0.198	0.183	-0.166	0.204	-0.119	-0.142	-0.027	-0.015	-0.044	0.181	1.000	-0.017	-0.089	-0.043	-0.047	-0.086	-0.017	-0.030	-0.043	-0.080
INDUSTRY 1	0.246*	-0.119	-0.128	0.037	-0.219*	-0.100	-0.022	0.285**	0.203	0.083	0.113	-0.094	-0.017	1.000	-0.062	-0.030	-0.033	-0.061	-0.012	-0.021	-0.030	-0.057
INDUSTRY 2	0.113	0.102	0.328**	0.229*	0.145	0.092	-0.017	-0.049	0.226*	0.129	0.130	0.061	-0.089	-0.062	1.000	-0.158	-0.172	-0.318**	-0.062	-0.110	-0.158	-0.297**
INDUSTRY 3	-0.122	0.061	0.152	0.110	0.253*	-0.066	0.017	0.079	0.095	0.069	0.091	-0.143	-0.043	-0.030	-0.158	1.000	-0.083	-0.153	-0.030	-0.053	-0.076	-0.143
INDUSTRY 4	0.213	0.311**	-0.311**	-0.169	-0.335**	-0.333**	0.112	-0.084	-0.585**	-0.163	-0.376**	0.176	-0.047	-0.033	-0.172	-0.083	1.000	-0.166	-0.033	-0.057	-0.083	-0.155
INDUSTRY 5	-0.172	-0.142	-0.055	-0.205	0.034	0.012	-0.035	-0.049	0.073	0.037	0.158	-0.083	-0.086	-0.061	-0.318**	-0.153	-0.166	1.000	-0.061	-0.106	-0.153	-0.288**
INDUSTRY 6	-0.048	0.004	-0.035	-0.165	0.023	-0.016	-0.096	-0.030	0.037	0.000	0.034	-0.094	-0.017	-0.012	-0.062	-0.030	-0.033	-0.061	1.000	-0.021	-0.030	-0.057
INDUSTRY 7	0.259*	-0.007	-0.071	0.303**	0.118	0.208	0.430**	0.310**	-0.126	-0.092	-0.209	0.094	-0.030	-0.021	-0.110	-0.053	-0.057	-0.106	-0.021	1.000	-0.053	-0.099
INDUSTRY 8	-0.122	-0.233*	-0.143	0.242*	-0.015	0.030	0.129	0.171	-0.060	0.071	0.051	0.043	-0.043	-0.030	-0.158	-0.076	-0.083	-0.153	-0.030	-0.053	1.000	-0.143
INDUSTRY 9	-0.075	-0.049	-0.084	-0.306**	-0.052	-0.002	-0.231*	-0.151	0.060	-0.127	-0.067	-0.095	-0.080	-0.057	-0.297**	-0.143	-0.155	-0.288**	-0.057	-0.099	-0.143	1.000

*** Correlations significant at 0.05 and 0.01, respectively.

Table 4. Logistic regression analysis of IFRS voluntary adoption determinants (n=85)

Independent variables	Expected sign	Model (a) full sample		Model (b) without LT debt/assets		Model (c) without assets in place	
		Coefficient	Wald	Coefficient	Wald	Coefficient	Wald
FOREIGN SALES	+	0.010	0.493	0.010	0.588	0.005	0.190
Log ASSETS	+	3.385	7.778***	2.085	9.323***	2.100	11.583***
OWNERSHIP CONCENTRATION	-	-0.006	0.081	-0.015	0.575	-0.005	0.070
DEBT/ASSETS	+	0.023	0.873	-0.001	0.001	-0.001	0.001
LT DEBT/ASSETS	+	-0.166	4.953**			-0.010	0.138
FIXED ASSETS/ASSETS	-	0.113	8.070***	0.045	6.173**		
ROA	+	0.028	0.471	0.032	0.911	0.012	0.153
FOREIGN LISTING	+	4.013	7.527***	3.253	7.261***	3.099	8.168***
AUDITOR	+	-1.110	1.165	-0.579	0.526	-0.353	0.226
INDUSTRY 0		-25.198	0.000	-22.981	0.000	-23.728	0.000
INDUSTRY 1		9.347	0.000	13.720	0.000	17.201	0.000
INDUSTRY 2		-1.852	2.187	-1.398	1.709	-1.472	2.121
INDUSTRY 3		-4.140	3.005*	-2.135	1.659	-1.651	1.193
INDUSTRY 4		4.843	3.401*	2.424	1.646	1.669	0.964
INDUSTRY 5		-1.924	2.265	-1.902	2.798*	-1.556	2.278
INDUSTRY 6		24.949	0.000	24.510	0.000	24.235	0.000
INDUSTRY 7		-11.601	8.264***	-8.891	9.014***	-7.338	6.963***
INDUSTRY 8		-1.210	0.443	0.004	0.000	0.045	0.001
INDUSTRY 9							
Intercept		-39.784	8.737	-23.546	11.598	-22.274	12.853

Number of firms = 85

Chi-square (χ^2) = 62.728 avec p = 0.000
Nagelkerke's R² = 71.1 %

Chi-square (χ^2) = 56.230 avec p = 0.000
Nagelkerke's R² = 65.2 %

Chi-square (χ^2) = 49.287 avec p = 0.000
Nagelkerke's R² = 59.3 %

***: Significant at 0.01

**: Significant at 0.05

*: Significant at 0.10

Table 5. Descriptive statistics and normality test for independent variables (n=73)

Continuous Variables	Total (n=73)			IFRS (n=20)			Not IFRS (n=53)			K-S test for normality two-sample test (IFRS versus Not IFRS)	
	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	Expected sign	z-statistic
FOREIGN SALES	30.2086	28.71149	30.5000	29.4305	30.2179	29.9550	30.5023	28.4156	30.5000	+	0.496
Log SALES	10.2593	1.2133	10.4587	10.3442	1.59451	10.6749	10.2272	1.0515	10.4414	+	1.211
Log ASSETS	10.6269	0.9566	10.4597	11.2405	1.04647	11.2085	10.3954	0.8170	10.3825	+	1.542**
OWNERSHIP CONCENTRATION	58.0352	19.8808	61.1000	53.5325	23.9740	56.3000	59.7343	18.0698	62.2000	-	0.705
DEBT/ASSETS	53.5203	20.9531	56.2300	54.1675	21.1966	56.1100	53.2760	21.0596	56.2300	+	0.615
LT DEBT/ASSETS	13.5923	14.6990	8.0500	17.7205	14.1163	12.5350	12.0345	14.7419	6.5600	+	1.229*
FIXED ASSETS/ASSETS	37.3340	21.7002	34.5000	49.5335	19.2656	45.5600	32.7304	20.9178	27.6900	-	1.754***
ROA	0.6668	15.9863	4.5100	0.2965	13.6555	4.1350	0.8066	16.9011	5.0600	+	0.924
ROE1	-18.1642	86.0927	4.0300	-10.7585	42.6450	6.6300	-20.9589	97.8221	3.9000	+	0.543
ROE2	-3.7075	50.6305	14.1200	-6.2930	41.3542	11.5300	-2.7319	54.0461	14.1900	+	0.780
Dichotomous variables											
FOREIGN LISTING	0.1100	0.3150	0.0000	0.2500	0.4440	0.0000	0.0600	0.2330	0.0000	+	0.737
AUDITOR	0.4400	0.5000	0.0000	0.4500	0.5100	0.0000	0.4300	0.5000	0.0000	+	0.061
INDUSTRY 0	0.0300	0.1640	0.0000	0.0000	0.0000	0.0000	0.0400	0.1920	0.0000		0.144
INDUSTRY 1	0.0100	0.1170	0.0000	0.0500	0.2240	0.0000	0.0000	0.0000	0.0000		0.191
INDUSTRY 2	0.2300	0.4260	0.0000	0.2500	0.4440	0.0000	0.2300	0.4230	0.0000		0.090
INDUSTRY 3	0.0700	0.2540	0.0000	0.0500	0.2240	0.0000	0.0800	0.2670	0.0000		0.097
INDUSTRY 4	0.0800	0.2770	0.0000	0.2000	0.4100	0.0000	0.0400	0.1920	0.0000		0.618
INDUSTRY 5	0.2500	0.4340	0.0000	0.0500	0.2240	0.0000	0.3200	0.4710	0.0000		1.032
INDUSTRY 6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.000
INDUSTRY 7	0.0400	0.2000	0.0000	0.0500	0.2240	0.0000	0.0400	0.1920	0.0000		0.047
INDUSTRY 8	0.0700	0.2540	0.0000	0.1500	0.3660	0.0000	0.0400	0.1920	0.0000		0.428
INDUSTRY 9	0.2200	0.4170	0.0000	0.2000	0.4100	0.0000	0.2300	0.4230	0.0000		0.101

Notes: ***, **, * significantly different (two-sided) at 0.01, 0.05 and 0.10, respectively.

Table 6. Results of univariate analysis for both groups (IFRS versus not IFRS) (n=73)

	IFRS firms (n=20)			Not IFRS firms (n=53)			Student t-test	Mann-Whitney U-test	Chi-square test
	Mean	SD	Median	Mean	SD	Median			
Continuous variables									
FOREIGN SALES	29.4305	30.2179	29.9550	30.5023	28.4156	30.5000	t = - 0.141	NA	NA
Log SALES	10.3442	1.5945	10.6749	10.2272	1.0515	10.4414	T = 0.365	NA	NA
Log ASSETS	11.2405	1.0465	11.2085	10.3954	0.8171	10.3825	NA	Z = 3.105***	NA
OWNERSHIP CONCENTRATION	53.5325	23.9740	56.3000	59.7343	18.0698	62.2000	t = - 1.192	NA	NA
DEBT/ASSETS	54.1675	21.1966	56.1100	53.2760	21.0596	56.2300	t = 0.161	NA	NA
LT DEBT/ASSETS	17.7205	14.1163	12.5350	12.0345	14.7419	6.5600	NA	Z = 1.843*	NA
FIXED ASSETS/ASSETS	49.5335	19.2657	45.5600	32.7304	20.9178	27.6900	NA	Z = 3.105***	NA
ROA	0.2965	13.6556	4.1350	0.8066	16.9011	5.0600	t = - 0.121	NA	NA
ROE1	-10.7585	42.6450	6.6300	-20.9589	97.8221	3.9000	t = 0.449	NA	NA
ROE2	-6.2930	41.3542	11.5300	-2.7319	54.0461	14.1900	t = - 0.266	NA	NA
Dichotomous variables									
FOREIGN LISTING	0.2500	0.4440	0.0000	0.0600	0.2330	0.0000	NA	NA	$\chi^2 = 5.566^{**}$
AUDITOR	0.4500	0.5100	0.0000	0.4300	0.5000	0.0000	NA	NA	$\chi^2 = 0.015$
INDUSTRY 0	0.0000	0.0000	0.0000	0.0400	0.1920	0.0000	NA	NA	$\chi^2 = 0.776$
INDUSTRY 1	0.0500	0.2240	0.0000	0.0000	0.0000	0.0000	NA	NA	$\chi^2 = 2.687$
INDUSTRY 2	0.2500	0.4440	0.0000	0.2300	0.4230	0.0000	NA	NA	$\chi^2 = 0.045$
INDUSTRY 3	0.0500	0.2240	0.0000	0.0800	0.2670	0.0000	NA	NA	$\chi^2 = 0.148$
INDUSTRY 4	0.2000	0.4100	0.0000	0.0400	0.1920	0.0000	NA	NA	$\chi^2 = 5.068^{**}$
INDUSTRY 5	0.0500	0.2240	0.0000	0.3200	0.4710	0.0000	NA	NA	$\chi^2 = 5.730^{**}$
INDUSTRY 6	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDUSTRY 7	0.0500	0.2240	0.0000	0.0400	0.1920	0.0000	NA	NA	$\chi^2 = 0.055$
INDUSTRY 8	0.1500	0.3660	0.0000	0.0400	0.1920	0.0000	NA	NA	$\chi^2 = 2.868^*$
INDUSTRY 9	0.2000	0.4100	0.0000	0.2300	0.4230	0.0000	NA	NA	$\chi^2 = 0.059$

Notes:

***, **, *: significantly different (two-sided) at 0.01, 0.05 and 0.10, respectively.

No longer companies in industry 6.

NA : Not Appropriate

Table 7. Pearson correlations between independent variables (n = 73)

	FOREIGN LISTING	FOREIGN SALES	Log SALES	Log ASSETS	OWNERSHIP CONCENTRATION	DEBT / ASSETS	LT DEBT / ASSETS	FIXED ASSETS/ASSETS	ROA	ROE1	ROE2	AUDITOR	INDUSTRY 0	INDUSTRY 1	INDUSTRY 2	INDUSTRY 3	INDUSTRY 4	INDUSTRY 5	INDUSTRY 6	INDUSTRY 7	INDUSTRY 8	INDUSTRY 9
FOREIGN LISTING	1,000	0,010	-0,082	0,161	-0,085	-0,104	0,322**	0,301**	-0,245*	-0,106	-0,248*	0,132	-0,059	0,336**	0,014	-0,095	0,374**	-0,201	.a	0,369**	-0,095	-0,186
FOREIGN SALES	0,010	1,000	-0,156	-0,125	-0,069	-0,232*	-0,033	-0,146	-0,220	-0,008	-0,079	0,106	0,071	-0,125	0,174	0,025	0,281*	-0,158	.a	-0,001	-0,269*	-0,044
Log SALES	-0,082	-0,156	1,000	0,596**	0,229	0,308**	-0,217	-0,192	0,382**	0,239*	0,349**	0,079	0,221	-0,134	0,297*	0,111	-0,342**	-0,045	.a	-0,069	-0,040	-0,090
Log ASSETS	0,161	-0,125	0,596**	1,000	0,164	0,334**	0,295*	0,327**	0,206	0,199	0,218	0,125	0,202	0,043	0,160	0,056	-0,181	-0,200	.a	0,334**	0,322**	-0,318**
OWNERSHIP CONCENTRATION	-0,085	-0,069	0,229	0,164	1,000	0,146	0,128	-0,019	0,290*	0,114	0,202	-0,126	-0,180	-0,240*	0,081	0,256*	-0,295*	0,017	.a	0,139	-0,035	0,032
DEBT / ASSETS	-0,104	-0,232*	0,308**	0,334**	0,146	1,000	0,272*	0,149	0,063	-0,248*	-0,094	0,031	0,215	-0,107	0,055	-0,057	-0,327**	-0,001	.a	0,219	0,147	-0,053
LT DEBT / ASSETS	0,322**	-0,033	-0,217	0,295*	0,128	0,272*	1,000	0,635**	-0,281*	-0,161	-0,195	0,195	-0,132	-0,028	-0,070	0,010	0,123	-0,034	.a	0,447**	0,183	-0,246*
FIXED ASSETS/ASSETS	0,301**	-0,146	-0,192	0,327**	-0,019	0,149	0,635**	1,000	-0,038	-0,073	-0,093	0,036	-0,146	0,310**	-0,085	0,095	-0,054	-0,051	.a	0,341**	0,121	-0,150
ROA	-0,245*	-0,220	0,382**	0,206	0,290*	0,063	-0,281*	-0,038	1,000	0,441**	0,773**	-0,293*	-0,026	0,208	0,216	0,106	-0,612**	0,069	.a	-0,127	-0,003	0,063
ROE1	-0,106	-0,008	0,239*	0,199	0,114	-0,248*	-0,161	-0,073	0,441**	1,000	0,759**	0,007	-0,011	0,086	0,122	0,072	-0,155	0,033	.a	-0,088	0,084	-0,129
ROE2	-0,248*	-0,079	0,349**	0,218	0,202	-0,094	-0,195	-0,093	0,773**	0,759**	1,000	-0,165	-0,041	0,116	0,113	0,102	-0,382**	0,164	.a	-0,207	0,083	-0,063
AUDITOR	0,132	0,106	0,079	0,125	-0,126	0,031	0,195	0,036	-0,293*	0,007	-0,165	1,000	0,190	-0,104	0,101	-0,130	0,138	-0,121	.a	0,095	0,088	-0,134
INDUSTRY 0	-0,059	0,071	0,221	0,202	-0,180	0,215	-0,132	-0,146	-0,026	-0,011	-0,041	0,190	1,000	-0,020	-0,092	-0,046	-0,050	-0,096	.a	-0,035	-0,046	-0,089
INDUSTRY 1	0,336**	-0,125	-0,134	0,043	-0,240*	-0,107	-0,028	0,310**	0,208	0,086	0,116	-0,104	-0,020	1,000	-0,065	-0,032	-0,035	-0,067	.a	-0,024	-0,032	-0,062
INDUSTRY 2	0,014	0,174	0,297*	0,160	0,081	0,055	-0,070	-0,085	0,216	0,122	0,113	0,101	-0,092	-0,065	1,000	-0,149	-0,165	-0,315**	.a	-0,114	-0,149	-0,292*
INDUSTRY 3	-0,095	0,025	0,111	0,056	0,256*	-0,057	0,010	0,095	0,106	0,072	0,102	-0,130	-0,046	-0,032	-0,149	1,000	-0,081	-0,155	.a	-0,056	-0,074	-0,144
INDUSTRY 4	0,374**	0,281*	-0,342**	-0,181	-0,295*	-0,327**	0,123	-0,054	-0,155	-0,382**	0,138	-0,050	-0,035	-0,165	-0,081	1,000	-0,171	-0,171	.a	-0,062	-0,081	-0,159
INDUSTRY 5	-0,201	-0,158	-0,045	-0,200	0,017	-0,001	-0,034	-0,051	0,069	0,033	0,164	-0,121	-0,096	-0,067	-0,315**	-0,155	-0,171	1,000	.a	-0,118	-0,155	-0,303**
INDUSTRY 6	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a	.a
INDUSTRY 7	0,369**	-0,001	-0,069	0,334**	0,139	0,219	0,447**	0,341**	-0,127	-0,088	-0,207	0,095	-0,035	-0,024	-0,114	-0,056	-0,062	-0,118	.a	1,000	-0,056	-0,110
INDUSTRY 8	-0,095	-0,269*	-0,040	0,322**	-0,035	0,147	0,183	0,121	-0,003	0,084	0,083	0,088	-0,046	-0,032	-0,149	-0,074	-0,081	-0,155	.a	-0,056	1,000	-0,144
INDUSTRY 9	-0,186	-0,044	-0,090	-0,318**	0,032	-0,053	-0,246*	-0,150	0,063	-0,129	-0,063	-0,134	-0,089	-0,062	-0,292*	-0,144	-0,159	-0,303**	.a	-0,110	-0,144	1,000

*,** Correlations significant at 0.05 and 0.01, respectively.

a. Calculation impossible because at least one variable is an intercept.

Table 8. Logistic regression analysis of IFRS voluntary adoption determinants (n=73)

Independent variables	Expected sign	Model (a) full sample		Model (b) without LT debt/assets		Model (c) without assets in place	
		Coefficient	Wald	Coefficient	Wald	Coefficient	Wald
FOREIGN SALES	+	0.016	0.736	0.014	0.658	0.008	0.239
Log ASSETS	+	4.263	5.495**	2.985	7.309***	2.759	8.462***
OWNERSHIP CONCENTRATION	-	-0.037	2.005	-0.038	2.387	-0.031	1.809
DEBT/ASSETS	+	0.025	0.740	0.007	0.069	0.001	0.001
LT DEBT/ASSETS	+	-0.124	1.924			0.038	1.047
FIXED ASSETS/ASSETS	-	0.117	4.872**	0.061	5.384**		
ROA	+	0.77	1.403	0.066	1.375	0.049	1.164
FOREIGN LISTING	+	1.912	1.091	1.011	0.443	1.264	0.802
AUDITOR	+	-1.259	0.892	-0.532	0.270	-0.467	0.236
INDUSTRY 0		-26.980	0.000	-24.870	0.000	-24.712	0.000
INDUSTRY 1		8.677	0.000	13.307	0.000	17.040	0.000
INDUSTRY 2		-2.515	2.395	-1.926	1.935	-1.831	2.013
INDUSTRY 3		-5.731	2.972*	-3.591	2.219	-2.396	1.284
INDUSTRY 4		6.193	2.565	3.964	2.184	3.001	1.898
INDUSTRY 5		-3.694	4.131**	-3.680	4.334**	-3.138	3.919*
INDUSTRY 6		NA	NA	NA	NA	NA	NA
INDUSTRY 7		-11.742	4.976**	-8.719	5.522**	-7.431	4.705*
INDUSTRY 8		-2.347	0.862	-1.643	0.495	-2.048	1.012
INDUSTRY 9							
Intercept		-48.272	5.893	-33.006	8.402	-28.641	8.887

Number of firms = 73

Chi-square (χ^2) = 48.892 avec p = 0.000
Nagelkerke's R² = 70.6 %

Chi-square (χ^2) = 46.370 avec p = 0.000
Nagelkerke's R² = 68 %

Chi-square (χ^2) = 40.417 avec p = 0.001
Nagelkerke's R² = 61.5 %

***: Significant at 0.01

**: Significant at 0.05

*: Significant at 0.10

Table 9. Comparison of logistic regression results for IFRS voluntary adoption determinants

Independent variables	Expected sign	Model (a) full sample n=85		Model (a) full sample n=73	
		Coefficient	Wald	Coefficient	Wald
FOREIGN SALES	+	0.010	0.493	0.016	0.736
Log ASSETS	+	3.385	7.778***	4.263	5.495**
OWNERSHIP CONCENTRATION	-	- 0.006	0.081	-0.037	2.005
DEBT/ASSETS	+	0.023	0.873	0.025	0.740
LT DEBT/ASSETS	+	-0.166	4.953**	-0.124	1.924
FIXED ASSETS/ASSETS	-	0.113	8.070***	0.117	4.872**
ROA	+	0.028	0.471	0.77	1.403
FOREIGN LISTING	+	4.013	7.527***	1.912	1.091
AUDITOR	+	-1.110	1.165	-1.259	0.892
INDUSTRY 0		-25.198	0.000	-26.980	0.000
INDUSTRY 1		9.347	0.000	8.677	0.000
INDUSTRY 2		-1.852	2.187	-2.515	2.395
INDUSTRY 3		-4.140	3.005*	-5.731	2.972*
INDUSTRY 4		4.843	3.401*	6.193	2.565
INDUSTRY 5		-1.924	2.265	-3.694	4.131**
INDUSTRY 6		24.949	0.000	NA	NA
INDUSTRY 7		-11.601	8.264***	-11.742	4.976**
INDUSTRY 8		-1.210	0.443	-2.347	0.862
INDUSTRY 9					
Intercept		-39.784	8.737	-48.272	5.893

Number of firms = 85

Chi-square (χ^2) = 62.728 avec p = 0.000

Nagelkerke's R² = 71.1 %

***: Significant at the 0.01 level

**: Significant at the 0.05 level

*: Significant at the 0.10 level

Number of firms = 73

Chi-square (χ^2) = 48.892 avec p = 0.000

Nagelkerke's R² = 70.6 %