

Why do you speak English (in your annual report)?

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Abstract

The dominance of English as a *lingua franca* in international business exchanges is so commonly accepted that there has been no investigation into the use of English as an external financial reporting language in non-English speaking countries. In this study we analyze the factors associated with the publication of an English-language annual report in non-English-speaking countries. Using a sample of 3,994 firms from 27 countries in 2003, we find that about 50% of the sample firms issue annual reports in English. Our findings suggest that the decision to publish an English annual report is related to the internationalization process (via foreign sales), language barriers (via language distance and language importance), governance (via ownership structure) and financial concerns (via the need for external financing, capital market size and cross-listing).

Key words

International financial reporting, annual report, language, cost-benefit analysis, logistic regression

Pourquoi parlez-vous anglais (dans votre rapport annuel) ?

Résumé

La domination de l'anglais en tant que *lingua franca* dans les échanges internationaux est tellement acceptée qu'il n'existe aucune étude de l'utilisation de l'anglais dans la communication financière externe dans les pays non Anglophones. Dans cette étude, nous analysons les facteurs associés à la publication d'un rapport annuel en anglais dans des pays non Anglophones. Utilisant un échantillon de 3 994 sociétés provenant de 27 pays en 2003, nous trouvons qu'environ 50 % des sociétés de l'échantillon publient un rapport annuel en anglais. Nos résultats suggèrent que la décision de publier un rapport annuel en anglais est liée au processus d'internationalisation (ventes à l'export), aux barrières linguistiques (distance linguistique et importance de la langue), à la gouvernance (structure de propriété) et à des considérations financières (besoins de financements externes, taille du marché financier local et cotation à l'étranger).

Mots-clés

Reporting financier international, rapport annuel, langue, analyse coûts-bénéfices, langue, régression logistique

1. Introduction

Doctissimo is a company headquartered and listed in Paris, specializing in website and internet platform development for the health sector. At 31 December 2007, it reported sales of USD 16.90 million and net income of USD 8.35 million. One dollar invested in Doctissimo at the beginning of 2006 was worth USD 2.20 by the end of 2006, and USD 4.38 by the end of 2007. One-dollar invested in similar companies in January 2006 was worth an average USD 0.57 in December 2006 and USD 0.98 at the end of 2007. Doctissimo appears then to have been an unusually good investment opportunity.

Korea Line Corporation (KLC) is a provider of maritime transportation services. One dollar invested in KLC (resp. in similar companies) at the beginning of 2006 was worth USD 1.88 (resp. USD 0.97) at the end of 2006, and USD 7.90 at the end of 2007 (resp. USD 1.97). KLC appears to be another example of what analysts call an “alpha generator”, a firm that generated return in excess of reasonable anticipations. Contrary to Doctissimo, KLC is a “large group” with total sales of USD 2.144 billion and USD 0.406 billion of net income¹.

These unusually brilliant stock market performances by Doctissimo and KLC will naturally have attracted the attention of foreign competitors, investors, consulting firms and analysts. They might want to examine the reasons underlying such success, in order to assess the relevance and durability of the two companies’ business models – but both Doctissimo and KLC only publish annual reports in their home country languages (French and Korean respectively). Their reported financial information is thus inaccessible to interested parties who do not understand French or Korean.

Many firms from non-English speaking countries, however, do issue annual reports in English, and this article analyzes the characteristics of these firms. Companies use their annual report to communicate to investors and analysts on both past events and plans for the future. Surveys and other research evidence have documented that the annual report is a vital, though not sufficient, source of information to analysts both in the US and elsewhere (e.g., Chang & Most, 1985; Vergoossen, 1993; Anonymous, 2000). Chang et al. (1983), for example, showed that the annual report was used as a basis for investment decisions. Thomas A. Bowman, CFA, during his testimony to the committee on Governmental Affairs, US Senate, 27 February 2002, remarked that [the job of an analyst] “isn’t simply reading and analyzing *annual reports*. It also involves talking to company management, other company

employees, competitors and others, to get answers to questions that arise from their review of public documents” (Stowe *et al.*, 2007, p. 25). In other words, a necessary but not sufficient condition for an analyst to do his job properly is at least to understand the language of the annual report.

Understanding the factors associated with the choice of English as a financial reporting language is important. The language of the annual report is a crucial ingredient of the international comparability of financial reports. Proponents of accounting harmonization argue that common standards will enhance the comparability of financial statements, improve corporate transparency, and increase the quality of financial reporting (Ball, 2006). As early as 1985, Douppnik and Taylor (1985, p. 27) pointed out that “differences in accounting practices among countries impede the flow of capital across borders necessary for the optimal allocation of scarce resources worldwide”. The notion that differing accounting standards can be a significant barrier to doing business is now commonly accepted², but this general consensus may have blinded researchers to a more basic country characteristic with equivalent impact: language (Harzing & Feely, 2008).

The dominance of English as a *lingua franca* in international business exchanges is so commonly accepted (House, 2002) that very little research has looked into the consequences of using English within firms (Barner-Rasmussen & Björkman, 2005; Fredriksson et al., 2006; Harzing & Feely, 2008), and research on the use of English for external corporate communications is to the best of our knowledge simply non-existent. This may be due to “the preeminence of American researchers who, because of the dominance of the English language, have a reduced perception of the importance of language” (Harzing & Feely, 2008, p. 51)³.

The motivations for using English for external reporting may seem self-evident even for firms from non-English speaking countries. However, we argue that the decision to issue annual reports in English generates costs in addition to the obvious benefits. By using English in their external reporting, firms increase their visibility and investor base. This is the *investor base hypothesis* or Merton’s (1987) *awareness hypothesis*. Under this hypothesis, all the

¹ Source: www.infinancials.com.

² Accounting harmonization has certainly intensified in recent years, with the European Union’s adoption of IAS/IFRS from 2005 and the SEC’s decision in November 2007 not to require reconciliation to US GAAP for financial statements prepared under IAS/IFRS.

³ This article studies the use of English *per se* rather than any difference in content between the local-language annual report and the English-language annual report. Campbell et al. (2005) and Curtis (1995) compared the original versions of annual reports with the published English translations. Although there were differences in readability and volume (number of pages), the contents were identical in both versions.

shareholders of a particular company are informed, but “investors that are not aware of the firm (...) will not become stockholders of the firm” (1987, p. 500). In equilibrium, Merton (1987, p. 500) shows that “an increase in the relative size of the firm’s investor base will (...) increase the market value of the firm”.

The benefit of using English as a reporting language comes as the firm exposes itself to potential investors, raising its investor base and decreasing its value discount. Several factors underlie the positive association between the use of English and an enlargement of the base of potential investors. English is a *lingua franca*: it is the world’s second language (after Mandarin) in terms of speakers⁴, stock exchanges located in English-speaking countries represent 65% of the world stock market capitalization⁵, and 93% of financial analysts who are members of the CFA institute are located in English-speaking countries⁶. We posit that the desire to enlarge the investor base is associated with ownership concentration, external financing needs and country-specific factors (namely, the size of the stock market and the importance of the language).

Using English as a reporting language may also generate direct and indirect costs. Direct costs (mainly the cost of translation) are probably not significant, and are largely outweighed by indirect costs (see Feely & Harzing, 2003, p. 41). First, producing the annual report in English is costly in the sense that communications by the investor relations department must be in English in addition to the local language, as must conference calls and investors’ meetings. Second, the decision to issue an annual report in English is probably a medium-to-long-term commitment. By issuing an annual report in English once, firms are making an implicit commitment to keep on reporting in English. In their survey of CFOs, Graham et al. (2005) find that the main motive for not disclosing information (and the annual report language is a specific type of disclosure) is the desire to avoid setting a disclosure precedent that may be difficult to sustain in the future. Finally, past research (e.g., Courtis & Hassan, 2002; Campbell et al., 2005) has raised the question of the quality of translations of annual reports. For instance, the focus on technical accuracy in translating annual reports may result in statements that are difficult to interpret for native English speakers (Schroeder *et al.*, 1991). Translations of annual reports are less readable for native speakers, and English-speaking investors may face higher information costs (Courtis & Hassan, 2002). We posit that direct

⁴ Source: www.wikipedia.org

⁵ Source <http://www.world-exchanges.org/WFE/home.asp?menu=374&document=4208>

⁶ See www.cfa.institute.com.

and indirect translation costs decrease with firm size, sales internationalization, and US or UK cross-listing.

From a sample of annual reports for 2003 (2004) published by 3,994 (3,844) non-financial companies listed in 27 (27) non-English-speaking countries, we observe that 50.8% (49.5%) publish their annual reports both in their local language and in English. We find that the issuance of an English-language annual report⁷ is related to firm-specific factors as well as country factors. Large firms with diffuse ownership enjoying a high degree of sales internationalization, that are cross-listed in English-speaking countries (the US or the UK) and have large external financing needs (proxied by return on assets, growth opportunities, and leverage ratio) tend to release their annual report in English as well as their local language. The language “importance” (a variable we have created, defined later in this paper), the psychic distance (proxied by the language distance to English), and economic factors, proxied by the size of capital markets, also influence the production of annual reports in English.

Our paper contributes to more than one field of literature. In international management, we contribute to research into the factors influencing the choice of language in multinational companies (Luo & Shenkar, 2006), highlighting the determinants of the decision to use English for financial reporting. Our study is also relevant to the field of international accounting. We provide evidence on factors that lead companies to internationalize the communication of their financial reporting. Past studies essentially focused on the reasons but not the ways companies internationalized their financial reporting (adopted internationally recognized standards) (see Daske *et al.*, 2007).

Our study shows that the decision to issue an English version of the annual report is not random. This finding may have important implications for academics and practitioners. From a practitioner perspective, our results may help to explain the underperformance of industry specialist analysts relative to country specialists, evidenced by Sonney (Forthcoming). Based on a sample of European financial analysts, Sonney (Forthcoming) finds that analysts specializing in a particular country outperform industry specialists in terms of forecast accuracy. One explanation for this finding is that country-specialized analysts benefit from “informational advantages due to proximity, a good knowledge of country-specific factors such as culture, *language* [emphasis added], fiscal policies, and accounting rules”. Our evidence is consistent with this statement. More specifically, our study shows a positive

association between firm size, and foreign sales, on the one hand, and the publication of an English annual report, on the other hand. Fama and French (1992) and Barber and Lyon (1997) document that firm size and market return are negatively correlated for both financial and non-financial firms. In the same vein, past research has documented a (generally non-linear) link between performance and foreign sales (see Ruigrok & Wagner, 2003). If analysts only study companies which issue an English annual report, they may overlook small (or under-internationalized) firms, and consequently fail to integrate certain high-return firms into their market assessments.

From an academic perspective, our study advances understanding of the selection bias that can arise in international studies using the annual report. Multi-country studies based on annual reports often refer to the English version of the report, because it is difficult to work with reports in several different languages. In showing that publication of an English annual report is always associated with certain variables (such as size or internationalization), our study raises awareness of a possible selection bias.

The rest of the paper is organized as follows. In the two following sections, we provide some background on annual report language and develop our hypotheses. We then present our sample and research design, followed by our empirical findings. Finally, we conclude the paper and provide directions for future research.

2. Annual report research: Some background

While the use of a common corporate language within multinationals has already been studied, we have not identified any research into the reasons for the choice of a specific language for external financial reporting. As the annual report is the major channel for external financial reporting, its readability has naturally been the focus of extensive prior research. Based on the methodology proposed by Flesch (1943, 1948), numerous studies investigated the readability of annual reports (Dale & Chall, 1948a, 1948b; see Smith & Smith, 1971; Jones & Shoemaker, 1994; Courtis, 1995 for a review). Readability measures have been applied to many documents, including annual reports, in various countries (Pashalian & Crissy, 1952; Soper & Dolphin Jr, 1964; Smith & Smith, 1971; Barnett & Leoffler, 1979; Jones, 1988; Smith & Taffler, 1992).

⁷ For the sake of simplicity, we use the expression “English annual report” in the rest of this paper, to mean the English-language version of the annual report.

2.1 The use of a common corporate language within multinationals

In this section, we examine language as a key factor in the management of multinational companies (“MNC”). In the internationalization process, unifying the MNC is commonly recognized as a major management task, and a challenging one given the diversity of activities, locations and cultures. Language should thus be considered an important component of the “corporate glue”, as it permeates almost every aspect of the MNC’s business activities (Marschan et al., 1997). Two research streams have focused on questions associated with a common language in the corporate context (Fredriksson et al., 2006): one in international management and the other in international business communication. Both focus on the use of English as a common corporate language.

The international management research stream has tended to look at the use (or non-use) of a common corporate language in international management processes (Feely & Harzing, 2003; Barner-Rasmussen & Björkman, 2005; Piekkari & Zander, 2005). Much of this work is concerned with language proficiency and its implications for social exclusion/inclusion, communication, and power and control in headquarters-subsidary and inter-subsidary relationships within the MNC. Feely and Harzing (2003) detail the three dimensions of the language barrier: language diversity (number of languages spoken within the organization), language penetration (number of functional areas that have to operate with different languages), and language sophistication (the level of language skills required within the organization). Interestingly, Feely and Harzing (2003, p. 39) identify two main purposes within the language penetration dimension: to coordinate an international function (for instance global cash management for the finance function) and to manage a corporate level function (such as legal affairs or public relations). The financial reporting function belongs to the second category. Given the prominent role of English in international business, it is not surprising that many companies opt for English as their common corporate language. The international business communication research stream has focused more on English as a *lingua franca* for internal purposes (e.g., Louhiala-Salminen et al., 2005).

2.2 Publication of an English-language version of the original annual report

Very few studies have investigated language use in external business relationships. We have identified some work on sales negotiations (Planken, 2005) and distributor meetings (Poncini, 2003), but nothing on external financial reporting.

Only a small number of studies focus on the English-language version of the annual report, or include a comparison between the local-language and English-language editions of the

annual report. These few studies do however show that the choice of a given language for financial reporting is not neutral. Campbell et al. (2005) explore content analysis of voluntary disclosure in an international comparison context. They examine the validity of volumetric comparison by recording word and sentence counts, using both the original German documents and English translations published by the German companies themselves. They find that the English rendering of German environmental narrative (the specific topic covered by the research) is generally faithful to the German, suggesting that companies do not discriminate by reporting jurisdiction.

Courtis (1995) examines the readability of the English sections of Hong Kong annual reports. Hong Kong is an especially suitable region for study because of its high profile as one of the world's major commercial and financial centers. Public companies might be expected to make a special effort to produce easy-to-read English prose in such a location. However, the study shows that selected prose passages from Hong Kong companies' annual reports are classified as very difficult-to-read. These results are consistent with the article by Courtis and Hassan (2002) who undertook a bilingual readability study reporting on different language versions of narrative disclosures in annual reports. They compare the English and Chinese versions for Hong Kong firms, and English and Malay versions for Malaysian firms. The results tentatively suggest that the indigenous language version is easier to read than the English translation.

Two main considerations emerge from these studies. First, there is no significant difference in content between a local language annual report and its English translation: firms do not "take advantage" of the English version to report additional information and increase transparency. In other terms, we can study the use of English *per se* because there is no difference in content between the local-language annual report and the English-language annual report. Second, the English translations are more difficult to read, and this may create an indirect cost. When a company publishes an English annual report, it probably widens its investor base but is potentially at risk of sending out a less articulate message to its English-speaking investors.

3. Hypothesis development

As discussed earlier, there are no previous studies analyzing the features of firms deciding to publish an annual report in English, and this study is a first step towards understanding of this issue.

We analyze the decision to issue annual reports in English as the outcome of a cost-benefit analysis. We assume that if a company located in a non-English speaking country decides to publish an English annual report, its aim is to make its annual report more accessible to English speakers, consistent with the *investor base hypothesis* developed by Merton (1987) (see above). This is also consistent with Choi (1991, p. 106) who states that “firms [that attempt] to raise funds abroad at reasonable costs face the choice of how much they wish to accommodate the information needs of investors who are used to providing capital on the basis of reports prepared according to local accounting and reporting norms. In attempting to court investors who may be less tolerant of accounting differences, management can opt to provide foreign readers with 1) accounts that have been restated to the accounting principles of the reader’s country-of-domicile, 2) additional disclosure, 3) enhanced audits, or any combination of the above”. In addition to these three approaches (or any combined approach), our study provides some empirical evidence on a fourth possible way of making the disclosed financial information more “accessible” to investors or potential investors: releasing an English annual report.

The previous literature shows that in order to internationalize, “firms must possess superior assets and skills that can earn economic rents that are high enough to counter the higher cost of servicing these markets. A firm’s asset power is reflected by its size and multinational experience, and skills by its ability to develop differentiated products” (Agarwal & Ramaswami, 1992, p. 4). This is why we expect the benefits of issuing an English annual report to increase with firm size, degree of sales internationalization and external financing needs, and to decrease with ownership concentration, country’s capital market size and language importance.

Firms also incur costs when they choose to produce their annual report in English. These costs are mainly related to the language barrier and can be both direct (translation costs) and indirect. Indirect costs are probably the more significant, and include: (1) an investor relations department able to operate in English, (2) commitment to this practice and (3) potential loss of quality in terms of the message conveyed by the annual report. The cost of publishing an English annual report will decrease with firm size, sales internationalization and US or UK cross-listing, and increase with the language distance between the local language and English.

We develop our hypotheses below.

3.1 Size

In this study, the publication of an English annual report is regarded as a signal that firms are devoting extra effort to internationalizing their financial communication. Firms need asset power to engage in international expansion, and the size of the firm reflects its capability for absorption of the internationalization costs (Agarwal & Ramaswami, 1992). In his study covering more than 14,000 Canadian manufacturers, Calof (1994) concludes that firm size is positively related to the degree of firm internationalization. The same results are also found in Nadkarni and Perez's study (2007). Bonaccorsi (1985) develops a more theoretical analysis of the obstacles preventing small firms' internationalization: limited resources, lack of scale economies and high risk perception regarding international operations. In other words, the expected benefits of an English version of the annual report should increase with size. Another factor can be derived from Dumontier and Raffournier (1998) who refer to Singhvi and Desai (1971): disclosing alternative (i.e., "different" or "unusual") information is costly in general, but less costly for large firms.

Hypothesis 1: The publication of an English annual report is positively related to size.

3.2 Degree of sales internationalization

According to Choi (1991), business internationalization leads the firm into a faster-changing and more competitive context. Raffournier (1995) observes that companies are induced to comply with the usual practices of countries in which they operate. "The more international the operations of a firm, the larger is the inducement" (1995, p. 266).

Many previous studies of international business use international sales as an indicator for the degree of internationalization of a firm (Sullivan, 1994). We think that companies with international sales will be more inclined to publish an English annual report, which as noted above is "more international". Consistent with the signaling theory, firms which operate internationally may benefit from issuing financial statements which can easily be understood by customers, suppliers and governments in those markets (Dumontier & Raffournier, 1998). We therefore expect a positive association between the degree of international sales and the likelihood of publishing an English annual report.

Hypothesis 2: The publication of an English annual report is positively related to the degree of sales internationalization.

3.3 Cross-listing in the US or UK

Choi (1991, p. 105-106) argued that “business enterprises interested in increasing the supply, and reducing their capital costs are increasingly sourcing their external capital needs abroad (...). As a consequence, investment and corporate funding decisions will become increasingly international in scope”. The international accounting differences “could lead to problems of interpretation and understanding when financial statements are read by investors (...) who may not be familiar with foreign accounting and reporting norms (...) In making their investment picks, investors will need some mechanism, either implicit or explicit, for making cross-country comparisons”.

Even if the choice of language is independent of the decision to adopt different accounting policies⁸, we believe that companies listed in the US or the UK will be tempted to publish an English annual report, if only to facilitate understanding of their financial statements by US or UK investors.⁹

Hypothesis 3: The publication of an English annual report is positively related to US or UK cross-listing.¹⁰

3.4 Ownership concentration

Ownership concentration refers to the extent to which a small number of shareholders own a large proportion of share capital. According to Macharzina (1992), “reporting practices are heavily influenced by the ownership patterns of companies”. If ownership is concentrated, the major shareholders will have direct access to insider information through the internal reporting system and will pay less attention to external reporting. In such a context, even if the dominant shareholders are from English-speaking countries, the publication of an English annual report would not be necessary. The expected benefits of issuing an English version of the annual report thus decrease as ownership concentration increases. Ang et al. (2000) have also provided evidence that agency costs are inversely related to the manager’s ownership share and increase with the number of non-manager shareholders. Although this is not

⁸ For example, foreign companies listed in the U. must prepare a 20-F form, which is obviously written in English. However, the annual report of these companies (which is a document different from the 20-F form) can still be written in the local language.

⁹ To test the robustness of our results with regard to this hypothesis, we run the basic model excluding companies listed in the US or the UK. Findings are robust to the exclusion of cross-listed firms from our sample.

¹⁰ Because of data availability and time constraints, it has not been possible to check for cross-listing in other markets than in the US or the UK. However, we believe that this element does not cause a real concern, given that our robustness tests prove that excluding companies listed in the US or the UK does not change our results.

specifically related to ownership concentration, we can infer from these results that companies with diffuse ownership will seek to reduce information risks and agency costs and are more likely to publish an English annual report.

Hypothesis 4: The publication of an English annual report is negatively related to ownership concentration.

3.5 External financing needs

In this section, we analyze the firm-specific factors capturing the external financing needs of firms that influence issuance of an annual report in English. Given that most institutional investors are generally English-speaking and UK or US-based, we predict that communicating in English helps firms to raise funds. This idea is consistent with Merton (1987) who refers to the investor base hypothesis to explain the importance of keeping investors informed. Our general hypothesis is that the expected benefits of publishing an English version of the annual report increase with external financing needs. The firm characteristics used as proxies for external financing needs are: (1) profitability, (2) expected future growth opportunities and (3) the leverage ratio.

All other things being equal, a highly profitable firm generates large free cash flow. This in turn lowers the need for external financing (Higgins, 1977) and the need for an English annual report. Moreover, for profitable firms, communicating in English is less necessary to raise funds, as their financial performance alone should attract investors.

Hypothesis 5a: The publication of an English annual report is negatively related to return on assets.

Prior research has divided firm value into two components (Myers, 1977): the assets-in-place, which are valued independently of the firm's future investment opportunities, and the growth options, which are valued on the basis of the firm's future investment decisions. Given that the value of growth options depends on further discretionary expenditures by managers, this value is subject to far more uncertainty than the value of assets-in-place. Myers (1977) notes that firms with abundant growth opportunities are more likely to be in need of external financing to fund current and future profitable projects. Reporting in English as well as the local language may facilitate fund-raising by enlarging the base of potential investors.

Hypothesis 5b: The publication of an English annual report is positively related to growth opportunities.

Myers and Majluf (1984) show that firms may refuse to issue stock, sometimes choosing to pass up valuable investment opportunities. Their findings are based on the assumptions that (1) managers know more about the firm's value than potential investors and (2) act in the interest of existing shareholders, but also that (3) investors interpret the firm's actions rationally. This model implies that highly-leveraged firms will not seek external equity financing. We expect the use of English as a second reporting language to be linked to the desire to raise equity.

Hypothesis 5c: The publication of an English annual report is negatively related to leverage.

3.6 Language characteristics

Dow and Karunaratna (2006), who study and explain trade flows between 38 nations, stress that differences in languages among countries represent a psychic distance stimulus¹¹ that has received endorsement from virtually every commentator (see also Feely & Harzing, 2003). They add that similarities in languages generate efficiencies in communication, and that there is a tendency for firms to remain within their language groups during their initial expansion as a means of containing risk. Differences in languages between markets tend to increase both the costs and the risks of a transaction.

Like Dow and Karunaratna (2006), we believe that the distance between a given company's own language and English may explain the decision to publish an annual report in English. The greater the distance between the local language and English, the more difficult and costly it may be to prepare an annual report in English.

Hypothesis 6a: The publication of an English annual report is negatively related to the distance between the English language and the language of the countries studied.

Some languages are more "important" than others, a factor we name the "language importance". The importance of a language depends on two things: (1) the population size of the countries in which it is the main language, and (2) the number of countries in which it is the main language (for calculation details, see table 2). By weighting the population according to the number of countries, we can determine the number of financial markets in which the

¹¹ Johanson and Vahlne (1977, p. 24) define the psychic distance as "the sum of factors preventing the flow of information to and from the market" (for developments on this concept, see Dow & Karunaratna, 2006, p. 579).

language is not a barrier. If a company has access to several markets without any language barrier, then it has a potentially broader investor base. The greater the “language importance”, the smaller the benefits of using English in the annual report.

Hypothesis 6b: The publication of an English annual report is negatively related to language importance.

3.7 Market size

To the best of our knowledge, there is no direct evidence of a link between the size of a domestic capital market and decisions by local firms to seek foreign listing. However, intuitively, we believe that when the local capital market is large, all other things being equal, companies do not need to attract investors outside their home country. Conversely, if the local capital market is relatively small, companies may be tempted to seek foreign listing and may therefore publish an annual report in English. This idea is consistent with Merton (1987) who mentions the advantages of developing the firm’s investor base.

Korczak and Bohl (2005), who investigate the implications of cross-listing for companies in the newly-established capital markets of Central and Eastern Europe, stress that companies in this region face small capitalization on local markets, limited liquidity and poor effectiveness of legal systems, all of which can have detrimental effects on stock pricing. This statement reinforces our intuition. We therefore include the following hypothesis:

Hypothesis 7: The publication of an English annual report is negatively related to capital market size.

3.8 Control variable: Economic sector

Extant international business research shows that the decision to internationalize is often industry-specific (Kotha et al., 2001). In particular, since competition between firms varies considerably from one industry to another, firms in different sectors may position themselves differently against their competitors (Mascarenhas, 1986).

This leads us to believe that the sector in which a firm operates can influence the decision to publish an English annual report, even if only to “keep up” with competitors, but we have no prediction regarding the type of influence. We will therefore include the economic sector as a control variable¹².

¹² All hypotheses are summarized in table 2.

4. Sample and research design

4.1 Sample

Our basic sample comprises all companies in the Infinancials database¹³ whose annual report is available for 2003 and 2004. We voluntarily chose to limit the period of study to 2003 and 2004, because the implementation of International Financial Reporting Standards (IFRS) in several of our sample countries in 2005 may create some interference. It is likely that when they first adopted IFRS, some firms also adopted English as an additional language for external reporting purposes. To avoid any artificial increase in English annual reports due to IFRS adoption, we collected data for 2003 and 2004 only.¹⁴

From this initial sample, we first excluded financial, insurance and real estate companies, as their account formats are very different from those of industrial and commercial companies. Second, we deleted all companies from English-speaking countries, where obviously our research question is not relevant, and also many countries with no companies or only one company issuing an annual report in the local language. (These are often countries where British influence has been historically important, e.g., Pakistan, or where the English language is very widely used). This yields a sample of 3,994 companies with annual report data available in 2003 and 3,844 companies in 2004.

Finally, we faced several data availability problems. First, like Raffournier (1995), we lost data because the breakdown of sales by geographical area is not always disclosed, and consequently not included in Infinancials, our main source for this data. Second, a similar problem was encountered for ownership concentration. Third, other financial variables are not available from either Infinancials or Global, our secondary source, for all firms. The final sample thus comprises 1,960 observations for 2003 and 1,881 observations for 2004. Details of determination of the final sample are shown in Table 1.

Insert Table 1 about here

4.2 Research design

This study seeks to explain the choice made by firms as to their annual report language(s). As the outcome is categorical (publication of an annual report in English or not), the binary

¹³ Available at www.infinancials.com.

¹⁴ We are aware that in Germany, firms had the possibility to adopt IFRS before 2005. To test the robustness of our results, we run the basic model excluding German firms. Results are qualitatively unchanged.

logistic regression model can be used for our statistical analysis. We will use the following model:

$$\begin{aligned} \text{Log} \left[\frac{\Pr(\text{English AR} = 1)}{1 - \Pr(\text{English AR} = 1)} \right] = & \alpha_0 + \alpha_1 \text{Size} + \alpha_2 \text{International sales} \\ & + \alpha_3 \text{English cross listing} + \alpha_4 \text{Ownership concentration} + \alpha_5 \text{Return} \\ & + \alpha_6 \text{Growth opportunities} + \alpha_7 \text{Leverage} + \alpha_8 \text{Language distance} \\ & + \alpha_9 \text{Language importance} + \alpha_{10} \text{Market size} + \sum_k \alpha_{11,k} \text{Economic sector} \end{aligned} \quad (1)$$

The variables, proxies used for their computation and predicted signs are presented in Table 2.

Insert Table 2 about here

5. Empirical findings

5.1 Descriptive statistics

Table 3, Panel A presents the descriptive statistics on the dependent variable, English AR, by country for the year 2003, and Panel B reports the equivalent data for the year 2004.

Insert Table 3 about here

50.8% of the companies in our sample issued a report in English in 2003 (49.5% in 2004). Some countries clearly tend to report significantly more in English, mainly the Nordic countries (Denmark, Finland, Norway, Sweden) but also other countries including Switzerland and Israel. Conversely, some countries tend to issue annual reports only in their local language: examples are found particularly in South America (Argentina, Brazil, Chile, Peru) and Asia (Japan, Taiwan).

Table 4 presents descriptive statistics on the independent variables for the basic sample in 2003. We split the variables into two panels: firm-based variables (Panel A), and country-based variables (Panel B).

Insert Table 4 about here

Descriptive statistics for our sample are consistent with figures reported in previous research. For instance, the variable *international sales* (% of international sales in total sales) in Table 4 exhibits a mean of 39% and a median of 30%, as compared with the 36% average in Sullivan's sample (1994, p. 334).

Our descriptive statistics for *ownership concentration* are consistent with La Porta *et al.* (1998). On average (median) the three main shareholders own 51% (51%) of the shares versus 47% (51%) in La Porta *et al.* (1998). Note however that our statistics are based on the ownership structure of all sampled firms (when available), whereas La Porta *et al.* (1998) only provide the median percentage of common shares owned by the largest three shareholders in the ten largest privately-owned non-financial firms.

Other variables are also wide-ranging, illustrating the diversity of companies selected in our sample. For instance, the *leverage* variable (resp. variable *growth opportunities*) ranges from 0.01 (resp. 0.32) to 1.45 (resp. 6.97), with a mean of 0.57 (resp. 1.38). 214 companies (of 1,960) are cross-listed in the US or the UK.

Panel B exhibits the predominance in our 27-country sample of the Spanish and Mandarin languages.

5.2 Univariate tests

In Table 5, we present a correlation matrix in the basic sample with the independent variable, the firm-based and the country-based dependent variables.

Insert Table 5 about here

This matrix shows that the independent variable (English AR) is positively and significantly (at the 0.01 level) correlated with *size*, *international sales*, *English cross-listing*, *growth opportunities* and *market size* and negatively and significantly correlated with *ownership concentration*, *language distance* and *language importance* (at the 0.01 level), and *leverage* (at the 0.05 level). The direction of the correlation is consistent with our hypotheses, with the exception of *market size*. However, the correlation coefficients are low. No conclusion should be drawn before the multivariate analysis.

The independent variables also exhibit some correlation (see Calof, 1994) but no significant correlation coefficient is higher than 41%, which leads us to assume there is no real multicollinearity problem¹⁵.

5.3 Multivariate analysis

5.3.1 Basic analysis

In Table 6, we present the results of our multivariate analysis, based on a logistic regression. Results are reported for three specifications of the equation (1):

¹⁵ We will check the multicollinearity with the VIF.

- Basic sample (model 1)
- Extended sample without *international sales* and *ownership concentration* (model 2)
- Basic sample with dummy variables (industry) (model 3).

We present these three specifications in order to maximize sample size (model 2) and the number of firm-level characteristics (models 1 and 3).

Insert Table 6 about here

We find that all hypotheses are confirmed in the predicted direction (p-value significant at the 0.01 level for all coefficients). *Size*, *international sales*, *English cross-listing*, and *growth opportunities* positively influence the decision to publish an English annual report while *ownership concentration*, *return*, *leverage*, *language distance*, *language importance*¹⁶ and *market size* have a negative impact on this decision¹⁷.

In order to evaluate the goodness of fit of our models, we compute the percentage of correct classification: in-sample (2003) and out-of-sample (2003 coefficients used to predict the 2004 classification). We find that the percentage of correct classification in the sample is very satisfactory (between 74.7% and 77.2% across the models). A naïve model (e.g., all firms publish an English annual report) would correctly classify 50% of observations. Our model clearly outperforms this naïve model. The percentage of correct out-of-sample classification is a little lower than the former percentage, but still very similar (from 74.1% to 74.8% across the models), which is also a good sign.

5.3.2 Robustness checks

In order to strengthen our findings, we run four additional regressions:

- Basic model (1) in 2004
- Basic model (1) in 2004 without *international sales* and *ownership concentration*
- Basic model (1) in 2004 with dummies for industries
- Basic model (1) in 2003 without *English cross-listing* and without the firms listed in the US or the UK.

Our untabulated findings show that the main results hold for all variables.

We also run the basic model (1) in 2003, excluding successively the countries which contain more than 100 observations in the basic sample of 1,960: France (310 observations),

¹⁶ We carried out the same analysis, replacing our measure of language importance by the Global Influence Index devised by Graddol (2000). The results are identical, but there is a collinearity problem with the Market Size variable due to incorporation of economic factors into calculation of the Global Influence Index.

Germany (292), Japan (199) and Sweden (161). Untabulated results are qualitatively unchanged.

5.3.3 Marginal effects

In order to provide an economic interpretation of our results, we have computed the marginal effects after estimation¹⁸. These marginal effects are determined as the means of the independent variables. Table 7 presents the results of this computation.

Insert Table 7 about here

To facilitate interpretation of table 7, we explain how the data should be understood using the example of the size variable. The mean for this variable is 5.567 (column X). At this mean level, an increase of one standard deviation (reported in Table 4) will increase the probability of publishing an English annual report by 11.1%. This marginal effect (column dy/dx) is significant at the 0.01 level.

We notice that overall, all the marginal effects are significant (at the 0.01 level). Several of the variables have a high impact on the probability of publishing an English annual report: an increase in *leverage* by one standard deviation at the mean level will decrease this probability by 46.8%. A similar pattern can be seen with *return* (decrease of 33.4%). As *English cross-listing* is a dummy variable, it is interpreted differently: the fact of being cross-listed in the US or UK (switch in the variable from 0 to 1) will increase the probability of publishing an English annual report by 22.7%.

6. Conclusion and future research

In this paper, we analyze the factors associated with the issuance of an annual report in English in non-English speaking countries. Using a sample of 3,994 (3,844) firms from 27 (27) countries in 2003 (2004), we find that issuance of an English annual report increases with firm size, sales internationalization, US or UK cross-listing, diffusion of ownership and the need for financial resources. It decreases with language distance, language importance and capital market size. Altogether, our findings suggest that the decision to publish an English annual report in non-English-speaking countries is related to the internationalization process (via foreign sales), language barriers (via language distance and language importance),

¹⁷ The VIF measures the degree to which each explanatory variable is explained by the other explanatory variables. Traditionally, collinearity is not considered to be a problem when the VIF does not exceed 10 (Neter *et al.*, 1983). In all our models, the VIFs are lower than two.

¹⁸ -mfx- command of the Stata software.

governance (ownership structure) or financial concerns (via the need for external financing, capital market size and cross-listing).

One important premise underlying this study is that choosing English (in addition to their local language) is important for firms because it may have certain economic consequences, mainly in terms of the ability to raise funds. Communicating in English should help firms from non-English-speaking countries to enlarge their base of potential shareholders, as it should make their financial statements more easily understandable by investors. Our findings are consistent with this view: firms with higher financial needs (high growth opportunity firms, less profitable firms, highly leveraged firms) communicate more in English. Similarly, firms with diffuse ownership, being more likely to welcome institutional investors, more often publish their annual report in English.

Future research would be useful to quantify the economic benefits of releasing English annual reports, for instance by analyzing whether or not companies which publish an English annual report enjoy greater “international” ownership, or succeed in reducing their cost of capital.

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Table 1
Sample data

	Number of observations 2003	Number of observations 2004	Number of countries
Companies with data on annual report language available	13,860	13,211	44
Elimination of financial and insurance companies (SIC code classification: 6)	-931	-861	
Non-financial companies with data on annual report language available	12,929	12,350	44
Elimination of companies in English-speaking countries (Australia, Canada, Hong Kong, India, Ireland, Kenya, Malaysia, New Zealand, Philippines, South Africa, United Kingdom, USA) or countries with zero or only one annual report in the local language (Netherlands Antilles, Egypt, Pakistan, Singapore, Thailand)	-8,295	-7,963	-17
Non-financial companies in non-English-speaking countries with data on annual report language available	4,634	4,387	27
Elimination of outliers (on international sales)	-4	-4	
Non-financial companies in non-English-speaking countries with data on annual report language available	4,630	4,383	27
Firms with missing data (financial variables)	-636	-539	
Extended sample	3,994	3,844	27
Firms with missing data (international sales and ownership concentration)	-2,034	-1,963	
Main sample	1,960	1,881	27

Table 2
Summary of hypotheses, variables, proxies and predicted signs

Hypotheses	Name of variables	Proxies (and sources)	Predicted signs
Dependent variable Publication of an English-language version of the annual report	English AR	Dummy variable coded one if an English-language version of the annual report has been published, zero otherwise. Source: Infinancials database.	N/A
Explanatory variables H1 Size of the firm	Size	Natural logarithm of sales. Sources: Infinancials database (code: 53002) and Global (Standard and Poors) database (mnemonic: SALE).	+
H2 Internationalization	International sales	International sales/Total sales. Source: Infinancials database. (Geographic segment sales: codes: 13540-13549 and 13570-13579).	+
H3 English cross-listing	US or UK cross-listing	Dummy variable coded one if the company is listed in a US market or on the London Stock Exchange, zero otherwise. US source: JPMorgan (www.adr.com – Section: DR Search – Download Universe). UK source: London Stock Exchange (http://www.londonstockexchange.com/en-gb/about/statistics/).	+
H4 Ownership concentration	Ownership concentration	Sum of the percentages of ownership of the first three shareholders. Source: Infinancials database (codes: 11400-11409).	–
H5a Profitability	Return	Return on assets. Sources: Infinancials database (code: 5020) and Global database (mnemonic: ROA). Data winsorized at 0.01.	–
H5b Growth opportunities	Growth opportunities	(Market value + Total debts)/Assets (simplified version of the definition provided by Klein (2002)) Sources: Datastream (market value). Infinancials database (Total debts: code 54022) and Global database (mnemonic: [MKVAL + DT]/AT).	+
H5c Leverage	Leverage	Ratio of financial debts (sum of total long-term debt plus debt in current liabilities) over total assets. Source: Infinancials database (codes: 54022/53077).	–

H6a Language distance	Language distance	Distance between the English language and the main language of each country studied, based on a classification system designed by Grimes and Grimes (1996) and summarized in Dow and Karunaratna (2006). This scale goes one step beyond dummy variables, by acknowledging that some sets of languages are more similar than others and can be grouped together in a hierarchy. The five-point scale is the following: 5 Different families 4 Same family but different branches 3 Same branch but different at the first sub-branch level 2 Same sub-branch at the first level but different at the second level 1 Same language.	–
H6b Language importance and diffusion	Language importance	For each language, we compute: - Language importance (population) (LIP): sum of the percentage of the world population speaking this language (source for the population: World Bank Development Indicators). - Language importance (country) (LIC): number of countries in which this language is spoken. Language importance = $\sqrt{LIP * LIC}$ °.	–
H7 Capital market size	Market size	Natural logarithm of (Market capitalization of listed companies [% of GDP] * GDP [current US\$]) Source: World Bank Development Indicators (Average 2001-2005) (for all countries with the exception of Taiwan). Taiwan Stock Exchange (http://www.tse.com.tw/ch/about/company/download/factbook/2006/web/1.02.htm).	–
<i>Control variables</i>			
Sector	Economic sector	Dummy variables. Source: Infinancials (Standard Industrial Classification (SIC) Code) (code: 20004).	N/A

°We compute the square root because we multiply two measures. Unpublished results with language importance defined as $LIP * LIC$ are qualitatively similar.

Table 3
Descriptive statistics on the dependent variable: Companies publishing an English annual report in 2003 or 2004, by country

Panel A: 2003						
Country	Local N	English N	Total N	Local %	English %	Total %
Argentina	35	6	41	85.4	14.6	100
Austria	10	28	38	26.3	73.7	100
Belgium	11	53	64	17.2	82.8	100
Brazil	112	25	137	81.8	18.2	100
Chile	81	12	93	87.1	12.9	100
China	72	105	177	40.7	59.3	100
Denmark	26	53	79	32.9	67.1	100
Finland	11	84	95	11.6	88.4	100
France	221	140	361	61.2	38.8	100
Germany	194	275	469	41.4	58.6	100
Greece	15	52	67	22.4	77.6	100
Indonesia	65	36	101	64.4	35.6	100
Israel	2	33	35	5.7	94.3	100
Italy	55	81	136	40.4	59.6	100
Japan	709	482	1,191	59.5	40.5	100
Mexico	26	29	55	47.3	52.7	100
Netherlands	18	114	132	13.6	86.4	100
Norway	20	74	94	21.3	78.7	100
Peru	35	1	36	97.2	2.8	100
Portugal	22	8	30	73.3	26.7	100
South Korea	4	31	35	11.4	88.6	100
Spain	47	39	86	54.7	45.3	100
Sweden	56	123	179	31.3	68.7	100
Switzerland	25	101	126	19.8	80.2	100
Taiwan	89	31	120	74.2	25.8	100
Turkey	2	13	15	13.3	86.7	100
Venezuela	2	0	2	100.0	0.0	100
Total	1,965	2,029	3,994	49.2	50.8	100

Panel B: 2004						
Country	Local N	English N	Total N	Local %	English %	Total %
Argentina	33	8	41	80.5	19.5	100
Austria	8	29	37	21.6	78.4	100
Belgium	10	50	60	16.7	83.3	100
Brazil	108	19	127	85.0	15.0	100
Chile	85	8	93	91.4	8.6	100
China	74	107	181	40.9	59.1	100
Denmark	23	55	78	29.5	70.5	100
Finland	11	76	87	12.6	87.4	100
France	170	125	295	57.6	42.4	100
Germany	180	259	439	41.0	59.0	100
Greece	20	44	64	31.3	68.8	100
Indonesia	60	43	103	58.3	41.7	100
Israel	4	31	35	11.4	88.6	100
Italy	57	79	136	41.9	58.1	100
Japan	729	453	1,182	61.7	38.3	100
Mexico	34	22	56	60.7	39.3	100
Netherlands	14	102	116	12.1	87.9	100
Norway	21	75	96	21.9	78.1	100
Peru	29	1	30	96.7	3.3	100
Portugal	19	11	30	63.3	36.7	100
South Korea	11	23	34	32.4	67.6	100
Spain	50	29	79	63.3	36.7	100
Sweden	62	121	183	33.9	66.1	100
Switzerland	24	102	126	19.0	81.0	100
Taiwan	102	16	118	86.4	13.6	100
Turkey	2	15	17	11.8	88.2	100
Venezuela	1	0	1	100.0	0.0	100
Total	1,941	1,903	3,844	50.5	49.5	100

Local = local-language annual report only.

English = local-language annual report + English annual report.

Table 4
Descriptive statistics for independent variables with the basic sample in 2003

Panel A Independent firm-based variables

	Number of observations	Mean	Standard deviation	Minimum	p25	Median	p75	Maximum
Size	1,960	5.57	2.16	-3.17	4.11	5.44	6.96	11.95
International sales	1,960	0.39	0.37	0.00	0.00	0.30	0.74	1.00
English cross-listing	1,960	0.11	0.31	0.00	0.00	0.00	0.00	1.00
Ownership concentration	1,960	0.51	0.27	0.01	0.27	0.51	0.74	0.95
Return	1,960	0.00	0.12	-0.59	-0.01	0.03	0.06	0.25
Growth opportunities	1,960	1.38	0.73	0.32	0.97	1.17	1.55	6.97
Leverage	1,960	0.57	0.22	0.01	0.42	0.59	0.72	1.45

See definition of variables in Table 2.

Panel B Independent country-based variables

Country	Main language	Language distance	Language importance	Market size
Argentina	Spanish	5	9.19	25.22
Austria	German	2	2.50	24.82
Belgium*	Dutch	2	0.92	26.40
Brazil	Portuguese	5	3.04	26.28
Chile	Spanish	5	9.19	25.18
China	Mandarin	5	7.86	27.16
Denmark	Danish	3	0.29	25.52
Finland	Finnish	5	0.29	25.93
France	French	5	1.94	27.97
Germany	German	2	2.50	27.69
Greece	Greek	4	0.61	25.39
Indonesia	Indonesian	5	1.86	24.63
Israel	Hebrew	5	0.33	25.11
Italy	Italian	5	0.96	27.19
Japan	Japanese	5	1.42	28.77
Mexico	Spanish	5	9.19	25.73
Netherlands	Dutch	2	0.92	27.01
Norway	Norwegian	3	0.27	25.41
Peru	Spanish	5	9.19	23.64
Portugal	Portuguese	5	3.04	24.77
South Korea	Korean	5	0.87	26.64
Spain	Spanish	5	9.19	27.27
Sweden	Swedish	3	0.38	26.40
Switzerland*	German	2	2.50	27.32
Taiwan	Mandarin	5	7.86	26.91
Turkey	Turkish	4	1.06	25.07
Venezuela	Spanish	5	9.19	22.35

See definition of variables in Table 2.

*Multi-lingual countries: For Belgium, we chose the language spoken by the majority of the population: Dutch (Flemish) (see <http://www.nationmaster.com/country/be-belgium/lan-language>), and for Switzerland, we chose German (see http://www.swissworld.org/en/people/language/language_distribution).

Table 5

Univariate tests: Correlation matrix between dependent and independent variables with the basic sample in 2003

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) English AR										
(2) Size	0.323 (0.000)									
(3) International sales	0.273 (0.000)	0.191 (0.000)								
(4) English cross-listing	0.217 (0.000)	0.408 (0.000)	0.132 (0.000)							
(5) Ownership concentration	-0.242 (0.000)	-0.101 (0.000)	-0.143 (0.000)	-0.152 (0.000)						
(6) Return	0.032 (0.162)	0.310 (0.000)	-0.041 (0.067)	0.071 (0.002)	0.084 (0.000)					
(7) Growth opportunities	0.126 (0.000)	-0.143 (0.000)	0.076 (0.001)	0.034 (0.137)	-0.037 (0.101)	0.034 (0.136)				
(8) Leverage	-0.052 (0.021)	0.320 (0.000)	0.059 (0.009)	0.046 (0.043)	0.066 (0.003)	-0.154 (0.000)	-0.115 (0.000)			
(9) Language distance	-0.227 (0.000)	0.069 (0.002)	-0.231 (0.000)	0.080 (0.000)	-0.008 (0.725)	0.145 (0.000)	-0.068 (0.003)	0.000 (0.985)		
(10) Language importance	-0.269 (0.000)	-0.042 (0.063)	-0.304 (0.000)	0.012 (0.606)	0.223 (0.000)	0.126 (0.000)	-0.075 (0.001)	-0.075 (0.001)	0.274 (0.000)	
(11) Market size	0.093 (0.000)	0.263 (0.000)	0.102 (0.000)	0.058 (0.011)	-0.239 (0.000)	-0.083 (0.000)	-0.079 (0.001)	0.111 (0.000)	-0.001 (0.952)	-0.186 (0.000)

See definition of variables in Table 2.

N = 1,960.

p-values in parentheses.

Table 6

Logistic regressions – Dependent variable: English annual report

	Predicted signs	Model 1: Basic model - 2003			Model 2: Expanded model - 2003			Model 3: Basic model with dummies - 2003		
		Coefficients	z	p	Coefficients	z	p	Coefficients	z	p
Size	+	0.537	13.660	0.000	0.651	21.848	0.000	0.560	13.584	0.000
International sales	+	0.797	4.728	0.000				0.806	4.568	0.000
English cross-listing	+	1.469	4.358	0.000	1.170	6.385	0.000	1.376	4.102	0.000
Ownership concentration	-	-1.582	-6.960	0.000				-1.627	-6.959	0.000
Return	-	-1.611	-2.828	0.005	-3.180	-7.047	0.000	-1.465	-2.536	0.011
Growth opportunities	+	0.581	6.171	0.000	0.655	9.214	0.000	0.567	6.013	0.000
Leverage	-	-2.255	-7.706	0.000	-2.069	-10.778	0.000	-2.308	-7.635	0.000
Language distance	-	-0.390	-8.532	0.000	-0.495	-14.190	0.000	-0.382	-8.343	0.000
Language importance	-	-0.152	-6.123	0.000	-0.156	-8.840	0.000	-0.161	-6.215	0.000
Market size		-0.154	-3.306	0.001	-0.310	-9.588	0.000	-0.211	-4.304	0.000
Industry effects		Not included			Not included			Included		
Constant		4.700	3.638	0.000	7.655	8.650	0.000	5.043	3.605	0.000
Number of observations		1,960			3,994			1,934		
Chi square		418.187			769.018			411.694		
p(chi2)		0.000			0.000			0.000		
Nagelkerke R-square		0.301			0.290			0.312		
Correctly classified in sample		76.378			74.737			77.249		
Classified correctly out of sample		74.535			74.163			74.801		

See definition of variables in Table 2.

Table 7

Marginal effects

	Basic model - 2003		Marginal effects		
	Coefficients	dy/dx	z	p	X
Size	0.537	0.111	13.760	0.000	5.567
International sales	0.797	0.165	4.763	0.000	0.392
English cross-listing (d)	1.469	0.227	6.853	0.000	0.109
Ownership concentration	-1.582	-0.328	-6.999	0.000	0.515
Return	-1.611	-0.334	-2.823	0.005	0.004
Growth opportunities	0.581	0.121	6.259	0.000	1.381
Leverage	-2.255	-0.468	-7.717	0.000	0.571
Language distance	-0.390	-0.081	-8.515	0.000	3.796
Language importance	-0.152	-0.032	-6.050	0.000	2.370
Market size	-0.154	-0.032	-3.307	0.001	26.854
Constant	4.700				

(d) for discrete change of dummy variable from 0 to 1