THE EFFECTS OF THE IAS/IFRS ADOPTION IN THE EUROPEAN

UNION ON THE COST OF EQUITY: FIRST EVIDENCE FROM THE

BANK INDUSTRY

Abstract

The effect of disclosure level on the cost of equity is a matter of considerable interest and importance to the financial reporting community.
In this research, I examined the effects of the IAS/IFRS adoption in Europe on the cost of equity capital relative to the bank industry.
Previous research has shown that the adoption of the IAS/IFRS reduces information asymmetry between investors and firms. Economic theory claims that a commitment to increased level of disclosure reduces the cost of capital component that arises from information asymmetries.
This study shows empirically that the increase in the level of disclosure provided by the IAS/IFRS leads effectively to a lower cost of capital. From a practical point of view, these findings provide evidence that the Regulator's purpose of fostering a cost-efficient functioning of the capital market for firms could be considered as reached. Furthermore, they point out that firms which implemented the IAS/IFRS have gained a comparative advantage on the equity market relatively to firms still adopting accounting standards based on the IV and VII European Directives.
This research also examined whether accounting standardization at a European level had reduced cross-country differences in the cost of equity. The adoption of the same accounting standard set within the Community was expected to improve comparability, eliminate accounting measurement errors in pricing firms and, in such a way, reduce cross-country differences in the cost of equity. This hypothesis did not find empirical support and alternate explanations for such a result were provided. The first is that flexibility still allowed by the IAS/IFRS with regard to some accounting treatments could hamper a perfect comparability among firms. The second one is that convergence in the cost of equity may require more time than that covered by this research. The third one is that while, on the one hand, accounting standardization has eliminated measurement errors in assessing firms' risk reducing differences in their cost of equity, on the other hand, the IAS/IFRS adoption has exerted an opposite effect on the cost of equity improving firms' level of disclosure, allowing investors to better differentiate among firms' risk, hence increasing cost of capital variability.

Key Words: *Mandatory accounting changes, Cost of equity capital, International accounting standards*

Data Availability: *I/B/E/S/ database, Datastream database, Firms' website*

Ph.D. in BUSINESS ADMINISTRATION and MANAGEMENT

The Effects of the IAS/IFRS Adoption in the European Union on the Cost of Equity:
First Evidence from the Bank Industry

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1. INTRODUCTION

This research aims at investigating the effect of the international accounting standards IAS/IFRS adoption in Europe on the capital market.

This study takes into consideration the explicit goal that the European Regulator intended to achieve by introducing the IAS/IFRS in the European Union and then tests empirically whether it has succeeded in reaching its purpose.

Since the explicit aim of the Regulator is that of *"contributing to the efficient and cost-effective functioning of the capital market"*, the hypotheses developed in this research directly relate accounting changes to the cost of capital and, in particular, to the cost of equity. This approach permits an immediate comprehension of costs or benefits of the new regulation for firms which have been required to apply it.

The effect of accounting changes on market behaviour is of direct interest to accounting policy makers for evaluating the usefulness of the changes required in financial reporting, comparing costs and benefits of the new regulation and make informed tradeoffs between value-added disclosures and costs associated with their production and dissemination.

However, the relationship between the level of disclosure and the cost of capital is also one of the major topics in contemporary accounting thought, according to which a firm's greater commitment to disclosure

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reduces the specific component of the cost of capital that arises from information asymmetries. This study also aims at contributing to the development of such a thought with empirical evidence.

Two hypotheses are developed in this research.

The first one claims that the IAS/IFRS adoption leads to a reduction in the cost of equity because of the higher level of disclosure they require.

The second one states that accounting standardization at a European level leads to a reduction of cross-country differences in the cost of equity. Regulation No. 1606/2002 has as its objective to ensure a high degree of comparability among Community companies enabling them to compete on an equal footing for financial resources available in the capital markets. In this sense, accounting standardization is expected to reduce measurement errors in pricing firms attributable to differences in domestic accounting sets.

Since the accounting standardization provided by the European Regulator and involving all the European Union member states represents a new and extraordinary event, there is no previous research on this specific topic. As a consequence, the methodology employed to test the research hypotheses is the result of a wide literary review in different research streams, some of which have detected the market impact of accounting changes by using either a valuation approach or the CAPM theory, others have focused on the relative informativeness

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of different accounting standard sets, others again have focused on the relationship between information asymmetry and the cost of capital.

The cost of equity is estimated by using the Gordon growth model approach with growth in earnings and the research methodology is based either on univariate analysis or multivariate regression.

The empirical analysis is carried out with reference to the bank industry, which has long been at the centre of a lively debate over the advisability for banks of adopting the IAS/IFRS and the fair value accounting specifically. Therefore, focusing on the bank industry permits to test the effects of the IAS/IFRS implementation with specific regard to a sector for which, so far, related benefits have long been questioned. More over, differently from most of research in this field, this study is able to test value-relevance differences between different accounting sets with regard to the same sample. This circumstance should ease attribute differences found in the cost of equity to the IAS/IFRS implementation.

The remainder of this paper is organized as follows. Section 2 provides a motivation for research, while Section 3 is relative to the research hypotheses development. In Section 4 a literary review is presented. Section 5 explains the research methodology, whereas Section 6 presents the results of univariate analysis and multivariate regressions. In the last section a summary of results is provided and conclusions are drawn.

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2. MOTIVATION FOR RESEARCH

Each of the major constituencies has a vital interest in prices of a firm's securities and the effect of information on prices: investors, regulators, management, auditors and information intermediaries. This interest arises because of the economic consequences associated with security prices. Information influences investor's behaviour with respect to portfolio selection. Changes in prices of a security affect the terms on which the firm obtains additional financing. This, in turn, can affect the cost of capital and alter the nature of the projects undertaken.

The primary concern of financial reporting regulators is investors, broadly defined to include creditors. The investors' orientation is partially motivated by concern over the welfare of the investors and the "fairness" of the security markets in which they trade. Perceived adversities and inequalities may happen to investors because of informational deficiencies.

However, financial reporting regulators also share a concern over the effects of information on resource allocation and capital formation. Fuller disclosure is considered to lead to a more efficient allocation of resources because investors are in a more informed position to judge where they funds can be used most productively and profitably, given the risk involved.

Some also argue that fuller disclosure provides a more favourable climate for capital formation because of its effect on a perceived fairness

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of the market. Investors are said to be more willing to invest funds in the market if there is greater disclosure and less risk of fraud or misrepresentation about the productive opportunities of the firm issuing the securities. The subsequent marketability of the securities is a function of the perceived fairness of the exchange markets. If the exchange market is efficient with respect to a rich, comprehensive information system, investors have less concern over the information asymmetries at the time they buy and sell their shares and are more willing to invest in the market. In this perspective, financial reporting is expected by regulators to play a fundamental role in reducing information asymmetries.

Actually, prominent corporate and accounting disasters, focused in the United States but apparent elsewhere, has demonstrated the devastating effects that diminished investor confidence can have on economies. A sustained period of diminished confidence in capital markets proves damaging in terms of economic growth, job creation and personal wealth. Values of pension funds, heavily invested in the equity markets, fall and place retirement savings at risk. Questions can rise regarding the solvency of banks that have investments in capital and property markets and corporations find it more difficult and costlier to go to the markets for capital. With economic performance weak, governments reduce tax base and face budget constraints to pursue fiscal priorities in a climate when demands on public services are growing. Corporate

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scandals are not the sole cause of the economic slowdown, but it is also clear that good accounting, in which markets have confidence, is a fundamental building block for successful capital markets.

Good accounting rests on standards that are consistent, comprehensive and based on clear principles which enable financial reports to reflect underlying economic reality. Unfortunately, accounting regulations throughout the world have shown to be incomplete or insufficient to address the complexities of the modern market. For example, currently there is no national standard in Europe that addresses accounting for financial instruments in a comprehensive fashion, even as the use of derivatives proliferates among all corporate sectors.

As technology advances, business practices change, and lessons are learned from experience, accounting standards must evolve in the hope of providing investors with more accurate and useful financial information. Nevertheless, in recent years, accounting has failed to keep up with the pace of change of the global economy. Some argues that this has partly been due to the fact that accounting has only gradually moved away from the traditional cost-based model developed for the economy of the post-industrial revolution era to one relying more on real-time, market values, more appropriate for a modern service-based economy.

Capital flowing freely across borders also calls for modernization in the accounting systems. Up to now, financial statements from different

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countries have not been immediately comparable because of the diversity of national accounting requirements and financial analysts have often relied on broad "rules of thumb" in comparing financial statements and a great deal of professional judgement. In a recent report on accounting policies adopted by the world's major airlines, KPMG expressed concern that *"the degree of divergence in accounting policies and levels of disclosure complicates analyses and may lead to incorrect interpretations and conclusions"* (KPMG Report 2001). As a result, international capital markets demand financial statements that can readily be understood and compared irrespective of the country of origin of the companies concerned.

Differences in national accounting requirements have been caused by a variety of social, economic and legal circumstances and by different countries keeping in mind the needs of different users of financial statements when setting national accounting standards. Some countries, like the U.S., have developed accounting requirements that focus more on shareholders and mandate fair value accounting. Conversely, in Europe, the IV and VII Directives have provided an accounting system that focuses on debt holders and placed a greater emphasis on creditor protection. So far, the European accounting system has relied upon historical recoverable cost criterion and mandated that prudence prevails over accrual. Furthermore, the IV and VII directives specified minimum reporting requirements and allowable options. Since the

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member states has kept substantial flexibility in enacting provisions complying with the directives into national law, a variety of domestic factors, such as tax-based incentives for accounting method choice or the desire to reduce union demands for higher wages or shareholder demands for higher dividends has influenced accounting method choices. As a consequence, many commentators have questioned the real harmonising effect of the directives on measurement practice.

2.1. Regulation No. 1606, 19 July 2002, of the European Parliament and of the Council on the application of international accounting standards

One important step in the modernization process of the existing accounting model in Europe is represented by the European Parliament and Council's Regulation No. 1606, 19 July 2002, on the application of international accounting standards (hereinafter also IAS/IFRS).

As recognised by the Regulator itself, *"directive 78/660/EEC of 25 July 1978 on the annual accounts of certain types of companies, Council Directive 83/349/EEC of 13 June 1983 on consolidated accounts, Council Directive 86/635/EEC of 8 December 1986 on the annual accounts and consolidated accounts of banks and other financial institutions and Council Directive 91/674/EEC of 19 December 1991 on the annual accounts and consolidated accounts of insurance companies <u>cannot</u> <u>ensure</u> <u>the high level of transparency</u> <u>and comparability of financial reporting from all publicly traded Community</u> <u>companies which is a necessary condition for building an integrated capital</u>*

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market which operates effectively, smoothly and efficiently. It is therefore

necessary to supplement the legal framework applicable to publicly traded

companies".

In order to contribute to a better functioning of the internal market,

Regulation No. 1606/2002 "*has as its objective the adoption and use of*

international accounting standards in the Community with a view to

harmonising the financial information presented by the companies referred to in

Article 4 [companies governed by the law of a member state with

securities admitted to trading on a regulated market of any member

state] *in order to ensure a high degree of transparency and comparability of*

financial statements".

In its preface, the regulator specifies that its aim is that of "*contributing to*

the efficient and cost-effective functioning of the capital market. The protection

of investors and the maintenance of confidence in the financial markets is also

an important aspect of the completion of the internal market in this area. This

Regulation reinforces the freedom of movement of capital in the internal market

and helps to enable Community companies to compete on an equal footing for

financial resources available in the Community capital markets, as well as in

world capital markets".

In order to reach these purposes, "*publicly traded companies must be*

required to apply a single set of high quality international accounting standards

for the preparation of their consolidated financial statements". Therefore, for

each financial year starting on or after 1 January 2005, companies

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governed by the law of a member state have to prepare their consolidated accounts in conformity with the international accounting standards adopted within the Community if, on their balance sheet date, their securities are admitted to trading on a regulated market of any member state. The regulator has also provided an option for member states to permit or require the application of international accounting standards in the preparation of annual accounts and to permit or require their application by unlisted companies (see Appendix 1 for IAS implementation in annual accounts by EU member states).

As already mentioned, the explicit purpose that the regulator wants to achieve by introducing the IAS/IFRS accounting systems is that of ensuring a high degree of transparency and comparability of financial statements and, hence, an efficient functioning of the Community capital market and of the Internal Market. Therefore, according to this regulation, the adoption of international accounting standards within the community should provide both a high degree of transparency of financial statements *per se* and a high degree of comparability of financial statements among different countries previously using different accounting standards.

The international accounting standards which the Regulator refers to are the International Accounting Standards IAS/IFRS. Art. 2 states that *"for the purpose of this Regulation 'international accounting standards' shall mean International Accounting Standards (IAS), International Financial Reporting*

Standards (IFRS) and related Interpretations (SIC-IFRIC interpretations), subsequent amendments to those standards and related interpretations, future standards and related interpretations issued or adopted by the International Accounting Standards Board (IASB)".

The European Commission must approve the IAS/IFRS adopted within the Community. Art. 3, relative to the adoption and use of international accounting standards, states that *"the Commission shall decide on the applicability within the Community of international accounting standards. The international accounting standards can only be adopted if they are not contrary to the principle set out in Article 2(3) of Directive 78/660/EEC and in Article 16(3) of Directive 83/349/EEC and are conducive to the European public good and they meet the criteria of understandability, relevance, reliability and comparability required of the financial information needed for making economic decisions and assessing the stewardship of management"*. In September 2003, the Commission issued Regulation No. 1725/2003 which adopted all the IAS in existence except for IAS 32, *"Financial instruments: disclosure and presentation"*, IAS 39 *"Financial instruments: recognition and measurement"* and a small number of interpretations related to these standards. The main opposition to the adoption of the IAS 32 and 39 came from banks, which were afraid of an increase in volatility in their financial report results and of the consequences in terms of capital requirements provided by the Basel Accord. Finally, the European Commission endorsed the IAS 39 in November 2004, even with some "carved out"

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sections relative to the full fair value option and of certain hedge accounting provisions, and the IAS 32 in December 2004.

2.2. The International Accounting Standards

The IAS/IFRS are issued by the International Accounting Standards Board ("IASB").

In the preface to its *"Framework for the preparation and presentation of financial statements"*, the IASB states that *"although financial statements may appear similar from country to country, there are differences which have probably been caused by a variety of social, economic and legal circumstances and by different countries having in mind the need of different users of financial statements while setting national requirements. These different circumstances have led to the use of a variety of definitions of the elements of the financial statements: that is, for example, assets, liabilities, equity, income and expenses. They have also resulted in the use of different criteria for the recognition of items in the financial statements and in a preference for different bases of measurement. The scope of the financial statements and the disclosure made in them have also been affected"*. Taking into consideration these facts, *"the International Accounting Standards Board is committed to narrowing these differences by seeking to harmonise regulations, accounting standards and procedures relating to the preparation and presentation of financial statements"*.

Therefore, one of the main aims of the IASB is that of narrowing cross-country differences among financial statements by issuing standards

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and procedures relating to the financial statement preparation and presentation that can be adopted at an international level. As pointed out by Sir David Tweedie, Chairman in the International Accounting Standards Board, *"through this convergence project, the IASB and national standard setters will reduce many relatively minor differences in standards that may lead to rather different financial results for similar economic transactions"* (White paper *"German Capital Market: Achievements and Challenges"*, Deutsche Bourse, 2005).

In the effort to realize such a convergence project, the IASB underlines that *"financial statements are most commonly prepared in accordance with the accounting model based on recoverable historical costs and the nominal financial capital maintenance concept"*. However, *"other models and concepts may be more appropriate in order to meet the objective of providing information that is useful for making economic decisions".*

As cleared up by Sir Tweedie, *"the IASB and partner standard setters are tackling some of the fundamental challenges facing accounting today in order to make the accounting model relevant. For too long, earnings have been smoothed in an effort to show investors a steady upward trajectory of profits. While this approach provides a simple and understandable model, it simply is not consistent with reality. Publicly traded companies are complex entities, engaged in a wide range of activities and subject to different market pressures and fluctuations. Accounting should reflect these fluctuations and risks. The focus on providing a steady stream of earnings only distorts the picture and*

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encourages practices that run counter to the aims of providing investors with accurate information.

The current direction we are taking will be, what I like to call, "tell it like it is" accounting. This means an increasing reliance on fair values, when these values can be determined accurately. Financial results therefore may become more volatile. However, hiding the truth from investors will only make the shocks that markets receive more severe.

The implication of this transformation in accounting is great. Assets and liabilities, when obligations exist, will be brought back on the balance sheet. The last 20 years have seen a number of attempts by companies to remove assets and liabilities from balance sheets through transactions that may obscure the economic substance of the company's financial position. This is particularly the case in four areas that warrant mention, each of which has the potential to hide the extent of a company's financial position. Companies can use all or any of the following: leases, securitizations, unconsolidated entities (special purpose entities), and pensions. These all represent legitimate operating practices, but it is also the case that in most cases the risk entailed is not recognized fully on the balance sheet of the company. When an obligation then must be met, investors can be caught by surprise".

Actually, the IASB's approach to financial reporting is much closer to the U.S. regulation than to the European IV and VII directives. The IASB focuses more on equity investors and conceives financial reporting in a more dynamic way. Conversely, the IV and VII directives have been

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concerned with the protection of debt holders and, as a consequence, mandated more conservative evaluation methods. Prudence has prevailed over accrual and historical cost has been the basic criterion for financial reporting. It must however be mentioned that these directives have been recently modified by directives No. 2001/65 and 2003/51 in order to allow member states to permit companies, or certain classes of companies, to evaluate specified categories of assets at amounts determined by reference to fair value.

Paragraph 28 of the *"Framework for the Preparation and Presentation of the Financial Statements"* explains that *"information on the financial position and the past performance is frequently used as a basis for the forecast of the future financial position and performance and other matters in which users are directly interested, such as dividends, security price movements and the ability of the enterprise to meet its commitments as they fall due. To have a predictive value, information need not be presented in the form of an explicit forecast. The ability to make predictions from financial statements is enhanced, however, by the manner in which information on past transaction and events is displayed"*. Paragraph 17 specifies that *"information about the performance of an enterprise (...) is required in order to assess potential changes in the economic resources that it is likely to control in the future. Information about performance is useful in predicting the capacity of the enterprise to generate cash flows from the existing resource base. It is also useful in forming*

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judgements about the effectiveness with which the enterprise might employ
additional resources".

In order to meet such commitments, the IAS/IFRS require a fuller disclosure than the IV and VII directives. The IAS/IFRS have adopted the approach of forcing to write and explain everything or, as defined by Mr. Tweede, "to tell like it is". The entire liability, for instance, has to be on the balance sheet; all the companies being controlled, even when they carry out different activities, have to be fitted within the consolidated area and have to be consolidated line by line; assets must or can be written at their fair value, when this value can be determined accurately. As a result, companies are forced by the IAS/IFRS to restore clearer economic meaning to the financial statements that the old accounting principles have widely dimmed and to fully disclose the risk entailed in their operations.

The choice of the fair value accounting by the IASB must also be considered in this perspective. The fair value accounting is expected to provide investors with information useful in order to predict the capacity of firms to generate cash flow from the existing resource base. Fair value is defined as *"the amount for which an asset could be exchanged, or a liability settles, between knowledgeable, willing parties in an arm's length transaction".*

By adopting the fair value accounting, the concept of income changes from an income produced to that of a mixed income which also

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includes potential revenues. The concept of net capital is divested of its strictly juridical connotation and takes a more economic meaning. The introduction of the fair value makes net capital converge toward its current value. On the one hand, *commodity assets* must or can be written at their *market value*, being them goods which will be assigned. On the other hand, *strategic assets* (e.g. brands, patents and other intangible acquisitions), whose value is determined by the competitive benefit which they confer on the company, have to be assessed at their *value in use*. Such a concept of net capital, unlike the one currently in use, should get close to stock exchange capitalization and, therefore, to its market value.

This shift from the historical cost to the fair value accounting has been pushed by different factors. Firstly, the international competition on capital markets, which has made financial information more and more important for communicating firms' economic results and financial position. Secondly, the increased importance of intangibles within the firm's assets, which has pushed for an accounting representation able to highlight their contribution to the competitive advantage. Lastly, the fall in Europe of inflation risks which, throughout the XX century, brought into being a number of rules – included the historical cost criterion - with the purpose of eliminating accounting distortions caused by the monetary illusion. In this perspective, the use of fair value is expected to play a key role in reducing the informative

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asymmetry between firms and investors and, hence, in lowering a risky factor for the latter.

Fuller accounting policies and explanatory notes are also expected to play a key role in reducing information asymmetries and improving firm value. For instance, the IAS 36 "Impairment of assets" includes, among the information to be provided for each class of assets, the amount of impairment losses recognised or reversed, the recoverable amounts, the values in use and the discounting rate used in their estimation. In any case, users of financial statement has to be provided with information concerning the evaluation models being used, which - up to now - have been currently handled within the company and strictly in confidence. The IAS 37 "Provisions, contingent liabilities and contingent assets" requires detailed information about contingent liabilities such as the estimate of their financial effects as well as the uncertainties about the amount or timing of the resulting outflows. The disclosure required by the IAS 32 "Financial instruments: disclosure and presentation" with regard to the financial instruments appears to be even more detailed. It consists of a considerable supply of information which ranges from basic issues as the amount, the nature and general conditions of each financial instrument, up to information on the fair value and on risk management policies, especially with regard to the interest rate and credit risk. The IAS 14 "Segment reporting" establishes principles for reporting financial information by segment, i.e.

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information about different types of products and services a firm produces and the different areas in which it operates.

The explicit objectives of such detailed information are, once more, *"to help users of financial statements to better understand the firm's past performance, to better assess its risk and returns and make more informed judgements about the firm as a whole"* (IAS 14). As a consequence, part of the information that has previously been used for management control purposes exclusively has now to be given to the market in order to reduce information asymmetries.

3. RESEARCH HYPOTHESES

The relationship between changes in accounting standards and market behaviour is of direct interest to accounting policy makers for evaluating the usefulness of the changes required in financial reporting, comparing costs and benefits of the new regulation and make informed tradeoffs between value-added disclosures and costs associated with their production and dissemination.

Aim of this research is to test the effects of the IAS/IFRS adoption on the capital market investigating whether the European Regulator has reached its purposes.

Considering that the explicit purpose of the Regulator is that of *"contributing to the efficient and cost-effective functioning of the capital market"*, the effects of the IAS/IFRS implementation on financial markets

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are directly related to the cost of capital and, in particular, to the cost of equity. Hence, the perspective here adopted is that of focusing on the effects of the IAS/IFRS adoption on firms. It must however be mentioned that Regulation No. 1606/2002 specifies that "*the protection of investors is also an important aspect of the completion of the internal market*".

As outlined previously, scopes of European Regulator are that of ensuring both a higher degree of transparency of financial statements and comparability of information for European listed companies.

The first article of Regulation No. 1606/2002 states that it "*has as its objective the adoption and the use of international accounting standards (...) in order to ensure a high degree of transparency (...) and hence an efficient and cost-effective functioning of the capital market*". The choice of adopting the accounting standards issued by the IASB must be placed in this perspective. Thus, the first hypothesis tested in this research is formulated as follows:

HP. 1: "The adoption of the IAS/IFRS leads to a reduction in the cost of equity".

Should any significant evidence in favour of this hypothesis be found, then the Regulator's purpose of fostering a cost-efficient functioning of the capital market for firms could be considered as reached.

Actually, one of the major links between economic theory and contemporary accounting though is the idea that a firm's greater disclosure leads to a reduction of the cost of capital since it reduces the

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specific component of the cost of capital that arises from information asymmetries. According to this perspective, information asymmetries create costs by introducing adverse selection into transaction between buyers and sellers of firm shares. In real institutional settings, adverse selection is typically manifest in reduced levels of liquidity for firm shares (Copeland and Galai 1983, Kyle 1985, Glosten and Milgrom 1985). In order to overcome the reluctance of potential investors to hold firm shares in illiquid markets, firms must issue capital at a discount which results in fewer proceeds to the firm and, hence, a higher cost of capital. A commitment to increased level of disclosure reduces the possibility of information asymmetries arising either between the firm and its shareholders or among potential buyers and sellers of firm shares and reduces the discount at which firm shares are sold, thus lowering the cost of issuing capital (Diamond and Verrecchia 1991, Baiman and Verrecchia 1996). Regulation No. 1606/2002 has set goals which clearly imply this perspective.

However, this issue has not been developed rigorously and empirical evidence of the effect of disclosure on cost of capital has provided mixed result. Increased disclosure, for instance, may not necessarily lead to a reduction of the cost of capital because a fuller disclosure may, on the contrary, lead investors to reduce their expectations regarding future returns or to increase their assessment of risk. As a result, cost of capital may be higher than it would have been had more information not been

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provided. This study aims at giving an empirical contribution to this research area.

One important issue for this hypothesis development is whether the IAS/IFRS in fact imply an increase in the level and/or quality of disclosure. Verrecchia and Leuz (2000) reported anecdotal evidence from the financial press that is consistent with this conjecture. Similarly, German firms that switched to either IAS or U.S. GAAP in the nineties claimed that they were satisfying investors' demand for greater transparency and international comparability. Surveys by Forschle, Glaum and Mandler (1995 and 1998) reported that a majority of German managers and academics shared the view that that the U.S. GAAP and IAS provided more information than domestic GAAP statement. In the accounting literature – reported in section 4 - IAS were found to increase the amount of financial disclosure (e.g. Ballwieser 1997 and Ashbaugh 1999). More over, Harris and Muller (1999) found that reconciliation amounts from foreign GAAP to IAS were value-relevant. In addition to the arguments and evidence presented above, Leuz and Verrecchia (2000) also checked whether international reports obtained higher disclosure ratings than German GAAP reports. Results supported this conjecture leading to the conclusion that a switch from the European directives' system to international reporting represents a substantial increase in a firm's commitment to disclosure.

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In particular, the IAS/IFRS adoption can be supposed to improve capital market's transparency in two different ways. On the one hand, a system of fuller disclosure - such as the one provided by the IAS/IFRS in comparison to the IV and VII directives - should bring private information into public domain and force the market, in such a way, to a stronger form of efficiency. Hence, an improvement of market efficiency in terms of universal access to information should occur and produce its effects on resource allocation and capital formation. On the other hand, the adoption of the IAS/IFRS - and fair value accounting in particular - should lead to a higher value-relevance of accounting data. If, as stated by the IASB, *"financial statements are most commonly prepared in accordance with the accounting model based on recoverable historical costs and the nominal financial capital maintenance concept. However other models and concepts may be more appropriate in order to meet the objective of providing information that is useful for making economic decisions"*, then the use of fair value is expected to increase the usefulness of accounting data and the transparency of financial statements. Therefore, the adoption of fair value accounting should force the market to become more efficient in terms of its capability to reflect the real value of a firm. In this case, there would be an improvement of the so called "fundamental efficiency" of the market.

Further, Regulation No. 1606/2002 states that it *"has as its objective the adoption and use of international accounting standards (...) in order to ensure*

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a high degree of comparability and hence an efficient functioning of the *Community capital market"*. In particular, accounting standardization should "_enable Community companies to compete on an equal footing for financial resources available in the Community capital markets"_.

In this sense, accounting standardization is expected to reduce possible errors in the market evaluation of European companies due to differences existing in domestic accounting systems. The adoption of the same accounting standard set within the Community should in fact improve comparability and, in such a way, eliminate accounting measurement errors in pricing firms.

Consequently, the second hypothesis is formulated as follows:

HP. 2: "Accounting standardization at a European level leads to a reduction of cross-country differences in the cost of equity".

Should any significant evidence in favour of this hypothesis be found, then the Regulator's purpose of fostering an equal footing competition for financial resources among firms could be considered as reached. More over, some important implications could be drawn for further integrating policies at a European level.

In order to delineate the theoretical context for this research, it must be considered that testing whether the Regulator has reached its purposes of improving an efficient and cost-effective functioning of the market implies that efficiency is expected to be the condition in which the market works.

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Market efficiency is a central feature of capital markets and deals with the relation between security prices and information. It deals with how capital markets process information in general, and financial reporting information specifically.

Fama (1970) stated that a securities market is efficient if security prices "fully" reflect all the information available. The market is efficient with respect to some specified information system if, and only if, security prices act as if everyone observes the information system.

Fama also delineated three major forms of market efficiency: weak, semi-strong and strong. The market is efficient in the weak form if prices fully reflect information regarding the past sequence of prices. This form of market efficiency has obvious implications for technical analysis and it includes random walk theory of stock prices. The market is efficient in the semi-strong form if prices fully reflect all publicly available information, including financial statement data. Trading strategies based on published financial statement data will not lead to abnormal returns. The market is efficient in the strong form if prices fully reflect all information, including inside information. Hence, even having access to private information will not lead to strategies promising abnormal expected returns.

The implication of assuming that market efficiency exists is particularly important for financial reporting Regulators. In particular, market efficiency in the semi-strong form provides the best climate for

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mandating disclosure. In fact, the motivation for requiring disclosure is essentially to bring private information into public domain. In a market that is not efficient in a strong form, this is a potentially substantive issue, because privately held information is not reflected in prices. Once data are placed in the public domain, semi-strong form market efficiency provides the assurance that such data will be fully reflected in prices. Thus, requiring public disclosure is an effective remedy (at least in terms of prices security) for any perceived undesirable effects associated with the presence of non-publicly available data.

Finally, some hypotheses can be advanced on the mechanisms by which the equity market incorporates the new information provided by the IAS/IFRS. First of all, the fuller accounting policies and explanatory notes prescribed by the IAS/IFRS are expected to play a key role in assessing firms' level of risk and defining their stock prices. In particular, if accounting policies and explanatory notes presented according to the IAS/IFRS contribute effectively to reduce the specific component of the cost of equity related to information asymmetries, then - all else being equal - an increase in firm values should occur.

Furthermore, the adoption of the IAS/IFRS is retroactive and requires accounting adjustments to be debited or credited directly to equity. The IFRS 1 "Net profit and loss for the period, fundamental errors and changes in accounting policies" states that *"the first report issued in accordance to the new regulation must be presented as if the new accounting*

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policy had always been in use. The amount of adjustment relating to periods prior to those included in the financial statement is adjusted against the retained earnings of the earliest period". As a consequence, the new accounting system is expected to have a great impact on book leverage within the first year of its application. In addition, fair value accounting brings assets' values closer to their current value and makes book value converge to its real value.

These circumstances are expected to affect investors' capability of assessing the firm-specific level of risk related to financial leverage and influence the risk premium required accordingly. Recent research has in fact shown that book leverage exhibits a significant positive correlation with the cost of capital (Gebhardt, Lee and Swaminathan 2001). As a result, some effects of the IAS/IFRS adoption on the equity market could also originate from price adjustments related to the risk perceived by investors in relation to the new book leverage.

Lastly, the effect of the IAS/IFRS adoption on the equity market could pass through expected earnings. On the one hand, some accounting treatments provided by the IAS/IFRS improve transparency and lead to a better representation of the economic underlying.

The choice of adopting and extending fair value accounting as much as possible, for instance, must be placed in this perspective. The fair value criterion is expected to enhance forecasting capabilities, therefore stock prices should better reflect firms' actual performances. On the other

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hand, from a comparative point of view, if accounting standardization improves comparability by eliminating cross-country differences in accounting measurements, then - all else being equal - a decreased variability in earnings forecasts should occur after the IAS implementation. Considering that previous research has shown that earning capitalization is the dominant valuation model for firms which report either under the IAS/IFRS (Ashbaugh and Olsson, 2002) or the dirty surplus accounting (Ohlson 1995) prescribed by the EU directives, the effects of the IAS/IFRS implementation on prices may also pass through expected earnings.

4. LITERATURE REVIEW

The shift from a certain accounting standard set to a completely different one which is mandatory and involves different countries simultaneously, such as the one provided by the European Regulation No. 1606/2002, represents a new and extraordinary event for empirical research. Therefore, there is no prior specific research on it.

The research methodology used in this study is the result of a wide literary review in different research streams, some of which have detected the market impact of single accounting changes, others have focused on cross-country differences in accounting standards and others again have focused on the relationship between the cost of equity and accounting disclosure. Consequently, the following literary review is

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divided into paragraphs according to the different topics which have been examined in order to build the research methodology described in the next section.

The relationship between accounting standards and stock prices has been the subject of many studies and has been empirically analysed both at individual and market levels.

The first experimental studies to examine investor's behaviour on an individual level were conducted by Jensen (1966) and Dyckman (1966), that designed experimental field studies of stock evaluation by professional security analysts by supplying them with data generated from different accounting procedures. This approach in accounting research did not have great success for reasons associated with experimental setting such as subject selection and experimental learning.

Studies of investors' behaviour with respect to accounting changes at the market level have basically used two approaches, one based on the valuation theory and the other on the capital market equilibrium theory. Studies by O'Donnell, Summers, Mlynarczyk and Gonedes opened up the way to the valuation-theory approach to accounting changes, while Fama, Fisher, Jensen, Roll, Kaplan, Ball and Brown, Archibald, Beaver and Dukes opened up the way to the CAPM-theory approach to studying stock price reactions to alternative accounting methods.

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Studies based on the valuation approach have been long criticized because they considered the relationship between accounting events and stock prices as an isolated event and ignored the cross sectional association that is known to exist among stock price changes. More over, valuation models have often been formulated in terms of level of earnings or other variables and dominated by the scale factor.

Accounting research based on the capital market equilibrium model obtained its impetus from major development in financial theory during the late 1950s and early 1960s. Fama, Fisher, Jensen and Roll first used it in their study (1969) on the relationship between stock splits and stock prices, whereas Gonedes (1972) and Beaver (1972) first gave representative expositions of the implications of the efficient market hypothesis for accounting issues. The capital-market-equilibrium approach to the study of accounting changes has also shown some weaknesses: the validity of the market model has long been questioned and controversy over the efficiency of capital markets is still going on. In particular, one of the most important critiques to the market model research design has been relative to the assumption that the risk of firms is stable over time.

A third and completely different perspective in assessing market effects of accounting changes was introduced by Lawrence Brown (1983), who suggested evaluating alternative accounting methods in terms of their ability to predict events of interest to decision makers. For the first time

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changes in accounting principles were directly related to the ability of financial statement users, i.e. the security analysts, to assess future earnings numbers of the affected firms. The market impact of accounting changes was in this way explicitly related to who makes the market.

4.1. Research on the relative informativeness of different accounting standard sets

Most of the studies in financial accounting have focused on the market impact of single accounting changes. This is essentially due to the fact that the adoption of a complete accounting standard set has never been as frequent as changes in single accounting standards.

Some previous studies, however, have focused on a comparison among different accounting standard sets in order to assess their relative informativeness. The *lait-motive* in this research area has been investors' reaction to differences in accounting techniques, whereas the expected direction and magnitude of reaction has been rarely specified *a priori*. Most of the studies just aimed at ranking alternative information systems according to their usefulness to investors.

Evidence on the effect of these differences has been considered of great importance, given the increasing integration of capital markets and the resulting debate over the most appropriate measurement techniques. The most important studies reviewed hereafter are grouped according to their specific research purpose.

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Research on the value-relevance of Form 20-F

Research stream on the relative informativeness of different accounting standard sets was opened up by a discussion in the United States over the appropriate listing requirements for foreign stocks and aimed at verifying the usefulness of Form 20-F required to non-U.S. firms listed on the U.S. stock market. In fact, non-U.S. firms could list their securities in the United States by either issuing a prospectus and satisfying a panoply of SEC reporting requirements (including quarterly Form 10-Q reports and an annual Form 10-K report), or by listing registered American Depository Receipts (ADRs) and filing an annual Form 20-F and a semi-annual Form 6-K which reconciled earnings based on foreign generally accepted accounting principles (GAAP) with the corresponding U.S. GAAP number. Although these requirements were less extensive than those for U.S. firms, the American Stock Exchange (AMEX) and the New York Stock Exchange (NYSE) started lobbying the U.S. congress and the U.S. securities and Exchange Commission (SEC) to ease these requirements further. The AMEX and NYSE's concern was that the SEC requirements placed them at a competitive disadvantage in listing foreign firms since many other countries' Regulators allowed mutual recognition without restatement.

The lobbying activities by the AMEX and NYSE triggered a debate in the United States about global competition for exchange listing. In this debate, the SEC criticized the quality of the financial reporting

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requirements in most other countries throughout the world. Regulators'
concern about non-U.S. accounting standards focused on the
vulnerability of reported earnings to earnings management, as well as
the potential lack of informativeness and timeliness of reported
accounting numbers – primarily accounting income -, undue reliance on
tax regulations for financial reporting measurement rules, the
infrequency and the paucity of disclosure.

In this context, Amir, Harris and Venuti (1993) examined Form 20-F –
which includes a reconciliation of earnings and book value to U.S.
GAAP from home-country accounting principles – in order to evaluate
the relative informativeness of Non-U.S. and U.S. GAAP directly. The
reconciliation form was used in order to address two questions. Firstly,
whether differences in U.S. and non-U.S. GAAP, as summarized in the
aggregate reconciliations of earnings and book value, were value-
relevant. That is, whether the reconciliation of accounting data to U.S.
GAAP increased the associations between accounting measures and
price. Secondly, which differences in accounting practices, still reflected
in the components of the reconciliation, were specifically value-relevant.
The idea was that if reconciliation data did not result to be value-
relevant, then it would have been harder to argue that such data were
necessary. Amir, Harris and Venuti used regressions of returns and
market-to-book ratio over earnings reported under non-U.S. GAAP and
reconciliation data. Their results suggested that reconciliations of

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earnings and shareholders' equity to U.S. GAAP were value-relevant and this result held both in aggregate and for some specific components, in particularly property revaluations and capitalized goodwill.

Rees and Elgers (1997) extended Amir, Harris and Venuti's investigation using the same methodology but analyzing income and shareholders' equity reconciliations in periods prior to their disclosure. Their aim was that of testing whether reconciliation form was itself the source of the information or some of the value-relevant information in the SEC-mandated disclosures was available to the market from other sources. As supposed, they found that the SEC-mandated disclosures were not the exclusive source of the value-relevant information and, therefore, called into question the necessity of the Form 20-F disclosures.

Harris and Muller (1999) also used Form 20-F in order to evaluate the relative informativeness of IAS and U.S. GAAP. Once more, the Form 20-F permitted them to directly and specifically compare the association between firm value and IAS and U.S. GAAP accounting measures as they were implemented by foreign firms listed in the U.S. which prepared their home country financial statements using IASB standards and reconciled from IAS to U.S. GAAP in their Form 20-F filing. They used regressions of market value, price-per-shares and return models on firms' earnings and book value measured under IAS and U.S. GAAP reconciliation amounts. Evidence showed that the U.S. GAAP earnings reconciliation adjustments were value-relevant even if U.S. GAAP

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amounts were valued differently for market value and return models but not for a price-per-share model.

Conversely, Bandyopadhyay, Hanna and Richardson (1994) found that the reconciliations did not appear to be value-relevant for a set of Canadian firms listed on U.S. stock exchanges even though the magnitude of the GAAP differences was somewhat large relative to a firm's earnings or its market value of equity. They argued that one explanation for this result could be that the reconciliation items might be the result of events that did not have a continuing effect on a firm's future cash flows and, therefore, were not impounded in price in the same way of earnings changes of a continuing nature. Alternatively, they argued that financial markets could have predicted the reconciliation numbers sufficiently early and prices might have impounded any value-relevant information prior to the return windows used in their study.

Chan and Seow (1996) also found that earnings based on foreign GAAP were more closely related to contemporaneous stock returns than earning reconciled to U.S. GAAP. They also found evidence that such results could be driven by institutional factors which were specific to foreign markets. Based on previous research in international stock markets, they used the returns correlation between a foreign stock index and the Standard and Poor 500 index as a surrogate for the closeness of the foreign business environment to that of the U.S. Observations were

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partitioned into high- and low-correlation group. The association between stock returns and earnings based on foreign GAAP was stronger than earnings based on U.S. GAAP for both the high- and the low- correlation groups, but within-group difference was much stronger for the low-correlation group than for the high-correlation group. This result was considered as consistent with the notion that foreign GAAP rules might reflect specific institutional features relevant to that foreign country. Among the institutional differences advanced by the authors were those relating to tax structures, intercorporate ownership, industrial relations, type of economy (agriculture-based, resourse-based, manufacturing) and national economic and social policies. On the basis of their results, earnings based on foreign GAAP seemed to convey information that could be lost in the reconciliation to the U.S. GAAP.

Research on the relative informativeness of financial statements prepared under shareholder or stakeholder model

As greater emphasis has been placed on accounting harmonization worldwide, knowledge of the relative informativeness of financial statements prepared according to shareholder or stakeholder model has been considered of great importance in the policy debate.

In this context, some studies focused specifically on a comparison between Germany GAAP and U.S. GAAP or IAS, since they represented relative extremes in their approaches to financial reporting. In particular, market observers, researchers and Regulators argued that

financial statements prepared under the shareholder model, such as U.S. GAAP or IAS, provided better information than financial statements prepared under stakeholders model, such as German GAAP.

Harris, Lang, and Moeller (1994), for instance, compared the relative informativeness of accounting measures for U.S. and German firms matched on industry and firm size and also tested the incremental value relevance of earnings adjusted on the basis of a formula proposed by analysts. They found that the correlation between 18-month returns and annual earnings reported under German GAAP was generally similar to that in the United States. Further, the results indicated that the coefficient applied to earnings in Germany was larger than that in the United States, consistent with a more conservative measurement approach in Germany.

Differentiating between German firms on the basis the degrees of consolidation (parent-only, domestic-only consolidation and full consolidation), the results also showed that, consistent with the notion that consolidation increases value relevance, the association between earnings and returns was stronger for firms which consolidated than for those which did not. Further, they tested the relation between price and both earnings and shareholders' equity. In contrast to the returns analysis, the explanatory power of accounting measures for price was significantly lower in Germany than in the United States. According to the authors, this primarily was a result of perception that the cumulative

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effects on shareholders' equity of conservative accounting practices, applied over many years, had increased the uncertainty about its relevance. Lastly, they compared the explanatory power and information content of reported earnings with earnings adjusted on a formula proposed by analysts with the aim to derive "permanent earnings" number, free of idiosyncratic economic or accounting transactions. They found that the relation between returns and adjusted earnings was stronger than for reported earnings, therefore suggesting an incremental informativeness of the former.

Bartov, Goldberg, Kim (2002) focused only on German firms reporting consolidated financial statements under German GAAP, U.S. GAAP or IAS traded within the German market so as to hold constant institutional factors such as listing requirements, other disclosure requirements, regulatory environmental and other market microstructure factors that could confound results. More over, instead of assessing the value relevance of different accounting measures by comparing r-squares, they investigated information content of earnings by introducing in the regressions an interaction term of the accounting standard dummy variable and earnings, which was supposed to reflect the differential effect of reporting earnings under U.S. GAAP or IAS over German requirements. Results showed that both U.S. GAAP and IAS had superior value relevance in comparison to German GAAP. Furthermore, a comparison between value-relevance of earnings

produced under U.S. GAAP and IAS generated evidence indicating the superiority of the former for firms listed on Neuer Markt and small firms.

In order to provide evidence on the importance of national accounting differences, Alford, Jones, Leftwich and Zmijewski (1993) compared the information content and timeliness of accounting earnings in several countries using the United States as a benchmark. They used pooled regressions to estimate the relation between annual earnings and 15-month returns for each of their sample countries separately.

According to their measure of information content - a comparison of the regressions' r-squares - they found significant differences in the timeliness and information content of accounting earnings across the sample countries. The association between earnings and stock returns resulted to be stronger in countries where capital was traditionally raised in capital markets and there were weaker links between financial and tax reporting, i.e. Anglo-Saxon countries. More over, unconsolidated earnings were not as value-relevant as consolidated earnings. In particular, earnings from Australia, France, The Netherlands and the United Kingdom were more informative or timelier than U.S. accounting earnings, whereas results for Belgium, Canada, Hong Kong, Ireland, Japan, Norway, South Africa and Switzerland were inconclusive. In contrast, annual accounting earnings

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from Denmark, Germany, Italy, Singapore, and Sweden reflected less timely or less value-relevant information than U.S. accounting earnings.

Ball, Kothari and Robin (2000) examined the effects of institutional factors on properties of accounting earnings by focusing on timeliness and conservatism of earnings reported by firms in common-law countries and code-law countries. Their idea was that politicization of accounting standard setting and enforcement typical of code-law countries, weakened the demand for timely and conservative accounting income and conversely increased the demand for an income variable with low volatility.

In code-law countries, political influence on accounting occurs at national and firm levels. Governments establish and enforce national accounting standards, typically with representation from major political groups such as labour unions, banks and business associations. At the firm level, politicization typically leads to a stakeholder governance model, involving agents from major groups contracting with the firm. As a consequence, current-period accounting income tends to be viewed as the pie to be divided among groups, as dividends to shareholders, taxes to governments and bonuses to managers and sometimes also to employees. Therefore, when compared to common-law countries, Ball, Kothari and Robin expected the demand for accounting income under code law to be influenced more by the payout preferences of agents for labour, capital and government. Furthermore, since these groups' agents

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are usually represented in corporate governance, insider communication could solve the information asymmetry between managers and stakeholders. Therefore, their preferences were expected to penalize volatility in payouts and, thus, in income.

Conversely, under the "shareholder" governance model - that is typical of common-law countries - shareholders alone elect members of the board, payouts are less closely linked to current-period accounting income and public disclosure is a more solution for the information asymmetry problem. In comparison with the more political process in code-law countries, the desirable properties of accounting income in common law countries were expected to be determined primarily in the disclosure market. Those properties include timeliness in incorporating negative economic income (i.e. asymmetric conservatism).

Empirical results supported these hypotheses by showing that accounting income (measured by changes in market value) in common-law countries was significantly timelier than in code-law countries and incorporated economic losses (income conservatism) quicker. Considering timeliness and conservatism together as capturing much of the concept of financial statement "transparency", Ball, Kothari and Robin concluded that these results could provide an explanation for the emergence of a largely common-law model in international transacting and in particular for the IASB adoption of a more common-law approach to disclosure.

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Frost and Pownall (2000) investigated disclosures of firms cross-listed in both U.S. and U.K. markets. They found that firms did not disclose the same information simultaneously in both markets. Further, they found little evidence of U.S. or U.K. price response to disclosures released only in the other country. They concluded that direct and simultaneous disclosure in each market was necessary to ensure equal access to information for these cross-listed firms.

Research on the relative informativeness of IAS and U.S. GAAP

As outlined by the European Regulator in its preface to Regulation 1606/2002, *"it is important for the competitiveness of Community capital markets to achieve convergence of the standards used in Europe for preparing financial statements, with international accounting standards that can be used globally, for cross-border transactions or listing anywhere in the world. This implies an increasing convergence of accounting standards currently used internationally with the ultimate objective of achieving a single set of global accounting standards"*. In this perspective, some studies have recently begun to focus on the relative informativeness of the IAS/IFRS and U.S. GAAP.

An original analysis of the different value relevance of the IAS/IFRS and U.S. GAAP was provided by Ashaugh and Davis-Friday (2002), who investigated the association between non-US firms' financial reporting in accordance with IAS or U.S. GAAP and the likelihood of such firms being targets in mergers and acquisitions.

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The Effects of the IAS/IFRS Adoption in the European Union on the Cost of Equity:
First Evidence from the Bank Industry

Transparent financial information is a necessary element for economic growth as market participants depend upon informative and useful financial information in making capital allocation decisions. One capital allocation option is to engage in mergers and acquisitions, which result in the target firm relinquishing the control of corporate resources. According to Ashbaugh and Davis-Friday, if a role of financial reporting is to reduce asymmetric information and financial information generated under IAS or U.S. GAAP is more informative and more useful in determining the value of firms' resources than financial information generated under non-U.S. firms' domestic accounting standards, then a stronger association between firms reporting in accordance with IAS or U.S. GAAP and their likelihood of being targets in completed mergers and acquisitions had to be found. The association between non-U.S. firms' reporting of IAS or U.S. GAAP financial information and the likelihood of firms being targets was tested on a sample of 186 non-U.S. firms listed on the Stock Exchange Automated Quotation System (SEAQ) International. Ashbaugh and Davis-Friday found a positive and significant association between firms reporting IAS or U.S. GAAP financial information and their being targets in completed mergers and acquisitions. They also found a positive and significant association between firms' external monitoring, as proxied by the firm contracting with a Big-6 auditor, and firms being targets. In addition, they focused on firms domiciled in countries which were different from their

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acquiring firms, i.e. cross-border mergers and acquisitions, in order to investigate whether the role of firms' financial reporting was more important when target and acquiring firms operated in differential information environments. Consistent with their original analysis, results of the cross-border analysis indicated that non-U.S. firms' use of IAS or U.S. GAAP were positively associated with firms being targets in cross-border mergers and acquisitions. Evidence supporting this hypothesis resulted consistent with the theory that firms' financial reporting strategies have an influence on the control of corporate resources in the global market.

Ashbaugh and Olsson (2002) examined differences between IAS and U.S. GAAP in terms of their valuation properties. Using non-U.S./non U.K. firms listed on the International Stock Exchange Automated Quotation system in London, the earnings capitalization model resulted to be the dominant valuation model when valuing IAS firms' shares. The book value and the residual income models did not perform as well as the capitalization model in that the exploratory power of the former models were weaker and the magnitude of the coefficient indicated model misspecification. They also identified discretionary accounting measurement and recognition methods under IAS that violate the residual income assumptions (e.g. revaluation of fixed assets). At the same time, they identified measurement and recognition methods under IAS (e.g. capitalization of development costs) that likely contributed to

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the dominance of earnings capitalization model for IAS firms. In contrast, they found the residual income model to be the dominant valuation model for cross-listed firms reporting under U.S. GAAP. The residual income model appeared well specified, whereas the estimated parameters of the earnings capitalization and book value models indicated misspecification.

Research on accounting harmonization among European Union's countries

The only study that investigated the market impact of cross-country accounting harmonization in Europe was the one by Joos and Lang (1994) relative to the introduction of the directives IV and VII. The IV and VII directives were intended to facilitate creation of an integrated European capital market by establishing a basic level of financial transparency and comparability so that investors could interpret and compare financial statements from other countries as easily as their own. Their aim was to develop a consensus-based set of accounting directives to be implemented by member states and to serve as standards for cross-listing in the EU.

Most of the discussion on the need for and on the effects of the EU's directives was normative and focused on the desirability of the changes (Walton 1992), on alternate approaches to integrating capital market (Wilson 1991) and on the potential definitions of abstract concepts like "true and fair view" (*European Accounting Review*, May 1993). Other studies empirically analysed the effects of these directives but only in

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terms of a reduction in the variability of accounting practices within countries (Walton 1992, Emenyonu and Gray 1992). Conversely, Joos and Lang empirically investigated the market impact of the European directives across France, Germany and the U.K. by comparing different financial ratios and stock market valuations of accounting data in the period before and after the implementation of these directives. They research aimed at providing evidence, from a capital market perspective, on the effects of the EU directives on accounting measurement differences.

The effect of diversity in measurement practices across countries was evaluated either on the basis of convergence in accounting-based measure of profitability – return of equity (ROE) - and price multiples - earnings/price ratio (E/P) and book-to-market ratio (B/M) -, or assessing the degree of association between accounting data – earnings and book value - and stock prices. The strength of the association, as measured by the r-squares, provided insight into the value relevance of the accounting measures.

Because part of the decision to move EU accounting methods closer to those for the U.K. was based on the alleged superior value relevance of the U.K. accounting principles, Joos and Lang expected to see stronger association between earnings and returns for Germany and France in the post-directive period. More over, if the directives reduced differences across countries, they expected convergence in the r-squares

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during the post-directive period, with Germany and France moving toward the U.K. Results, however, did not provide any evidence that measurement practices in the U.K. resulted in accounting data with a higher association with share price, inconsistent with the arguments underlying the decision to move EU accounting requirements toward those in the U.K. Neither did they find evidence of significant convergence in r-square during the post-directives period. Given the similarity of the underlying economies, Joss and Lang attributed this finding to the flexibilities still allowed by the directives in adopting different accounting approaches, which left substantial differences in accounting among Germany, France and the U.K. In fact, while the directives required that financial statements reflect the "true and fair value", their more specific requirements, particularly on measurement issues, left discretion to member states, leading some commentators (Alexander and Archer 1991 and Walton) to speculate that the changes may have represented more form than substance.

Therefore, as they concluded, "*to the extent that comparable measurement of net income and shareholders' equity is perceived as important, additional attempts at integration may be merited*". This additional attempt is represented by the accounting standardization provided by the EU Regulation No. 1606/2002, which has came into force for European listed companies from 2005 on.

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Research on the effects of accounting changes over analysts' forecasting capabilities

A completely different perspective in assessing market effects of accounting changes was introduced by Lawrence Brown (1983), who suggested evaluating alternative accounting methods in terms of their ability to predict events of interest to decision makers. Changes in accounting principles were directly related to the ability of financial statement users, i.e. the security analysts, to assess future earnings numbers of the affected firms. In this way, the market impact of accounting changes was explicitly related to who made the market.

Following this approach, Ashbaugh and Pincus (2000) investigated whether differences in accounting standards across countries had an impact on the ability of financial analysts to forecast non-US firms' earnings accurately and whether analyst forecast accuracy changed after firms switched to IAS. In order to investigate these issues, they developed indexes that reflected differences in countries' accounting disclosure and measurement policies relative to IAS. A "disclosure index" captured differences between IAS and domestic GAAP with regard to the requirements of providing a cash flow statement, disclosure of accounting policies, disclosure of the effect of a change in accounting policy, disclosure of the effect of a change in accounting estimate, disclosure of prior period adjustments, disclosure of post balance sheet events, disclosure of related party transactions, and

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disclosure of segment information. A "method index" captured variation in measurement methods of IAS versus domestic GAAP with regard to standards in effect at the research date. An "IAS set index" measured the disclosure and measurement policy changes that a firm committed to by adopting the IAS. The larger an index value, the greater was the difference between a firm's domestic GAAP and the reporting requirements of IAS. A regression of earnings forecast errors on such indexes showed that greater differences in accounting standards relative to IAS were significantly and positively associated with analyst forecast errors. Further, a regression of changes in forecast errors on changes in such indexes documented that analyst forecast accuracy improved after firms had adopted IAS. More specifically, after controlling for changes in the market value of equity, changes in analyst following and changes in the number of news reports, Asbaugh and Pincus found that the convergence in firms' accounting policies brought about by adopting IAS was positively associated with the reduction in analyst forecast errors.

4.2. Research on the links between accounting disclosure and the firm's cost of capital

Since a major link between economic theory and contemporary accounting thought is the notion that a firm's commitment to greater disclosure should lower costs of capital that arise from information

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asymmetries, several studies have recently focused on the link between disclosure and the firm's cost of capital.

The economic theory underlying these studies can be briefly sketched as follows. Information asymmetries create costs by introducing adverse selection into transaction between buyers and sellers of firm shares. In real institutional settings, adverse selection is typically manifest in reduced levels of liquidity for firm shares (Copeland and Galai 1983, Kyle 1985, Glosten and Milgrom 1985). To overcome the reluctance of potential investors to hold firm shares in illiquid markets, firms must issue capital at a discount. Discounting results in fewer proceeds to the firm and, hence, higher costs of capital. A commitment to increased level of disclosure reduces the possibility of information asymmetries arising either between the firm and its shareholders or among potential buyers and sellers of firm shares. This, in turn, should reduce the discount at which firm shares are sold, and hence lower the cost of issuing capital (Diamond and Verrecchia 1991, Baiman and Verrecchia 1996).

With regard to the notion of "increased levels of disclosure", the theory is sufficiently broad so as to allow either an increase in the quantity of disclosure or an increase in the quality of disclosure or both of them. In addition, theory makes no distinction as to how the information asymmetries arise (e.g. between a firm and its shareholders, among potential buyers and sellers of firm shares, etc...). The only requirement

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is that information asymmetries manifest themselves as a higher

premium in the price at which trades are executed.

While the theory that relates the level of disclosure and the firm's cost of

capital is compelling, so far the empirical results have been mixed.

Leuz and Verrecchia (2000) noted that one potential explanation for the

mixed among results, aside from the difficulties of measuring the cost of

capital directly and estimating this relation, is that most of the studies

used data from firms publicly registered in the United States, where the

disclosure environment under U.S. GAAP was already rich.

Consequently, commitments to increased levels of disclosure were

largely incremental, thereby leading to economic consequences that

were difficult to substantiate empirically.

Research on the effects of voluntary disclosure on the cost of equity

Botosan (1997) estimated the cost of equity using the accounting-based

valuation formula developed by Edwards and Bell (1961), Ohlson (1995)

and Feltham and Ohlson (1995) and then regressed it on market beta,

firm size and a self-constructed index of disclosure level. Such an index

included five categories of voluntary information identified by investors

and financial analysts as useful in investment decision making:

background information, summary of historical results, key non-

financial statistics, projected information and management discussion

and analysis. The regression involved U.S. firms in the machinery

industry and documented a significant relation between her disclosure

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level measure and the firm's cost of capital only for firms with low analyst following, whereas no significant evidence of an association between her measure and the cost of equity was found. One possible explanation provided for this result was that the Botosan's disclosure measure was limited to the annual report and, accordingly, may not provide a powerful proxy for the overall disclosure level when analysts play a significant role in the communication process.

Using a similar index for foreign firms trading in U.S. equity markets, Botosan and Frost (1998) repeated Botosan's previous analysis and found a significant association between liquidity and timeliness, but not the level, of disclosure.

Botosan and Plumlee (2000) then extended the results of Botosan (1997) to include larger, more heavily followed firms, across a diverse group of industries, over a number of years. They examined the association between expected cost of equity capital and three types of disclosure: annual report, quarterly and other published reports and investor relations. In testing their hypotheses, they employed four alternative estimates of expected cost of equity capital estimates. Results showed that the cost of equity capital decreased in annual report disclosure level. The magnitude of the difference in cost of equity capital between the most and least forthcoming firms consisted in approximately one-half to one percentage point, after controlling for market beta and firm size. On the contrary to their expectations, results showed a positive

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association between cost of equity capital and the level of more timely disclosures, such as the quarterly report. The magnitude of the difference in cost of equity capital between the most and least forthcoming firms was approximately one to two percentage points, after controlling for market beta and firm size. This result, while contrary to that predicted by theory, was consistent with managers' claims that greater timely disclosures increase cost of equity capital, possibly through increased stock price volatility. No association between cost of equity capital and the level of investor relation's activities were found. Among the different measures for the expected cost of equity, the approach employed in Botosan (1997) and the one based on a finite horizon specification of the Gordon growth model, dominated the other two.

Botosan and Plumlee (2005) also tested empirically the first three implications of the Easley and O'Hara's model (2004).

Easley and O'Hara (2004) modelled the impact of information attributes on the cost of equity capital and concluded that cost of equity capital is affected by the following attributes of information: the proportion of the information set that is private versus public (*composition*), the fraction of investors who are informed (*dissemination*), the overall precision of the information set (*precision*) and the existence of information (*existence*). Easley and O'Hara demonstrated that cost of equity capital is increasing in the composition of the information set and decreasing in its

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dissemination and precision. Moreover, they concluded that the existence of some information (even if it is all private) yields a lower cost of equity capital than no information at all. Botosan and Plumlee (2005) documented results consistent with the predictions of this model and found that all the proxies for cost of equity capital were increasing in composition and decreasing in dissemination and precision.

Welker (1995) and Sengupta (1998) used analyst ratings of the firm's overall disclosure policy and demonstrated that firms with higher disclosure ratings have, on average, lower bid-ask spreads and lower cost of debt at the time of issue, respectively.

Healy, Hutton and Palepu (1999) showed that firms with sustained increases in disclosure ratings exhibited improvement in a number of variables, including the bid-ask spread.

Bushee and Noe (2000) demonstrated that effect of disclosure on volatility is complex and may depend on the type of investors attracted to the firm. Their results showed that firms with higher disclosure ranking had greater institutional ownership and that yearly improvements in disclosure ranking were associated with increases in ownership primarily by "transient" institutions, which were characterized by aggressive trading based on short-term strategies. More over, firms with disclosure ranking improvements resulting in higher transient ownership were found to experience subsequent increases in stock return volatility.

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Research on the effects of mandatory disclosure on the cost of equity

All the abovementioned studies were, however, on voluntary disclosures which can be reversed and, therefore, may not necessarily represent a commitment to disclose in the future. The distinction between a commitment and a voluntary disclosure is quite relevant for studies on the cost of equity since the former is independent of the content of the information, whereas the latter is a decision taken by the firm after it has observed the content of the information. Consistent with this concern, Miller (1999) documented that firms expanded and reversed voluntary disclosure as a function of earnings performance. Such evidence suggested that the relation between the cost of capital and a commitment should be stronger than the relation between the cost of capital and a voluntary disclosure because only a commitment requires that information be disclosed regardless of its content (Leuz and Verrecchia 2000 and Baiman and Verrecchia 1996).

Most of the studies which focused on mandated reporting changes used bid-ask spreads, trading volume in firm shares, and share price volatility as proxies for the existence of information asymmetries. The relation between these proxies and the firm's cost of capital is well established in theory (Stoll 1978b, Glisten and Milgrom 1985, Admati and Pfleiderer 1988) and several studies provided evidence that information asymmetry and illiquidity are reflected in stock returns

(Amihud and Mendelson 1986 and 1989, Brennan and Subrahmanyam 1996).

To elaborate briefly on these proxies, the bid-ask spread is commonly thought to measure information asymmetry explicitly. The reason for this is that the bid-ask spread addresses the adverse selection problem that arise from transacting in firm shares in the presence of asymmetrically informed investors. Less information asymmetry implies less adverse selection, which, in turn, implies a smaller bid-ask spread.

An alternative, and perhaps less explicit, proxy for adverse selection is trading volume in firm shares. Trading volume has been used as a measure of liquidity in that it capture the willingness of some investors who hold firm shares to sell and the willingness of others to buy (Easley 1996 and Grammig, Shiereck and Theissen 1999). This willingness to transact in firm shares should be inversely related to the existence of information asymmetries. Trading volume, however, can be influenced by a host of other factors unrelated to information such as portfolio rebalancing, liquidity shock and changes in risk preference. Consequently, trading volume may not capture exclusively information asymmetry among investors.

Finally, the use of share price volatility as a proxy for information asymmetry involves that smooth transitions in share prices, hence low levels of volatility, suggest the absence of information asymmetries

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between the firm and shareholders or among investors (Lang and Lundholm 1993). As with trading volume, however, volatility is influenced by many factors unrelated to information asymmetry.

In this research stream, Greestein and Sami (1994), Boone (1998) and Piotroski (1999) assessed the impact of specific mandated reporting changes on the cost of equity by focusing on bid-ask spreads.

Greestein and Sami (1994) focused on the impact of the SEC's segment disclosure requirements and provided limited evidence that segment disclosure regulation had an impact on the market microstructure as represented by bid-ask spreads. Evidence showed a downward shift in the relative bid-ask spreads which resulted to be a function of the number of segments reported. However, relative bid-ask spreads decreased more significantly in the period subsequent to the filing of the 10-K reports for those firms reporting such information for the first time than for either a control group of firms or single-segment firms.

Piotroski (1999) also focused on segment reporting and found that expanded segment disclosures were associated with positive analysts' forecast revisions and increase the earnings' capitalization rate, but there were no significant changes in liquidity.

Boone (1998) compared bid-ask spreads on common stocks traded in the NASDAQ market before and after a fair value measure of oil and gas reserves was released by oil and gas firms pursuant to Accounting Series Release No. 253 promulgated by the SEC. These accounting

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requirements obliged oil and gas firms to disclose the discounted present value of their stock of oil and gas reserves for fiscal year ending after December 1978. Results indicated that the size of the spread had declined significantly in the year following the disclosure of reserve values. The amount of the decline was statistically associated with the absolute value of the difference between the book value of oil reserves and the discounted present value of oil reserves, which was used as a proxy for the degree of information asymmetry that was lessened by the value-based disclosures. Evidence also indicated an inverse association between the size of the decline in spreads and the degree of competition in market-making services, suggesting that some dealers might have captured at least part of the benefits that had arisen fro the lessening in the information asymmetry created by the mandated disclosure of oil reserve values.

Bartov and Bodnar (1996) focused in trade volume and examined whether differences in information asymmetry explained more informative accounting choices. They focused on SFAS No. 25 (Foreign Currency Translation) that permitted firms to choose between two different accounting methods – either the current rate method (i.e. foreign currency as functional currency) or the temporal method (i.e. dollar as the functional currency) – for measuring and reporting the impact of exchange rate changes on foreign operations. Results based on a logistic regression showed that trading volume was significantly

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related to firms' probability of choosing the foreign currency as their functional currency. Therefore, these findings were consistent with the prediction that firms with high information asymmetry attempted to reduce it through the adoption of more informative accounting procedure.

Some studies focused on a comparison among different accounting standard sets. Auer (1996), for instance, considered changes in share price volatility for Swiss firms that had switched from Swiss GAAP to EC-Directives or IAS. Since the new standard sets were supposed to have higher information content, he expected the volatility of abnormal returns to be higher for EC-directives or IAS in comparison to Swiss GAAP. A higher volatility (variance) would have suggested higher information processing of the market within the event window represented by earnings releases. Results showed a significant change in the variance of abnormal returns for firms which had switched to the EC-Directives or IAS but no statistically significant differences in the variance of abnormal returns for earnings based on EC-Directives or IAS, therefore suggesting that for investors IAS-based earnings do not convey higher information than EC-Directives.

Leuz (1999) examined German firms that faced a similar regulatory environment, but by virtue of their listing on the "New Market" – a market segment for growth firms in emerging industries - have to produce financial statements in accordance with either IAS or U.S.

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GAAP. He documented that the choice between IAS and U.S. GAAP has no measurable consequences for the proxies used for the information asymmetry component of the cost of capital – namely, the bid-ask spreads and trading volume - of these firms. At least for New Market firms, the choice between IAS and U.S. GAAP appeared to be of little consequence for information asymmetry and market liquidity. Subsequent analyses of analysts' forecast dispersion, initial public offering underpricing, and firms' standard choices corroborated these findings. Therefore, widespread claims that U.S. GAAP produced financial statements of higher informational quality than IAS resulted not supported.

Finally, Leuz and Verrecchia (2000) studied German firms that had switched from German GAAP to IAS or U.S. GAAP and showed that bid-ask spreads were lower and trading volumes higher for firms employing international standards. They also checked whether the switch to the IAS or the U.S. GAAP leaded to less share price volatility but they were unable to document a negative association around the switch.

Both Leuz (1999) and Leuz and Verrecchia (2000) focused on firms reporting under different accounting regimes but traded on the same stock exchange. Their approach was similar to that of Bartov, Goldberg and Kim (2002), who also focused on German firms traded on German stock so as to hold constant institutional factors such as listing

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requirements, other disclosure requirements, regulatory environmental and other market microstructure factors that could confound results. Their findings were similar even though they used different research methodologies. A finding of higher quality of earnings reported under U.S. GAAP and IAS over German GAAP in Bartov, Golderg and Kim (2002) may be consistent with the Leuz and Verrecchia findings, as higher quality of reported earnings may be a contributing factor to the overall improvement in disclosure quality.

5. RESEARCH METHODOLOGY

This study belongs to the value-relevance research area.

Most value-relevance studies assume that accounting's dominant role is equity valuation, i.e. to provide measures associated with value or measures of value or to provide information relevant for equity valuation. In particular, value-relevance research determines whether an accounting number is useful for valuing the firm by investigating whether the accounting number is associated with stock prices. Incremental association research investigates whether an accounting number is helpful in explaining value or returns given other variables. That accounting number is deemed to be value relevant if its estimated regression coefficient is significantly different from zero. The coefficient sign also provides evidence on the kind of relation exists between

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accounting numbers and inputs to a market valuation model. This kind of approach is the same used to test the first hypothesis in this research.

Relative association studies compare the association between stock market values (or changes in values) and alternative earning book value measures. Many studies on the relative informativeness of different accounting sets, for example, examined the association of different earning and book value numbers with stock market values or returns by testing for differences in the R^2 of the regressions where those different accounting numbers were the independent variables. The accounting number with the greater R^2 is described as being more value relevant. A similar approach is used in this study to test the second hypothesis.

Value relevance studies commonly use two different approaches to draw inferences: the "direct valuation" and the "inputs-to-equity-valuation" approaches (Holthausen and Watts 2001). In the direct valuation approach, accounting earnings or book values are intended to measure or be highly associated with equity market value changes or levels. In the inputs-to-equity valuation approach, accounting's role is to provide information on inputs to valuation models that investors use in valuing firms' equity. That inference requires a valuation theory and model and an assumed link between the accounting numbers and variables entering into the valuation model.

In this study, the effects of the IAS/IFRS adoption in Europe are not investigated by considering their impact on prices directly but focusing

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on the cost of equity. However, since prices adjust so as to make the expected return from future earnings coherent with the risk of holding a stock, the effects of the IAS/IFRS adoption on the cost of equity passes through prices in any case. By examining how the cost of equity reacts to accounting changes, evidence is provided on the new accounting standards' relevance.

5.1. The cost of equity capital

The cost of equity for a firm is the expected return that investors require in order to hold a stock characterized by a certain level of risk. Therefore, firm stock prices adjust in order to make the expected return coherent with the risk.

Since the cost of equity capital is an *expected* rate of return, it cannot directly be observed on the market.

Three main different criteria can be used to estimate this variable.

The first and simplest approach is based on the assumption that historical realized returns are good indicators of expected returns and, therefore, can be used as proxies for the cost of equity capital. However, prior research has shown difficulty in establishing a significant association between returns and market beta, which is the most widely accepted measure of risk (Fama and French 1992). Lakonishok (1993) has also provided evidence that, if average returns were used to proxy for the cost of equity capital, at least 70 years of data would be required in order to have a market beta which is a statistically significant risk

factor. Hence, it is unlikely that this approach would provide a powerful test of the hypotheses stated in this research.

The second approach is based on the assumption that investors demand a higher expected return for taking additional systematic risk. Following the CAPM or an APT model, the cost of equity of a firm is estimated as a function of the systematic risk component of its stock, as measured by its sensitivity to the systematic risk factor, and of the market price of these risk factors. This approach can be useful for estimating what the theoretical cost of equity for a firm should be in a context of capital market equilibrium. However, it is not the right method to use if one wants to estimate what the true cost of equity for a firm actually is (Maccario, Sironi and Zazzara 2002).

A third approach is that of extracting the cost of equity directly from stock prices. The assumption in this approach is that a public company's current stock embodies market's expectation of the rate of return required by investing in that stock.

Two different models are proposed in theory and used in practice in order to estimate the cost of equity implied in stock prices: the residual income model developed by Edwards and Bell (1961), Ohlson (1995) and Feltham and Ohlson (1995) and the Gordon model developed by Gordon and Shapiro (1956). In both models, the cost of equity is estimated by computing present value backward: since the present value (i.e. the current stock price) is known, calculations are

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reconfigured so as to extract the cost of equity capital. Obviously, the estimation of the cost of equity directly from stock market prices relies on the assumption that the market is efficient in the sense that prices fully reflect the actual value of the expected future returns and there are no market anomalies and mispricing.

Botosan and Plumlee (2000) assessed the validity of both the methodologies abovementioned for estimating the *ex ante* cost of equity. They examined four measures of expected cost of equity capital: one based on the residual income model, another on a finite horizon specification of the Gordon growth model, and the remaining two on a Gordon growth model with growth, respectively, in earning and in dividends. With Pearson's correlation coefficients, market beta resulted to be significantly correlated with all four measures. Therefore, all these measures were found to be good estimates for the cost of equity.

This research estimates the cost of equity by using the Gordon growth model approach with growth in earnings. This choice is coherent with previous studies that have shown that the residual income model works only under the condition that all gains and losses that affect forecasted book value flow through forecasted earnings - i.e. clean surplus accounting holds - and this is not the case of the IAS or the IV and VII European Directives (Ohlson 1995, Botosan 1997). Further, recent research has specifically verified that earning capitalization is the

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dominant valuation model when firms report under the International Accounting Standards (Ashbaugh and Olsson 2002).

Nevertheless, the relevance of expected earnings by analysts in determining stock price has been tested regressing prices over expected earnings. The regression reported in Table 3 shows an adjusted R-square of 0,9647, confirming the high value relevance of expected earnings as a driver for stock prices. Prices and expected earnings are as defined in paragraph 5.3.1.

Following the standard constant growth Gordon model, the stock price of a firm can be expressed as:

$$(1)\ P_t = E(DPS_{t+1})/(K_e - g)$$

where $E(DPS_{t+1})$ is the expected dividend in the next year, Ke is the required rate of return on equity, and g is the expected long-term sustainable growth rate in dividends (Gordon and Shapiro 1956; Gordon and Gordon 1997; Harris and Marnston 1992 and 2001; Claus and Thomas 2001; Gebhardt et al. 2001; Fama and French 2002).

According to this formula, current stock price is equal to expected future dividends discounted to a present value at a rate that represents the cost of equity for that firm.

Equation (1) is an application of the general "discounted cash flow" (DCF) model for evaluation because it considers the value of a firm as a function of three variables: the ability to generate cash flows, the

expected growth rate of these cash flows and the uncertainty associated with these cash flows.

The expected dividend per share is often obtained by multiplying the expected earnings per share by the firm's payout ratio.

Therefore, equation (1) can be written as:

$$(2)\ P_t = [E(EPS_{t+1})(1-b)]/(K_e - g)$$

and

$$(3)\ K_e = \{[E(EPS_{t+1})(1-b)]/P_t\} + g$$

where b is the retention rate, i.e. the fraction of earnings that get reinvested in the company. If dividends are derived from earnings, g is no longer the expected growth in dividends but the expected rate of change in net income per share.

Equation (3) shows that, all else being equal, a firm with a higher expected price/earnings ratio would have a lower cost of equity.

Under the "fundamental growth" hypothesis, where g is supposed to be equal to $b*ROE$, and the return on reinvested earnings $b*ROE$ equal to the required return of equity capital, Ke, equation (3) becomes:

$$(4)\ K_e = E(EPS_{t+1})/P_t$$

Under certain assumptions, the E(EPS)/P ratio is a good *proxy* for the *ex ante* return required on stocks.

A relatively large number of studies have estimated the cost of equity by using the E(EPS)/P ratio. Many of them have focused on cross-country differences in the cost of capital (Ando and Auerbach 1988 and 1990,

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Kester and Luehrman 1989 and 1992, Friend and Tokutsu 1987, Sironi 2003 for non-financial firms; Zimmer and McCauley 1991, Maccario, Sironi and Zazzara 2002 for cross-country differences in the cost of capital for banks).

With specific regard to this research, if a firm's expected long-term growth rate and payout ratio did not change over the time period under investigation, i.e. two years only, the relevant part of equation (3) for the analysis would reduce to equation (4).

The above hypothesis about the expected long-term growth rate is not particularly strong if one considers that analysts often estimate it on the basis of a firm's earnings time series (Damodaran 2001). Adding the last data relative to the year before the IAS implementation to this time series should not significantly change the expected long-term growth rate g used for forecasting in the next year, especially if the time series is quite long and the last data added does not differ significantly from the previous ones. A fixed dividend policy is an assumption that may not hold in practice but, as with all models, permits parsimonious representation of the complex real world.

Joos and Lang (1994), for instance, assumed that the expected long-term growth rate was the same for all French, German and U.K. companies included in their research and that the pay-out ratio for each sample firm was constant over time period under consideration. Maccario, Sironi, Zazzara (2001) also based their univariate cross-country

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comparison of banks' cost of equity upon changes in the standard deviation of the banks' $E(EPS_{t+1})/P_t$ ratios over the period 1993-2001.

The approach followed in this research is that of using the cost of equity computed by using formula (4) and then checking for possible differences due to other factors than the IAS/IFRS implementation in the regression discussed in paragraph 5.3.2.

5.2. Sample and data

Given the wide IAS adoption both with regard to geographic extension (all the European Union) and industries involved (all manufacturing and non-manufacturing firms), many criteria could be used for selecting a sample.

This study considers only one industry in order to limit the number of independent variables included in the regression illustrated afterwards focusing on the bank industry for three reasons specifically. First of all, the bank industry is characterized by a low diversification of firms' activities. This fact can significantly contribute to reduce difficulties in isolating the effect of the IAS/IFRS adoption on the cost of equity. Secondly, the bank industry includes many firms, thus the sample selected is quite large in comparison to other industries. Lastly, banks have been at the centre of a lively debate over the advisability for them of adopting the IAS/IFRS and the fair value accounting in particular. Actually, the main opposition to the adoption of the IAS 32 and 39 came from banks, which were afraid of an increase in volatility in their

financial report results and of the consequences in terms of capital requirements provided by the Basel Accord. After long discussion and lobbying activity by banks, the European Commission endorsed the IAS 39 with some "carved out" sections relative to the full fair value option and of certain hedge accounting provisions in November 2004, whereas the IAS 32 was adopted in December 2004. Finally, the European Commission issued the new rules on the use of the fair value option in November 2005. Consequently, focusing on the bank industry permits to test the effects of the IAS/IFRS implementation with specific regard to a sector for which, so far, related benefits have been long questioned.

In order to avoid problems connected to different currencies, only banks from the European Monetary Union have been selected.

This research considers consolidated accounts, for which the IAS/IFRS are mandatory in all the European Union. Focusing on mandatory changes in measurement techniques avoid self-selection bias. As outlined previously, the distinction between a commitment and a voluntary disclosure is quite relevant for studies on the cost of equity, since the former is independent of the content of the information, whereas the latter is a decision taken by the firm after it has observed the content of the information. Previous research, for example, documented that firms expanded and reversed voluntary disclosure as a function of earning performance (Miller 1999). Conversely, a

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commitment requires that information be disclose regardless of its content.

In addition, the choice of using consolidated accounts is supported by previous research which has shown that consolidated data are more value-relevant than unconsolidated ones (Alford, Jones, Leftwich and Zmijewski 1993 and Harris, Lang and Moeller 1994). Joos and Lang (1994) also investigated the market impact of the IV and VII directives working on consolidated accounts.

The time period included in this analysis covers two years, one before and one after the IAS implementation (hereafter pre-IAS period and post-IAS period, respectively). The pre-IAS period goes from the issue of the first quarterly report 2004 up to the third quarterly report 2004, whereas the post-IAS period goes from the issue of the first quarterly report 2005 prepared in accordance with the new standards or with a reconciliation form to the IAS/IFRS - when available - up to the third quarterly report 2005.

The yearly report 2004 is not included because, even though it was still issued according to domestic accounting standards, at the time of its approval by the board (i.e. march 2005), firms started releasing news on the effects of the IAS/IFRS adoption on their accounts. As a consequence, the distinction between IAS and non-IAS effects on the cost of equity is not so clear cut. More over, it has been checked that none of the sample firms released any news on qualitative or

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quantitative effects of the IAS/IFRS adoption on their accounts at the time of the quarterly reported included in the pre-IAS period.

The post-IAS period under consideration is not very long. However, given the high impact that the IAS/IFRS implementation is expected to have on the first report issued according to such standards, some evidence on the effect of the IAS/IFRS adoption on the cost of equity - if any - should already be found in the first year after such a big change.

The introduction of the fair value accounting, for example, brings assets' values closer to their current values and makes book value converge to its economic value. All the accounting adjustments related to the first adoption of the IAS are debited or credited directly to equity and, therefore, affect its book value significantly. Consequently, if financial reports are value relevant, then first reports issued in accordance to the new standard set should already affect market prices in the period immediately after the IAS implementation.

The length of the pre-IAS period has been defined according to the length of the post-IAS period. This choice is due to the willingness to compare two sets of matched data.

Differently from most of research in this field, this study tests value-relevance differences between the European Directives' accounting system and the IAS/IFRS set with regard to the same sample. This circumstance should ease attribute differences found in the cost of equity between the two periods to the IAS/IFRS implementation.

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For each sample firm, any observation relative to a certain quarterly report in the pre-IAS period has a corresponding observation relative to the same quarterly report in the post-IAS period. In such a way, measurements in the cost of equity refer to the same sample before and after the IAS/IFRS implementation.

To identify potential sample firms, the Bankscope database has been used. This search yielded 114 firms. However, 16 of these did not prepare consolidated accounts, whereas 12 firms already used the IAS/IFRS in the pre-IAS period. 11 of them were listed on the German or Austrian market and were already permitted by law to prepare their consolidated financial statements in accordance with internationally recognized accounting principles, such as IAS/IFRS and U.S. GAAP, before 2005. Such banks were: · Aareal Bank, Baader Wertpapierhandelsbank, Bank Austria Creditanstalt, Bayerische Hypo- und Vereinsbank, Comdirect Bank, Commerzbank, DAB Bank, Deutsche Bank, Erste Bank, HSBC Trinkaus & Burkhardt, Oesterreichische Volksbanken. 1 banks, the EFG Eurobank Ergasias, was from Greece. At the time of this research, 2 banks were still using domestic GAAP in the post-IAS period since the closing date for their financial statement was in June.

Moreover, firms which were cross-listed on the E.U. and U.S. stock-exchanges in the pre-IAS period have been excluded from this research. According to the SEC regulation, firms listed on the U.S. Market are

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required to present in their Form F- 20 the most significant adjustments to consolidated net income and shareholders' equity which would be applied if U.S. GAAP had been applied to their consolidated financial statements. Even though IAS/IFRS and U.S. GAAP differ in some aspects, it has previously outlined how the IAS/IFRS approach to financial reporting is much closer to the U.S. regulation than to the European IV and VII directives.

In the U.S. GAAP accrual prevails over prudence and fair value is the basic criterion for financial reporting. Given that previous research found evidence of the value relevance of Form 20-F (Amir, Harris and Venuti 1993 and Harris and Muller 1999), for cross-listed firms the market effect of accounting rules close to the IAS/IFRS could already be present during the pre-IAS period. Firms also listed on the U.S. market at the time of this research were: ABN-Amro, Allied Irish Bank, Anglo Irish Bank, Banco Bilbao Vizcaya Argentaria, Banco Espirito Santo, Banco Santander Central Hispano, National Bank of Greece and San Paolo IMI.

For 41 firms some or all data necessary to this research were not available. Most of them were cooperative banks not covered by databases or analysts.

In the end, the final sample resulted in 35 firms from 7 different countries. The countries covered by this research are: Finland, France, Greece, Ireland, Italy, Spain and Portugal. 1 bank is from Finland, 4

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banks from France, 3 banks from Greece, 1 from Ireland, 18 from Italy, 7 from Spain and 1 from Portugal.

Considering observations for which all the data used in the regression are available, observations included in this study resulted in 142, 71 relative to the pre-IAS and 71 relative to the post-IAS period.

Table 1 displays a summary of the sample selection process, whereas Table 2 reports the list of banks included in the sample.

Accounting variables used in the regressions have been obtained from BankScope or, when missing, from banks' websites.

Data on individual stocks prices have been obtained from Datastream, a database containing daily information on historical stock market prices from all major stock exchanges. Data relative to expected earnings and expected dividend have been obtained from I/B/E/S or, when missing, from banks' website.

5.3. The methodologies

Two methodologies have been employed in order to investigate the effects of the IAS/IFRS adoption in Europe on the cost of equity: a univariate analysis and a multivariate regression.

5.3.1. Univariate analysis

As in many studies on the value relevance of accounting data, a univariate analysis is here performed.

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The Effects of the IAS/IFRS Adoption in the European Union on the Cost of Equity:
First Evidence from the Bank Industry

Existing research provides a variety of measures which reflect the effects of accounting changes or differences across countries. In their study on the effects of the IV and VII European directives on capital market, Joss and Lang (1994) based their univariate analysis on three different measures of profitability: return of equity, earnings/price ratio and book-to-market ratio.

Since this study focuses on the effect of the IAS/IFRS adoption on the cost of equity, the univariate analysis is performed on the following ratio: $K_e = E(EPS_{t+1})/P_t$

where $E(EPS_{t+1})$ is the analysts' expected earning per share in the next year and P_t is the stock price. As outlined previously, this ratio is considered to be a good proxy for the *ex ante* return required on stocks.

Data on analysts' forecasts have been obtained from I/B/E/S. In this research, $E(EPS_{t+1})$ is the median of the expected earning per share provided by analysts at the end of the month in which the deadline for issuing the financial report is set. Stock price is computed as a simple average of prices over a time period including the 15 days before and one month after the deadline for issuing the quarterly report. During this time period prices are expected to react to new information encompassed in the reports.

The length of the window assumed for price reaction to new information is discretionary. However, the choice of the length of the window used in event studies is always discretionary and involves a

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trade-off: windows that are too wide increase the noise-to-signal ratio and thereby decrease the power of the experiment, whereas windows that are too narrow might exclude part of the reaction to the event of interest (Bartov, Goldberg and Kim 2002). The time period assumed for price reaction to new information in the report also includes 15 days prior to its disclosure since previous evidence has shown that some information can be anticipated to the market (Rees and Elgers 1997). Therefore, considering the time period immediately prior to each report issuing should include part of price reaction to anticipated information. Data on individual stock prices have been obtained from Datastream, which contains daily information on historical stock market prices from all the major stock exchanges.

In order to verify the first hypothesis, i.e. whether the IAS implementation has reduced firms' cost of equity, the median of K_e is computed for the sample firms which have switched to the IAS/IFRS in 2005 over both the pre- and post-IAS period. Coherently to the first hypothesis, the median of K_e relative to the pre-IAS period is expected to be higher before the IAS/IFRS adoption. A decrease in K_e should in fact occur if the first hypothesis was true.

In order to test the second hypothesis, i.e. whether cross-country differences in firms' cost of equity have reduced after the IAS implementation, the standard deviation is computed for the sample firms over the pre- and post-IAS period. The standard deviation is here

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used to measure the cross-country variability in the cost of equity. Then, the relative sample standard deviation is computed as follows (Black 1980, Bildersee, Cheh and Lee 1990, Walton 1992, Maccario, Sironi and Zazzara 2001):

$$(5)\ R\sigma_{Ke} = \sigma_{Ke\ post\text{-}IAS}/\sigma_{Ke\ pre\text{-}IAS}$$

where pre-IAS and post-IAS are the period before and after the IAS implementation, respectively.

Differences across firms' cost of equity have reduced, remained the same or improved depending upon whether the ratio is less, equal or greater than one. If this ratio is less than one, then accounting standardization has led to a reduction in cross-countries' differences of the cost of equity.

Such a result would prove that firms which had implemented the IAS/IFRS have gained a comparative advantage on the equity market in comparison to firms still adopting national accounting standards. Once more, this result should be carefully taken into consideration both by non-consolidating companies that are allowed but not obliged to use the new standard set and by national Regulators which do not permit IAS in annual accounts.

If this ratio is more than one, it could have happened that the fuller disclosure provided by the IAS/IFRS allows investors to better differentiate among firms' level of risk and to better assess their cost of equity. The effect of accounting standardization in terms of reduction of

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cross-countries differences in the cost of capital could have been counterbalanced by the fuller disclosure provided by the IAS/IFRS which enables investors to better differentiate among firms' level of risk. As a result, differences in cost of capital could result to be higher than it would have been if the IAS/IFRS had not been implemented.

Significance of the results obtained is tested statistically.

5.3.2. Multivariate regression

The univariate analysis outlined previously is based on *ceteris paribus* assumptions which may not hold in practice. The cost of equity estimated by the DCF method is in fact a total cost of equity which takes into account different factors. Hence, the use of the univariate analysis alone could increase the probability of a type I error and lead to incorrectly attributing a decrease or convergence in the cost of equity to the accounting change when such a decrease or convergence is actually due to other correlated factors.

In order to isolate the effect of the IAS/IFRS adoption on the cost of equity, a cross-sectional and multivariate regression is therefore performed. The use of the multivariate regression illustrated hereafter permits to check for differences in banks' specific variables and isolate the effect of the IAS/IFRS implementation on the expected return required by investors. In this way, cross-sectional relations between the implied cost of equity and various firm characteristics are simultaneously verified.

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5.3.2.1. Multivariate regression for testing hypothesis 1

The following pooled cross-sectional regression for the pre- and post-IAS period is performed in order to test the first research hypothesis:

(1) $Ke_{it} = \alpha_o + \beta_1 Risk\text{-}free_t + \beta_2 Growth_{it} + \beta_3 Pay\text{-}out_{it} - \beta_4 Lev_{it} + \beta_5 Lev^* IAS_{it} + \beta_6 Size_{it} + \varepsilon$

where Ke_{it} is the cost of equity of firm i relative to report t, $Risk\text{-}free_t$ is the risk-free rate, $Growth_{it}$ is the expected growth rate in earnings, $Pay\text{-}out_{it}$ is the expected pay-out ratio, Lev_{it} is the book leverage, $Lev^* IAS_{it}$ identifies the differential effect of reporting book leverage under the IAS/IFRS, *IAS* is a dummy which equals one if financial report is prepared under the IAS/IFRS and zero otherwise, *Size* is the natural logarithm of market capitalization.

As in Joss and Lang (1994) and Maccario, Sironi and Zazzara (2002), the market beta is not included in the above regression.

The market beta is a measure of the systematic risk which is used in the CAPM as an appropriate modifier of the general equity premium in order to estimate the firm's specific risk premium.

A cross-sectional analysis of the cost of equity must take into consideration differences in the firm-specific level of risk. However, the approach followed here is that of considering the main factors which affect firms' specific level of risk separately. In this perspective, differences in risk assessment due to a different financial leverages are caught by the *Lev* variable, differences due to different size are captured

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by an appropriate variable, possible differences in the cost of equity due to different accounting systems are measured by the *IAS*Lev* variable. Such a choice is also based on previous evidence showing that the CAPM is not the only method used for estimating the cost of equity (Gitman and Vandenberg 2000, Bruner et al. 2001). Moreover, including the beta could create multicollinearity problem in the regression since the many variables included in the regression are themselves cause of the market beta variation.

5.3.2.1.1. Variable definitions

The dependent variable

The cost of equity. For each observation, the following *proxy* for the cost of equity is computed:

$$K_e = E(EPS_{t+1})/P_t$$

where $E(EPS_{t+1})$ is the expected earning per share in the next year and P_t is the stock price. The cost of equity has been estimated by considering the analysts' earnings forecasts for the following year. Data on analysts' forecasts have been obtained from I/B/E/S.

In this research, $E(EPS_{t+1})$ is the median of the expected earning per share provided by analysts at the end of the month in which the deadline for issuing the financial report is set. The cost of equity has been estimated by considering the analysts' earnings forecasts for the following year. Data on analysts' forecasts have been obtained from I/B/E/S.

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The stock price is an average stock price computed as a simple average of prices in the 15 days before and one month after the deadline for issuing the quarterly report. During this period prices are expected to react to new information encompassed in reports. As mentioned with regard to the univariate analysis, the length of the window assumed for price reaction to new information is discretionary. However, the choice of the length of the window used in event studies is always discretionary and involves a trade-off: windows that are too wide increase the noise-to-signal ratio and thereby decrease the power of the experiment, whereas windows that are too narrow might exclude part of the reaction to the event of interest (Barlov, Goldberg and Kim 2002). The time period assumed for price reaction to new information in the report also includes 15 days prior to its disclosure since previous evidence has shown that some information can be anticipated to the market (Rees and Elgers 1997). Therefore, considering the time period immediately prior to each report issuing should include part of price reaction to anticipated information.

Data on individual stock prices have been obtained from Datastream, which contains daily information on historical stock market prices from all the major stock exchanges.

The independent variables

*Lev*IAS* is the independent variable used to verify the first hypotheses stated in this research with the multivariate regression. However, in

order to avoid erroneously attributing changes in the cost of capital to accounting rules when similar differences have been caused by different factors, the main factors which may affect the cost of equity have been included as control variables in the cross-sectional analysis.

Risk-free rate. One important factor which is usually taken into account by investors in order to define the level of the cost of equity is the return available as of the valuation date on a security that the market generally regards as free of the risk of default. In this research, the 10 years German bond yield has been used as a risk-free rate. Data were obtained by Datastream. Since the risk-free interest rate is positively related to the cost of equity, a positive coefficient is expected to be found.

Expected growth rate in earnings. Since the cost of equity used as dependent variable is an *expected* rate of return, it cannot be observed on the market directly but must be extracted from stock prices. As outlined previously, following the standard constant growth Gordon model, the cost of equity of a firm can be expressed as:

$$K_e = E(EPS_{t+1})/P_t$$

Under certain assumptions, the E(EPS)/P ratio is a good *proxy* for the *ex ante* return required on stocks. In fact, if a firm's expected long-term growth rate and payout ratio do not change over the time period under investigation, the relevant part of Gordon model's equation used to extract the cost of equity reduces to the above equation.

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As outlined previously, a large number of studies have estimated the cost of equity by using this ratio. Many of them have focused on cross-country differences in the cost of capital (Ando and Auerbach 1988 and 1990, Kester and Luehrman 1989 and 1992, Friend and Tokutsu 1987, Sironi 2003 for non-financial firms; Zimmer and McCauley 1991, Maccario, Sironi and Zazzara 2002 for cross-country differences in the cost of capital for banks).

With regard to this research, the above hypothesis about the expected long-term growth rate is not particularly strong if one considers that analysts often forecast it on the basis of a firm's earnings time series (Damodaran 2001). Adding the last data relative to the year before the IAS implementation to this time series should not significantly change the expected long-term growth rate g used for forecasting in the next year, especially if the time series is quite long and the last data added does not differ significantly from the previous ones. Neither does this hypothesis seem particularly strong when compared to previous research. Joos and Lang (1994) assumed that the expected long-term growth rate was the same for all French, German and U.K. companies included in their research. Maccario, Sironi, Zazzara (2001) also based their univariate cross-country comparison of banks' cost of equity upon changes in the standard deviation of the banks' $E(EPS_{t+1})/P_t$ ratios over the period 1993-2001.

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However, if the expected growth rate changes over the time period under analysis, then differences in the E(EPS)/P ratio can be attributable such a change rather than to other factors such as the IAS/IFRS implementation. As a consequence, the expected growth rate is considered as independent variable in the multivariate regression and a negative association is expected. In fact, all else being equal, a higher expected growth rate implies a lower E(EPS)/P ratio.

The expected rate of growth in earnings can be estimated in three alternative ways (Maccario, Sironi and Zazzara 2002).

The first method projects in the near future the average of the historical growth. This is a suitable procedure when time series on annual growth are long enough to provide information across a whole economic cycle. The correlation between past and future earnings' growth rates is much higher for financial firms than for other firms, however a shortcoming regarding the application of historical growth is due to possible changes in the regulatory environment.

The second method is based upon the so-called "fundamental growth". Under the assumptions that the return on equity is constant over time ($ROE_t = ROE_{t-1} = ROE$) and that the bank is not allowed to raise equity by issuing new shares, the expected growth in earnings can be expressed as follows: $g = ROE^*$ *retention ratio* $= (1- payout)^* ROE$.

In this equation, the expected growth in earnings is a function of the share of earnings that get reinvested in the firm and of the return on

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equity. Damodaran (2001) maintains that this equation works very well for financial firms. This is due to the fact that in a stable regulatory framework based on risk-weighted capital ratios, the retention ratio is a reliable proxy of how much the bank can expand in the future.

The assumption underlying this equation regards stable growth. Growth is defined as stable when it is less than or equal to the growth rate of the economy. To judge if a bank is in a stable growth path, one has to consider three factors. The first one is the size of the firm with respect to the market in which it operates. Large banks will be unlikely to show higher growth rates (especially for long periods of time) if their core businesses are mature. The second factor is the nature of competition. If competition is strong, high growth rates are less likely to be sustainable for long periods of time and stable growth is therefore more likely. The third factor is regulation. A market-oriented regulatory framework can foster new entrances, therefore stabilizing the rate of growth (Maccario, Sironi and Zazzara 2002).

A third method derives expected growth in earnings from equity analysts' forecasts – often called "consensus forecasts". Since the cost of equity is here computed by using analysts' forecasts on earnings, the expected growth rate is coherently derived from analysts' forecasts. In this way, the cost of equity is directly related to who makes the market and prices stocks. The I/B/E/S database provides data relative to the long-term expected growth rate only for few sample firms. Conversely,

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data relative to expected earnings are available on I/B/E/S for most of them. Hence, coherently to analysts' practice, the growth rate included in regression (1) is a medium-term earnings growth rate computed as the average growth in expected earnings for the following three/four years.

Pay-out ratio. For any kind of firm, the payout ratio is the ratio between dividends and earnings. Many studies on the cost of equity, as well as many financial analysts, assume a fixed dividend policy (Ando and Auerbach 1988 and 1990, Kester and Luehrman 1989 and 1992, Friend and Tokutsu 1987, Sironi 2003). Such an assumption may not hold in practice but, as with all models, permits parsimonious representation of the complex real world.

For financial services firms, including banks, this ratio has historically been more stable and higher than for any other industry (Maccario, Sironi and Zazzara 2002). Damodaran (2001) detects some possible explanations for this trend. Firstly, financial firms need less investments in physical capital than other firms. This allows them to provide higher cash flows to their shareholders. Secondly, banks have a reputation on the market as high dividend payers. Therefore, investors with a higher propensity to earn annual cash flows tend to buy banks' shares. As a consequence, it is difficult for banking firms to change their dividend policy (Maccario, Sironi and Zazzara 2002).

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Since the cost of equity is estimated by using the standard constant growth Gordon model, it results to be a positive function of the pay-out ratio. Consequently, a positive coefficient for the pay-out ratio variable is expected to be found by performing the multivariate regression (1). Data on pay-out ratios are derived from the I/B/E/S database.

Leverage. In theory, a firm's cost of equity should be an increasing function of the amount of debt in its capital structure (Modigliani and Miller 1958). Using an extensive data set of historical returns, Fama and French (1992) documented a weak positive relation between leverage – computed as the ratio of debts to total assets - and *ex post* mean stock returns. The relation between leverage and *ex ante* cost of equity was examined by Gebhardt, Lee and Swaminathan (2001), who found that both market leverage and book leverage – this one computed as the ratio of long-term debts to book value of equity - exhibit a significant positive correlation with the implied cost of capital.

The only studies on banks' cost of equity (Zimmer and McCauley 1991 and Maccario, Sironi, Zazzara 2002) used the Tier 1 as a proxy for financial risk. In particular, Zimmer and McCauley (1991) assumed an identical Tier 1 ratio for all banks from different countries. However, since the costs of debt and equity for a firm depend on its capital structure, separately estimating the cost of equity and its capital ratio represents a violation of Modigliani and Miller's famous proposition I. In fact a higher cost of Tier 1 (equity) capital for a bank could be

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explained by a lower Tier 1 ratio just as a higher cost of debt for a non financial firm could be explained by a higher leverage. Maccario, Sironi and Zazzara (2001) overcame this limit of the Zimmer and McCauley's analysis by using the actual Tier 1 ratio as a proxy for financial leverage in their multivariate regression.

Differently from these studies, however, this research does not use the Tier 1 capital as a proxy for financial risk because its aim is not that of testing the effect of imposing uniform capital standards on banks across countries but verifying the effect of accounting changes on capital market. Hence, as in previous studies, the ratio Equity Book Value/ Total Assets – i.e. book leverage - is here used to study the relation between the firm's specific financial risk and its cost of equity and a negative sign is expected for the *Lev* variable.

IAS. The *IAS* variable is a dummy variable that equals one if financial reports are based on IAS/IFRS and zero otherwise. An interaction term of the accounting standard dummy variable IAS and the *Lev* variable is introduced in the regression so as to reflect the differential effect on the cost of equity of reporting book leverage under IAS/IFRS, over non-IAS/IFRS requirements, and of providing disclosure on the financial leverage under IAS/IFRS (Bartov, Goldberg and Kim 2002).

The *IAS dummy* variable alone, however, should capture other effects - different from those relative to the financial leverage - that the *Lev*IAS*

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variable is not able to grasp. Accordingly to the first hypothesis, the IAS dummy variable should have a negative coefficient.

Lev*IAS. It has previously been mentioned that the introduction of the IAS/IFRS regulation and adoption of fair value accounting is expected to have a relevant impact on the first report issued according to the new standards. The introduction of the fair value accounting, for example, brings assets' values closer to their current values and makes book value converge to its economic value. All accounting adjustments related to the first adoption of the IAS/IFRS are debited or credited directly to equity and affect its book value significantly.

In order to isolate the effect on the cost of equity of the book leverage under the new accounting set, an interaction term of an accounting standard dummy variable *IAS* and the *Lev* variable is introduced in the regression so as to reflect the differential effect of reporting and providing disclosure on the book leverage under IAS/IFRS, over non-IAS/IFRS requirements (Bartov, Goldberg and Kim 2002). IAS is a dummy variable that equals one if the report is based on IAS/IFRS and zero otherwise. If the information on the book leverage under the IAS/IFRS contributes to reduce the cost of equity, a negative coefficient for the interaction term of the IAS dummy and leverage should be found. A negative coefficient of the *Lev*IAS* variable would prove that firms which had moved to the IAS/IFRS have gained a competitive advantage on the equity market in comparison to firms still adopting

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national accounting standards. Such an evidence should be carefully taken into consideration both by non-consolidating companies which are allowed but not obliged to use the new standard set and by national Regulators which do not permit IAS in annual accounts.

Size. Disclosure research has found that firms which are better connected with intermediaries, such as analysts and institutional investors, have a lower risk premium because easy availability of information reduces information asymmetries arising either between the firm and its shareholders or among potential buyers and sellers of firm shares. This, in turn, reduces the discount at which firm shares are sold, and hence lower the cost of capital (Diamond and Verrecchia 1991, Baiman and Verrecchia 1996, Botosan 1997). Because information is more easily available for larger firms than for smaller ones, firm size – i.e. market capitalization of equity – has often been used in research as a proxy for the availability of information and a negative association between size and the cost of equity has been detected (Berk 1995, Botosan 1997, Goode and Mohan ram 2003). Coherently to previous research, the natural logarithm of market capitalization has therefore been used as a proxy for the information environment and a negative association between size and the cost of equity was expected to be found.

Table 4 reports a summary of the description, measurement and expected sign of independent variables.

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5.3.2.2. Multivariate regression for testing hypothesis 2

Inter-temporal or cross-sample differences in R^2 are usually employed in accounting research as indicators that the value-relevance of an accounting number has changed over time or differs across disclosure regimes. Joss and Lang (1994), for instance, tested whether cross-country differences among France, United Kingdom and Germany had reduced after the IV and VII European Directives' implementation by measuring convergence in the R^2 of the regressions of prices on accounting variables, performed for each country separately, over the post-directive period.

In order to test the second hypothesis of this research – i.e. whether accounting standardization has decreased cross-country differences in the cost of equity – a similar approach is used and the following regressions are performed with regard to the pre- and the post-IAS period, separately:

$$(2)\ Ke_{it\ (pre-IAS)} = \alpha_{0\ (pre-IAS)} + \beta_1 Riskfree_{t\ (pre-IAS)} + \beta_2 Growth_{it\ (pre-IAS)} + \beta_3 Pay\text{-}out_{it\ (pre-IAS)} + \beta_4 Lev_{it\ (pre-IAS)} + \beta_5 Size_{it\ (pre-IAS)} + \varepsilon$$

$$(3)\ Ke_{it} = a_{0\ (post-IAS)} + b_1 Riskfree_{t\ (post-IAS)} + b_2 Growth_{it\ (post-IAS)} + b_3 Pay\text{-}out_{it\ (post-IAS)} + b_4 Lev_{it\ (post-IAS)} + b_5 Size_{it\ (post-IAS)} + \varepsilon$$

Variables are as defined in paragraph 5.3.2.1.

The $Lev_{(pre-IAS)}$ variable is computed under different domestic accounting sets, whereas the $Lev_{(post-IAS)}$ variable is computed under a sole accounting

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system, the IAS/IFRS. Since accounting standardization is expected to reduce cross-country differences in the cost of equity, the reduction in variance of the residuals associated to the $Lev_{(post-IAS)}$ variable should be higher than that associated to the $Lev_{(pre-IAS)}$ one, which was computed under different accounting systems that could create measurement errors in comparing firms' level of risk and assessing their cost of equity.

For each period, the decrease in residuals associated to the *Lev* variable is computed as follows:

(3) SSR (Lev | other variables) = SSR (all the variables) − SSR (excluded Lev)

where *SSR* stands for the sum of squares of residuals.

SSR (Lev | other variables) measures the decrease in residuals associated to the *Lev* variable, *SSR (all the variables)* is the sum of square of residuals relative to the model which includes all the variables and *SSR (excluded Lev)* is the sum of square of residuals relative to the model which includes all the variables except for the *Lev* one.

If the $Lev_{(post-IAS)}$ variable contributed to a reduction in the cross-country variability of the cost of equity, then the *SSR (Lev | other variables)* for such a variable should be higher than that relative to the $Lev_{(pre-IAS)}$.

The statistical significance of results is tested by computing an F-test.

Performing regression (2) for the pre- IAS period and regression (3) for the post-IAS one separately also provides a robustness check for the first hypothesis. If book leverage under the IAS/IFRS contributes to reduce

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the cost of equity, then the $Lev_{(post-IAS)}$ variable must be found to have a higher – and negative – coefficient than the $Lev_{(pre-IAS)}$ variable. The *Lev* variable computed under the IAS/IFRS includes the effect of firms' commitment to an increased level of disclosure, hence it should contribute to reduce information asymmetry and – all else being equal – to lower the cost of equity.

6. RESULTS

6.1. Descriptive statistics

Table 5 displays descriptive statistics pertaining to the cost of equity and independent variables included in the regressions illustrated in paragraphs 5.3.2.1. and 5.3.2.2.

Results reported in Table 5 indicate that there are differences between the pre- and post-IAS period with regard to the mean and median of the cost of equity. Specifically, in the post-IAS period the cost of equity is – on average - 7,5% lower than that in the pre-IAS period, while the median is 9,9% lower than that in the pre-IAS period. Among variables which are expected to be positively related to the cost of equity, the *Risk-free* has decreased over the time period under consideration. As a consequence, the observed reduction in the cost of equity could be the result of the decrease in the risk-free rate. Conversely, in the post-IAS period the *Pay-out* variable exceeds, on average, that in the pre-IAS

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period. Therefore, such a change should have exerted an increasing effect on the cost of equity over the time period covered by this study.

Descriptive statistics also reveal that the *Lev* and *Growth* variables, which are supposed to be negatively related to the E(EPS)/P ratio used as a *proxy* for the cost of equity, have decreased in media and median over the period under consideration. As a consequence, their reduction should have exerted an increasing effect on the cost of equity.

Finally, Table 5 displays differences between the pre- and post-IAS period with regard to the standard deviation of the cost of equity. Specifically, in the post-IAS period the standard deviation of K_e is 13,6% lower than that in the pre-IAS period. However, during the post-IAS period, standard deviation has also decreased for all the control variables included in the regressions. Hence, a reduction in the variability of the cost of equity could be attributable to other factors different from accounting standardization.

6.2. Univariate analysis

As it results from Table 5, the cost of equity has reduced in media, median and standard deviation after the IAS/IFRS adoption.

In order to verify the first hypothesis - i.e. whether the IAS implementation reduces firms' cost of equity - the mean and the median of K_e has been computed for the sample firms with regard to the pre- and post-IAS period separately. Coherently to the first hypothesis, in the

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pre-IAS period K_e is 7,5% higher in media and 9,9% higher in median than after the IAS/IFRS adoption.

Differences in media have been tested statistically with a T-test, whereas differences in median have been tested with a Wilcoxon test. Results are reported in Panel A in Table 6.

The T-test rejects the null hypothesis of no differences in media at a 0,0016 level (two-tail test). The alternative hypothesis that the cost of equity is lower in the post-IAS is accepted at a 0,0008 level using a one-tail test.

The Wilcoxon Rank-Sum test also rejects the null hypothesis of no differences in median at a 0,003 level (two-tail test) and accepts the alternative hypothesis that in the post-IAS the median period is lower than in the pre-IAS period at a 0,0015 level using a one-tail test. Hence, differences in media and median between the cost of equity in the pre- and post-IAS period are statistically supported.

In order to test the second hypothesis - i.e. whether cross-country differences in firms' cost of equity have decreased after the IAS implementation - the standard deviation of the cost of equity has been computed for the sample firms with regard to the pre- and post-IAS period separately. The relative sample standard deviation - i.e. the ratio between the standard deviation of K_e in the post-IAS period and that in the pre-IAS period - is equal to 0,0864. This means that differences across firms' cost of equity have reduced after IAS implementation by

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13,6%. However, such a reduction in standard deviation is not statistically supported. Panel B in Table 6 reports the variance ratio test for K_e which leads to accept the null hypothesis of equality in the cost of equity variances at the conventional levels used in economic research (0,01 0,05; 0,1 levels for the size of the first kind of error). Panel C in Table 6 also reports a variance ratio test for the *Lev* variable which validates the difference found for it in the pre- and post-IAS period. The alternative hypothesis that the variance of *Lev* is lower in the post-IAS period is in fact supported at a 0,0003 level. This result suggests that differences found in the variance of *Lev* variable are not merely attributable to sample selection.

6.3. Multivariate regressions

The univariate analysis provides evidence that the reduction in the cost of equity for firms which switched to the IAS/IFRS in 2005 is statistically significant. The very low p-values associated to the T- and Wilcoxon tests indicate that the probability that the observed differences in media and median are due to sample selection is extremely low. Conversely, the null hypothesis of no difference in standard deviations has to be accepted given the high p-value of the F test that exceeds conventional levels used in economic research for rejecting such a hypothesis.

The univariate analysis is however based on *ceteris paribus* assumptions that may not hold in practice. The cost of equity estimated by the DCF method is a total cost of equity that takes into account different factors.

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Hence, multivariate regressions have also been performed in order to isolate the effect of the IAS/IFRS implementation on the cost of equity.

With regard to the first hypothesis, the observed reduction in the cost of equity could have been caused by other factors different from the IAS/IFRS implementation. In order to isolate the effect of the IAS/IFRS adoption on the cost of equity, the following cross-sectional and pooled multivariate regression described in par. 5.3.2.1. has been performed:

(1) $Ke_{it} = \alpha_0 + \beta_1 Risk\text{-}free_t + \beta_2 Growth_{it} + \beta_3 Pay\text{-}out_{it} + \beta_4 Lev_{it} + \beta_5 Lev^*IAS_{it} + \beta_6 Size_{it} + \varepsilon$

Variables are as defined in par. 5.3.2.1.

Table 7 provides Pearson's correlation coefficients among K_e, *Risk-free Growth, Pay-out, Lev, Lev*IAS, Size* and the *IAS* dummy, which has finally not been included in the model.

The correlation between K_e and *Lev*IAS* is -0,278 significant at the 0,01 level using a two-tail test. Before controlling for other variables, this result is consistent with the claim that the cost of equity has decreased after the IAS/IFRS adoption. The correlation coefficient between K_e and *Lev* is also negative – as expected – and strongly significant at a 0,01 level, whereas the correlation coefficient between K_e and *Pay-out* is significant at a 0,01 level but opposite in sign to what expected. This finding could, however, be consistent with the hypothesis that the higher the dividend paid by a firm is, the higher the marketability of its

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stock is, the lower its liquidity risk and the *ex ante* return required by investors to hold such a firm's stock are.

The correlation coefficients between K_e and *Growth* and between K_e and *Risk-free* show the expected sign and statistical significance at a 0,05 level using a one-tail test, whereas the correlation between K_e and *Size* shows a positive but not statistically significant coefficient. All the abovementioned correlations show low coefficients.

Conversely, correlation coefficients between *IAS* and *Risk-free* and between *IAS* and *Lev*IAS* are high. The correlation coefficient between *IAS* and *Risk-free* is -0,891, whereas the correlation between *IAS* and *IAS*Lev* is -0,937.

With regard to the *IAS* dummy, the variance inflation factor relative to the *IAS* variable included as a regressor in a model which also considers the *Risk-free* and the *IAS*Lev* variables (not reported) is 17,59. The variance inflation factor relative to the *IAS* dummy included as a regressor in a model which also considers the *Lev*IAS*, but not the *Risk-free* variable (not reported), is also higher than 10. The variance inflation factor relative to the *IAS* dummy included as a regressor in a model which also considers the *Risk-free*, but not the *Lev*IAS* variable (not reported), is still higher than 5. For these reasons, the *IAS* dummy has not been included in the regressions reported in Table 9.

The correlation between *Risk-free* and *Lev*IAS* is also high showing a coefficient of -0,829. However, since the variance inflation factors

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displayed in Table 8 with regard to regression (1) - which does not include the *IAS* dummy - are less than 5, all the variables considered in such a model can be tested together (Marquandt 1980).

Table 9 displays multivariate least square regression results relative to the first hypothesis of this research.

Results in column (A) refer to a regression which only includes the control variables, i.e. variables which previous research has found to affect the cost of equity. Results in column (B) refer to the complete model as defined by regression (1) in paragraph 5.3.2.1., which includes all the control variables and the *Lev*IAS* variable. Finally, results in column (C) refer to a model which includes the *Lev*IAS*, but not the *Risk-free* variable.

Standard errors in the regressions are robust to heteroskedasticity.

All the regressions seem satisfactory in terms of goodness of fit, especially when compared to similar studies[1]. However, it is apparent from the adjusted R^2 reported in Table 9 that substantial variation in the cost of equity estimates is left unexplained by the variables included in

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[1] For example, the adjusted R^2 of the regression of the cost of equity on market beta and disclosure index performed by Botosan (1997) is 0,247; the adjusted R^2 of the regression of the banks' cost of equity on various micro factors performed by Maccario, Sironi and Zazzara (2002) is 0,53.

Value-relevance studies usually show low R^2s. For instance, the adjusted R^2s of the regressions of returns on earning and book value performed by Joos and Lang (1994), in their research on the effect of EU accounting harmonisation, varies from 0,10 to 0,37 accordingly to the year and country taken into consideration; the adjusted R^2s of the regressions performed by Bartov, Goldberg and Kim (2002) in their comparative study among German-GAAP, US GAAP and IAS varies between 0,06 to 0,189 accordingly to the sample, the accounting variables and other factors under analysis.

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the regression. This could reflect noise in the cost of equity estimates, noise in the risk measures and/or missing risk factors.

All regression results have also been checked for the presence of influential points using Cook's D statistic. No influential points were detected.

Table 9 shows that, among the control variables, *Growth* and *Lev* have a negative and strongly significant coefficient in all the regressions, whereas *Size* shows a positive coefficient which is significant at a 0,10 level using a one tail test.

The *Pay-out* always exhibits a significant but – contrary to expectation – negative coefficient. This finding could, however, be consistent with the hypothesis that the higher the dividend paid by a firm is, the higher the marketability of its stock is, the lower its liquidity risk and the *ex ante* return required by investors to hold such a firm's stock are.

The *Risk-free* shows the expected sign in the regressions but is not significant in column (B).

Results in Table 9 show that switching from domestic GAAP to the IAS/IFRS has provided a lower cost of capital. The *Lev*IAS* coefficient is negative (0,1398) and significant at a 0,05 level using a one-tail test in regression (B), whereas the coefficient of the *Risk-free* is not significant. Dropping the *Risk-free* variable, in regression (C) the *Lev*IAS* coefficient is still negative (- 0,1310) and becomes strongly significant at a 0,001 level (one-tail test).

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The *Risk-free* variable was not significant also in regressions performed in order to test the second research hypothesis and reported in Table 10. Same results (not reported) were obtained by using the Euro-zone interest rates, instead of the 10 year German bond yield, as a proxy for the *Risk-free* interest rate.

Residual diagnostic did not reveal any outliers. Moreover, residual-versus-fitted plot so as residual-versus-predictor plot did not suggest model misspecification or omitted variables.

Table 10 displays results relative to regressions (2) and (3) discussed in par. 5.3.2.2. Panel A shows the regression results relative to the pre-IAS period. Panel B displays the regression results relative to the post-IAS period. The coefficient of the *Lev* variable is negative and strongly significant in both the regressions. As expected, the coefficient of the $Lev_{(post-IAS)}$ variable is bigger than the coefficient of the $Lev_{(pre-IAS)}$ variable. Since the *Lev* variable computed under the IAS/IFRS included the effect of firms' commitment to an increased level of disclosure, it was supposed to contribute to reduce information asymmetry and – all else being equal – to lower the cost of equity. Hence, results of regressions reported in Table 10 confirm results obtained in the regression reported in Table 9.

Relatively to the second hypothesis, univariate analysis has shown that differences across firms' cost of equity have reduced after accounting standardization by 13,6%. However, such a reduction in the cost of

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equity's standard deviation has not been statistically validated. Rejecting the alternative hypothesis, the F test displayed in Table 5 leads to the conclusion that there is no difference in cost of equity's standard deviation between the pre- and post-IAS period, i.e. there is a high probability that the observed difference is a mere result of sample selection. Conversely, differences in variance of the *Lev* variable between the pre- and post-IAS period are statistically validated. The alternative hypothesis that the variance of *Lev* is lower in the post-IAS period is supported at a 0,0003 level, suggesting that differences in the variance of *Lev* variable is not a simple effect of sample selection. Given that such changes in variance of the *Lev* variable could be either the result of a change in the financial structure of firms *per se* or – even if partially - the effect of accounting standardization, the regressions illustrated in paragraph 5.3.2.2. have been performed in order to try to isolate the effect of accounting standardization on the *Lev* variable and, consequently, on the cost of equity.

Table 11 displays the reduction in residuals associated to the $Lev_{(pre-IAS)}$ and $Lev_{(post-IAS)}$ variables.

The reduction in residuals associated to the $Lev_{(post-IAS)}$ variable - measured by *SSR (Lev | other variables)* - is equal to 0,003349, slightly lower than that associated to the $Lev_{(pre-IAS)}$ variable, which is equal to 0,003363. F-tests reported in Panel A and B show that such reductions

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are statistically significant, i.e. there is a very low probability that the

Lev effect on the R^2 of the models is merely due to sample selection.

However, Panel C in Table 11 reports a variance ratio test for the *SSR*

(Lev | other variables), which leads to accept the null hypothesis that there

is no difference in the contribution given by the *Lev(post-IAS)* and *Lev(pre-IAS)*

variables to the reduction in variance of the residuals. Therefore, the

second hypothesis of this research is not supported.

Three explanations can be advanced for such a result.

The first one is that the flexibility still allowed by the IAS/IFRS with

regard to some accounting treatments may hamper a perfect

comparability among firms, an elimination of accounting measurement

errors in pricing firms and, hence, a reduction of cross-country

differences in the cost of equity.

The second one is that convergence in the cost of equity may require

more time than that covered by this research.

The third one is that while, on the one hand, accounting standardization

has eliminated measurement errors in assessing firms' risk reducing

differences in their cost of equity, on the other hand, the IAS/IFRS

adoption has exerted an opposite effect improving firms' level of

disclosure, allowing investors to better differentiate among firms' risk,

thus increasing cost of capital variability.

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7. SUMMARY AND CONCLUSIONS

In this research, the effects of the IAS/IFRS adoption in Europe on the capital market have been investigated by focusing on the cost of equity relative to the bank industry.

Since the main purpose of the European Regulation 1606/2002 is that of fostering an efficient and cost-effective functioning of the capital market, the hypotheses developed in this study directly relates accounting changes to the cost of equity.

The first hypothesis tested in this research aimed at verifying whether the adoption of the IAS/IFRS has led to a reduction in the cost of equity. Results of both univariate and multivariate analyses validate this hypothesis, providing empirical support to the claim that switching from the European Directives' system to the IAS/IFRS set has resulted in a lower cost of equity.

These findings have both theoretical and practical implications.

From a theoretical point of view, they provide contribution to the economic thought that a commitment to increased level of disclosure reduces the cost of capital component that arises from information asymmetries. Previous research has shown that the adoption of the IAS/IFRS reduces information asymmetry between the investors and firms. This study goes further, showing empirically that the increase in

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the level of disclosure provided by the IAS/IFRS leads effectively to a lower cost of capital.

From a practical point of view, these findings provide evidence that the Regulator's purpose of fostering a cost-efficient functioning of the capital market for firms could be considered as reached.

Evidence on this point is of direct interest to accounting policy makers for declaring the usefulness of the changes required in financial reporting, comparing costs and benefits of the new regulation and make informed tradeoffs between value-added disclosures and costs associated with their production and dissemination. Furthermore, it points out that firms which implemented the IAS/IFRS have gained a comparative advantage on the equity market relatively to firms still adopting accounting standards based on the IV and VII European Directives. This fact should be carefully taken into consideration either by non-consolidating companies, which are allowed but not obliged to use the new standard set, or by national Regulators which do not permit IAS/IFRS in annual accounts.

The second hypothesis developed in this research aimed at verifying whether accounting standardization at a European level has reduced cross-country differences in the cost of equity. The adoption of the same accounting standard set within the Community was expected to improve comparability, eliminate accounting measurement errors in

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pricing firms and, in such a way, reduce cross-country differences in the
cost of equity.

However, no empirical support was found relatively to the reduction in
the cost of equity's variance observed for the sample firms after the
IAS/IFRS implementation.

Three explanations can be advanced for such a result.

The first one is that the flexibility still allowed by the IAS/IFRS with
regard to some accounting treatments could hamper a perfect
comparability among firms, an elimination of accounting measurement
errors in pricing firms and, hence, a reduction in cross-country
differences in the cost of equity.

The second one is that convergence in the cost of equity may require
more time than that covered by this research.

The third one is that while, on the one hand, accounting standardization
has eliminated measurement errors in assessing firms' risk reducing
differences in their cost of equity, on the other hand, the IAS/IFRS
adoption has exerted an opposite effect on the cost of equity improving
firms' level of disclosure, allowing investors to better differentiate
among firms' risk, hence increasing cost of capital variability.

This research also presents some limits. First of all, this study focuses on
the bank sector which has particular characteristics in comparison to
other industries. Therefore, results cannot be generalized to non-
financial firms without further investigation. However, this issue could

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be addressed in future research by applying the same techniques to a different industry.

Secondly, as already mentioned with specific regard to the second hypothesis, cross-country convergence in the cost of equity may require more time than that considered in this study. Thus, this hypothesis could require a longer period for investigation.

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TABLE 1

Summary of the sample selection process

	Number of firms	Observations
Commercial banks, saving banks and cooperative banks in the Euro-Area, active and listed on the EU markets	114	
Firms with no consolidated financial statements	(16)	
Firms already reporting under IAS before 2005	(12)	
Firms still using domestic GAAP in 2005	(2)	
Firms also listed on the U.S. market	(8)	
Firms for which data are not available or complete	(41)	
Final sample	35	142

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TABLE 2

List of banks included in the sample

NAME	COUNTRY
ALPHA BANK	GREECE
BANCA ANTONVENETA	ITALY
BANCA CARIGE	ITALY
BANCA FIDEURAM	ITALY
BANCA IFIS	ITALY
BANCA INTESA	ITALY
BANCA LOMBARDA E PIEMONTESE	ITALY
BANCA MONTE DEI PASCHI DI SIENA	ITALY
BANCA NAZIONALE DEL LAVORO	ITALY
BANCA POPOLARE DELL'EMILIA ROMAGNA	ITALY
BANCA POPOLARE DI INTRA	ITALY
BANCA POPOLARE ITALIANA	ITALY
BANCA POPOLARE DI MILANO	ITALY
BANCHE POPOLARI UNITE	ITALY
BANCO COMERCIAL PORTUGUESE	PORTUGAL
BANCO DE SABADELL	SPAIN
BANCO DE VALENCIA	SPAIN
BANCO ESPANOL DE CREDITO	SPAIN
BANCO GUIPUZCOANO	SPAIN
BANCO PASTOR	SPAIN
BANCO POPOLARE DI VERONA E NOVARA	ITALY
BANCO POPULAR ESPANOL	SPAIN
BANKINTER SA	SPAIN
CAPITALIA	ITALY
CASSA DI RISPARMIO DI FIRENZE	ITALY
CREDIT AGRICOLE	FRANCE
CREDITO EMILIANO	ITALY
CREDIT INDUSTRIEL ET COMMERCIAL – CIC	FRANCE
EMPORIKI BANK OF GREECE	GREECE
IRISH LIFE & PERMANENT	IRELAND
NATEXIS BANQUES POPULAIRES	FRANCE
OKO BANK	FINLAND
PIRAEUS BANK	GREECE
SOCIETE GENERALE	FRANCE
UNICREDITO ITALIANO	ITALY

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TABLE 3

Regression of prices on expected earnings (White, 1980)

	Coefficient	
Expected earnings	9,23	
Adjusted R^2		0,9647
F (1, 140)		3856,89

p-value is in parenthesis

TABLE 4

Description, measurement and expected sign of independent variables

Variables	Description	Measurement	Expected sign
Risk-free	Return on a default risk-free security	10 years German bond yield	+
Growth	Expected growth rate in earnings	Analysts' estimates	-
Pay-out	Expected pay-out ratio	Analysts' estimates (Expected dividend per share/Expected earnings per share)	+
Leverage	Financial leverage	Equity Book Value/Total Assets	-
Leverage*IAS	Differential effect of the leverage reported under IAS	Equity Book Value/Total Assets multiplied by IAS dummy	-
IAS	Dummy variable identifying reporting under IAS/IFRS	Dummy = 1 when financial report is prepared in accordance to the IAS/IFRS	-
Size	Size effect on the cost of equity	Natural logarithm of market value	-

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TABLE 5

Descriptive statistics

	Ke	Risk-free	Growth	Pay-out	Lev	Lev*IAS	Size	No. of Obs.
MEDIA								
Pre-IAS	,0809	,0395	,2209	,4501	,0697	,000	8,257	71
Post-IAS	,0748	,0328	,1659	,4861	,0604	,0604	8,567	71
T-statistic p-value (two tailed test)	0,0016	0,000	0,028	0,001	0,000	0,000	0,000	
FIRST QUARTILE								
Pre-IAS	,0719	,0373	,1419	,3529	,0556	,000	7,556	71
Post-IAS	,0647	,0318	,1180	,4308	,0526	,0526	7,996	71
MEDIAN								
Pre-IAS	,0842	,0398	,1726	,4375	,0660	,000	8,503	71
Post-IAS	,0759	,0327	,1417	,4747	,0594	,0594	8,761	71
Wilcoxon Z p-value (two-tailed test)	0,003	0,000	0,002	0,000	0,000	0,000	0,000	
THIRD QUARTILE								
Pre-IAS	,0951	,0398	,2536	,5122	,0797	,000	8,715	71
Post-IAS	,0878	,0342	,1998	,5291	,0680	,0680	9,058	71
STANDARD DEVIATION								
Pre-IAS	,0191	,0022	,2049	,1273	,0243	,000	1,073	71
Post-IAS	,0165	,0011	,1022	,1151	,0160	,0160	1,035	71
F-statistic p-value (two-tailed test)	0,224	0,000	0,000	0,698	0,007		0,9384	
MINIMUM								
Pre-IAS	,024	,037	,00	,20	,033	0	5,220	71
Post-IAS	,032	,032	,00	,23	,026	,026	5,689	71
MAXIMUM								
Pre-IAS	,11	,044	,64	1	,178	0,178	10,402	71
Post-IAS	,12	,034	,65	,86	,099	,099	10,728	71

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TABLE 6

Univariate analysis results

Panel A: Paired test for media and median of K_e

Variable: K_e

Paired T – test for media	
Null hypothesis:	media $K_{e\ pre\text{-}IAS}$ – media $K_{e\ post\text{-}IAS}$ ≤ 0
Alternative hypothesis :	media $K_{e\ pre\text{-}IAS}$ – media $K_{e\ post\text{-}IAS}$ > 0
$t_{(70)} = -3,291$	p-value (one – tailed) = 0,0008

Wilcoxon matched – pairs test	
Null hypothesis:	median $K_{e\ pre\text{-}IAS}$ – median $K_{e\ post\text{-}IAS}$ ≤ 0
Alternative hypothesis :	median $K_{e\ pre\text{-}IAS}$ – median $K_{e\ post\text{-}IAS}$ > 0
$Z_{(70)} = -2,962$	p-value (one – tailed) = 0,0015

Panel B: Variance ratio test for K_e

Variable: K_e

Variance ratio test	
Null hypothesis:	variance $K_{e\ post\text{-}IAS}$ – variance $K_{e\ pre\text{-}IAS}$ ≥ 0
Alternative hypothesis :	variance $K_{e\ post\text{-}IAS}$ – variance $K_{e\ pre\text{-}IAS}$ < 0
$F_{(70,70)} = 0,747$	p-value (one – tailed) = 0,112

Panel C: Variance ratio test for *Lev*

Variable: Lev

Variance ratio test	
Null hypothesis:	variance Lev $_{post\text{-}IAS}$ – variance Lev $_{pre\text{-}IAS}$ ≥ 0
Alternative hypothesis :	variance Lev $_{post\text{-}IAS}$ – variance Lev $_{pre\text{-}IAS}$ < 0
$F_{(70,70)} = 0,437$	p-value (one – tailed) = 0,0003

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TABLE 7

Pearson's correlation coefficients

		Ke	Pay-out	Growth	Lev	Risk-free	Lev*IAS	Size	IAS dummy
Ke	Pearson's correlation	1							
	(2 tailed)								
	N	142							
Pay-out	Pearson's correlation	-,366**	1						
	(2 tailed)	,000							
	N	142	·142						
Growth	Pearson's correlation	-,157	-,154	1					
	(2 tailed)	,062	,068						
	N	142	142	142					
Lev	Pearson's correlation	-,453**	,356**	,147	1				
	(2 tailed)	,000	,000	,081					
	N	142	142	142	142				
Risk-free	Pearson's correlation	,152	-,119	,159	,168*	1			
	(2 tailed)	,071	,159	,058	,046				
	N	142	142	142	142	142			
Lev*IAS Dummy	Pearson's correlation	-,278**	,242**	-,143	-,021	-,829**	1		
	(2 tailed)	,001	,004	,091	,806	,000			
	N .	142	142	142	142	142	142		
Size	Person's correlation	,044	-,243**	-,123	-,202**	-,112	,072	1	
	(2 tailed)	,603	,004	,146	,016	,183	,392		
	N	142	142	142	142	142	142	142	
IAS Dummy	Person's correlation	-,168*	-,148*	-,178	-,223**	-,891**	,937**	,127	1
	(2 tailed)	,046	,079	,034	,008	,000	,000	,132	
	N	142	142	142	142	142	142	142	142

** Correlation is significant at 0,01 level (two tailed)
* Correlation is significant at 0,05 level (two tailed)

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TABLE 8

COLLINEARITY STATISTICS

Model: $K_e = \alpha_o + \beta_1 Risk\text{-}free_t + \beta_2 Growth_{it} + \beta_3 Pay\text{-}out_{it} + \beta_4 Lev_{it} + \beta_5 Size_{it} + \beta_6 Lev^*IAS_{it} + \varepsilon$

Variable	VIF	Tolerance
Risk-free	3,53	0,2835
Growth	1,12	0,8905
Pay-out	1,37	0,7296
Lev	1,25	0,7976
Lev*IAS	3,51	0,2851
Size	1,13	0,8828
Mean VIF	1,99	

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TABLE 9

Multivariate least squares regression results (White, 1980)

Models:

Column (A): $K_e = \alpha_0 + \beta_1 Risk\text{-}free_t + \beta_2 Growth_{it} + \beta_3 Pay\text{-}out_{it} + \beta_4 Lev_{it} + \beta_5 Size_{it} + \varepsilon$

Column (B): $K_e = \alpha_0 + \beta_1 Risk\text{-}free_t + \beta_2 Growth_{it} + \beta_3 Pay\text{-}out_{it} + \beta_4 Lev_{it} + \beta_5 Size_{it} + \beta_6 Lev^*IAS_{it} + \varepsilon$

Column (C): $K_e = \alpha_0 + \beta_1 Growth_{it} + \beta_2 Pay\text{-}out_{it} + \beta_3 Lev_{it} + \beta_4 Size_{it} + \beta_5 Lev^*IAS_{it} + \varepsilon$

Regressor	(A)	(B)	(C)
Intercept	0,0893 (0,000)	0,1233 (0,000)	0,1267 (0,000)
Risk-free	1,0240 (0,009)	0,09133 (0,885)	------- -------
Growth	-0,02047 (0,000)	-0,0193 (0,002)	-0,019 (0,002)
Pay-out	-0,0376 (0,030)	-0,0330 (0,007)	-0,033 (0,072)
Lev	-0,3466 (0,000)	-0,3315 (0,000)	-0,3294 (0,000)
Size	-0,0019 (0,158)	-0,0018 (0,183)	-0,0018 (0,181)
Lev*IAS	------- -------	-0,1310 (0,077)	-0,1398 (0,002)
Adjusted R^2	0,3001	0,3113	0,3162
F-statistic	10,98	12,44	14,74
Prob (F-statistic)	(0,0000)	(0,0000)	(0,0000)

p-value are in parentheses (two-tail test)

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Table 10

Multivariate least square regression results (White, 1980)

Models:

$$Ke_{it\ (pre-IAS)} = \alpha_{0\ (pre-IAS)} + \beta_1 Riskfree_{i\ (pre-IAS)} + \beta_2 Growth_{it\ (pre-IAS)} + \beta_3 Pay\text{-}out_{it\ (pre-IAS)} + \beta_4 Lev_{it\ (pre-IAS)} + \beta_5 Size_{it\ (pre-IAS)} + \varepsilon$$

$$Ke_{it} = a_{0\ (post-IAS)} + b_1 Riskfree_{i\ (post-IAS)} + b_2 Growth_{it\ (post-IAS)+} b_3 Pay\text{-}out_{it\ (post-IAS)+} b_4 Lev_{it\ (post-IAS)+} b_5 Size_{it\ (post-IAS)} + \varepsilon$$

Panel A: Pre-IAS period

Regressor	Coefficient
Intercept	0,1323
	(0,000)
Risk-free	0,2460
	(0,741)
Growth	-0,0204
	(0,000)
Pay-out	-0,0536
	(0,035)
Size	-0,0049
	(0,004)
Lev	-0,3140
	(0,007)
Adj. R²	0,3438
F-statistic	8,33
P (F- statistic)	0,0000

p-values are in parentheses (two-tail test)

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Panel B: Post-IAS period

Regressor	Coefficient
Intercept	0,1223
	(0,012)
Risk-free	-0,5097
	(0,718)
Growth	-0,0379
	(0,009)
Pay-out	-0,0013
	(0,950)
Size	0,0024
	(0,157)
Lev	-0,4925
	(0,000)
Adj. R^2	0,3077
F-statistic	7,22
P (F- statistic)	0,0000

p-values are in parentheses (two-tail test)

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TABLE 11

Results relative to Hypothesis 2

Panel A: Pre-IAS period

	Df	Sum of squares	Variance (MSSR)	
SSR (all the variables)	65	0,012320	0,0001895	F (1,65) =
SSR (Lev$_{(pre-IAS)}$ | other variables)	1	0,003363	0,003363	$\frac{0,003363}{0,0001895}$ = 17,74
SSR (variables excluded Lev$_{(pre-IAS)}$)	66	0,015683	0,0002376	p-value: 0,0000

Panel B: Post-IAS period

	df	Sum of squared	Variance (MSSR)	
SSR (all the variables)	65	0,015633	0,00024051	F (1,65) =
SSR (Lev$_{(post-IAS)}$ | other variables)	1	0,003349	0,003349	$\frac{0,003349}{0,00024051}$ = 13,92
SSR (variables excluded Lev$_{(post-IAS)}$)	66	0,018982	0,00028761	p-value: 0,0004

Panel C: Variance ratio test for *MSSR (Lev \| other variables)*

Variance ratio test for *MSSR (Lev | other variables)*
H$_0$: MSSR (Lev $_{(pre-IAS)}$ | other variables) $\leq$ MSSR (Lev$_{(pre-IAS)}$ | other variables)
H$_1$: MSSR (Lev $_{(pre-IAS)}$ | other variables) > MSSR (Lev $_{(post-IAS)}$ | other variables)
F$_{(1,1)}$ = 1,04   p-value (one-tailed) = 0,4993

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Appendix 1

Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards

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Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 95(1) thereof,

Having regard to the proposal from the Commission(1),

Having regard to the opinion of the Economic and Social Committee(2),

Acting in accordance with the procedure laid down in Article 251 of the Treaty(3),

Whereas:

(1) The Lisbon European Council of 23 and 24 March 2000 emphasised the need to accelerate completion of the internal market for financial services, set the deadline of 2005 to implement the Commission's Financial Services Action Plan and urged that steps be taken to enhance the comparability of financial statements prepared by publicly traded companies.

(2) In order to contribute to a better functioning of the internal market, publicly traded companies must be required to apply a single set of high quality international accounting standards for the preparation of their consolidated financial statements. Furthermore, it is important that the financial reporting standards applied by Community companies participating in financial markets are accepted internationally and are truly global standards. This implies an increasing convergence of accounting standards currently used internationally with the ultimate objective of achieving a single set of global accounting standards.

(3) Council Directive 78/660/EEC of 25 July 1978 on the annual accounts of certain types of companies(4), Council Directive 83/349/EEC of 13

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June 1983 on consolidated accounts(5), Council Directive 86/635/EEC of 8 December 1986 on the annual accounts and consolidated accounts of banks and other financial institutions(6) and Council Directive 91/674/EEC of 19 December 1991 on the annual accounts and consolidated accounts of insurance companies(7) are also addressed to publicly traded Community companies. The reporting requirements set out in these Directives cannot ensure the high level of transparency and comparability of financial reporting from all publicly traded Community companies which is a necessary condition for building an integrated capital market which operates effectively, smoothly and efficiently. It is therefore necessary to supplement the legal framework applicable to publicly traded companies.

(4) This Regulation aims at contributing to the efficient and cost-effective functioning of the capital market. The protection of investors and the maintenance of confidence in the financial markets is also an important aspect of the completion of the internal market in this area. This Regulation reinforces the freedom of movement of capital in the internal market and helps to enable Community companies to compete on an equal footing for financial resources available in the Community capital markets, as well as in world capital markets.

(5) It is important for the competitiveness of Community capital markets to achieve convergence of the standards used in Europe for preparing financial statements, with international accounting standards that can be used globally, for cross-border transactions or listing anywhere in the world.

(6) On 13 June 2000, the Commission published its Communication on "EU Financial Reporting Strategy: the way forward" in which it was proposed that all publicly traded Community companies prepare their consolidated financial statements in accordance with one single set of accounting standards, namely International Accounting Standards (IAS), at the latest by 2005.

(7) International Accounting Standards (IASs) are developed by the International Accounting Standards Committee (IASC), whose purpose is to develop a single set of global accounting standards. Further to the

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restructuring of the IASC, the new Board on 1 April 2001, as one of its first decisions, renamed the IASC as the International Accounting Standards Board (IASB) and, as far as future international accounting standards are concerned, renamed IAS as International Financial Reporting Standards (IFRS). These standards should, wherever possible and provided that they ensure a high degree of transparency and comparability for financial reporting in the Community, be made obligatory for use by all publicly traded Community companies.

(8) The measures necessary for the implementation of this Regulation should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission(8) and with due regard to the declaration made by the Commission in the European Parliament on 5 February 2002 concerning the implementation of financial services legislation.

(9) To adopt an international accounting standard for application in the Community, it is necessary firstly that it meets the basic requirement of the aforementioned Council Directives, that is to say that its application results in a true and fair view of the financial position and performance of an enterprise - this principle being considered in the light of the said Council Directives without implying a strict conformity with each and every provision of those Directives; secondly that, in accordance with the conclusions of the Council of 17 July 2000, it is conducive to the European public good and lastly that it meets basic criteria as to the quality of information required for financial statements to be useful to users.

(10) An accounting technical committee should provide support and expertise to the Commission in the assessment of international accounting standards.

(11) The endorsement mechanism should act expeditiously on proposed international accounting standards and also be a means to deliberate, reflect and exchange information on international accounting standards among the main parties concerned, in particular national accounting standard setters, supervisors in the fields of securities, banking and

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insurance, central banks including the ECB, the accounting profession and users and preparers of accounts. The mechanism should be a means to foster common understanding of adopted international accounting standards in the Community.

(12) In accordance with the principle of proportionality, the measures provided for in this Regulation, in requiring that a single set of international accounting standards be applied to publicly traded companies, are necessary to achieve the objective of contributing to the efficient and cost-effective functioning of Community capital markets and thereby to the completion of the internal market.

(13) In accordance with the same principle, it is necessary, as regards annual accounts, to leave to Member States the option to permit or require publicly traded companies to prepare them in conformity with international accounting standards adopted in accordance with the procedure laid down in this Regulation. Member States may decide as well to extend this permission or this requirement to other companies as regards the preparation of their consolidated accounts and/or their annual accounts.

(14) In order to facilitate an exchange of views and to allow Member States to coordinate their positions, the Commission should periodically inform the accounting regulatory committee about active projects, discussion papers, point outlines and exposure drafts issued by the IASB and about the consequential technical work of the accounting technical committee. It is also important that the accounting regulatory committee is informed at an early stage if the Commission intends not to propose to adopt an international accounting standard.

(15) In its deliberations on and in elaborating positions to be taken on documents and papers issued by the IASB in the process of developing international accounting standards (IFRS and SIC-IFRIC), the Commission should take into account the importance of avoiding competitive disadvantages for European companies operating in the global marketplace, and, to the maximum possible extent, the views expressed by the delegations in the Accounting Regulatory Committee. The Commission will be represented in constituent bodies of the IASB.

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(16) A proper and rigorous enforcement regime is key to underpinning investors' confidence in financial markets. Member States, by virtue of Article 10 of the Treaty, are required to take appropriate measures to ensure compliance with international accounting standards. The Commission intends to liaise with Member States, notably through the Committee of European Securities Regulators (CESR), to develop a common approach to enforcement.

(17) Further, it is necessary to allow Member States to defer the application of certain provisions until 2007 for those companies publicly traded both in the Community and on a regulated third-country market which are already applying another set of internationally accepted standards as the primary basis for their consolidated accounts as well as for companies which have only publicly traded debt securities. It is nonetheless crucial that by 2007 at the latest a single set of global international accounting standards, the IAS, apply to all Community companies publicly traded on a Community regulated market.

(18) In order to allow Member States and companies to carry out the necessary adaptations to make the application of international accounting standards possible, it is necessary to apply certain provisions only in 2005. Appropriate provisions should be put in place for the first-time application of IAS by companies as a result of the entry into force of the present regulation. Such provisions should be drawn up at international level in order to ensure international recognition of the solutions adopted,

HAVE ADOPTED THIS REGULATION:

Article 1

Aim

This Regulation has as its objective the adoption and use of international accounting standards in the Community with a view to harmonising the financial information presented by the companies referred to in Article 4 in order to ensure a high degree of transparency and comparability of financial statements and hence an efficient functioning of the Community capital market and of the Internal Market.

Article 2

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Definitions

For the purpose of this Regulation, "international accounting standards" shall mean International Accounting Standards (IAS), International Financial Reporting Standards (IFRS) and related Interpretations (SIC-IFRIC interpretations), subsequent amendments to those standards and related interpretations, future standards and related interpretations issued or adopted by the International Accounting Standards Board (IASB).

Article 3

Adoption and use of international accounting standards

1. In accordance with the procedure laid down in Article 6(2), the Commission shall decide on the applicability within the Community of international accounting standards.

2. The international accounting standards can only be adopted if:

- they are not contrary to the principle set out in Article 2(3) of Directive 78/660/EEC and in Article 16(3) of Directive 83/349/EEC and are conducive to the European public good and,

- they meet the criteria of understandability, relevance, reliability and comparability required of the financial information needed for making economic decisions and assessing the stewardship of management.

3. At the latest by 31 December 2002, the Commission shall, in accordance with the procedure laid down in Article 6(2), decide on the applicability within the Community of the international accounting standards in existence upon entry into force of this Regulation.

4. Adopted international accounting standards shall be published in full in each of the official languages of the Community, as a Commission Regulation, in the Official Journal of the European Communities.

Article 4

Consolidated accounts of publicly traded companies

For each financial year starting on or after 1 January 2005, companies governed by the law of a Member State shall prepare their consolidated accounts in conformity with the international accounting standards adopted in accordance with the procedure laid down in Article 6(2) if, at their balance sheet date, their securities are admitted to trading on a

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regulated market of any Member State within the meaning of Article 1(13) of Council Directive 93/22/EEC of 10 May 1993 on investment services in the securities field(9).

Article 5

Options in respect of annual accounts and of non publicly-traded companies

Member States may permit or require:

(a) the companies referred to in Article 4 to prepare their annual accounts,

(b) companies other than those referred to in Article 4 to prepare their consolidated accounts and/or their annual accounts,

in conformity with the international accounting standards adopted in accordance with the procedure laid down in Article 6(2).

Article 6

Committee procedure

1. The Commission shall be assisted by an accounting regulatory committee hereinafter referred to as "the Committee".

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its rules of procedure.

Article 7

Reporting and coordination

1. The Commission shall liaise on a regular basis with the Committee about the status of active IASB projects and any related documents issued by the IASB in order to coordinate positions and to facilitate discussions concerning the adoption of standards that might result from these projects and documents.

2. The Commission shall duly report to the Committee in a timely manner if it intends not to propose the adoption of a standard.

Article 8

Notification

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Where Member States take measures by virtue of Article 5, they shall immediately communicate these to the Commission and to other Member States.

Article 9

Transitional provisions

By way of derogation from Article 4, Member States may provide that the requirements of Article 4 shall only apply for each financial year starting on or after January 2007 to those companies:

(a) whose debt securities only are admitted on a regulated market of any Member State within the meaning of Article 1(13) of Directive 93/22/EEC; or

(b) whose securities are admitted to public trading in a non-member State and which, for that purpose, have been using internationally accepted standards since a financial year that started prior to the publication of this Regulation in the Official Journal of the European Communities.

Article 10

Information and review

The Commission shall review the operation of this Regulation and report thereon to the European Parliament and to the Council by 1 July 2007 at the latest.

Article 11

Entry into force

This Regulation shall enter into force on the third day following that of its publication in the Official Journal of the European Communities.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 19 July 2002.

For the European Parliament

The President

P. Cox

For the Council

The President

T. Pedersen

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(1) OJ C 154 E, 29.5.2001, p. 285.

(2) OJ C 260, 17.9.2001, p. 86.

(3) Opinion of the European Parliament of 12 March 2002 (not yet published in the Official Journal) and Decision of the Council of 7 June 2002.

(4) OJ L 222, 14.8.1978, p. 11. Directive as last amended by European Parliament and Council Directive 2001/65/EC (OJ L 283, 27.10.2001, p. 28).

(5) OJ L 193, 18.7.1983, p. 1. Directive as last amended by European Parliament and Council Directive 2001/65/EC.

(6) OJ L 372, 31.12.1986, p. 1. Directive as last amended by European Parliament and Council Directive 2001/65/EC.

(7) OJ L 374, 31.12.1991, p. 7.

(8) OJ L 184, 17.7.1999, p. 23.

(9) OJ L 141, 11.6.1993, p. 27. Directive as last amended by European Parliament and Council Directive 2000/64/EC (OJ L 290, 17.11.2000, p. 27).

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The Effects of the IAS/IFRS Adoption in the European Union on the Cost of Equity:
First Evidence from the Bank Industry

Appendix 2

Planned Implementation of the IAS Regulation (1606/2002) in the EU and EEA   (Published for information purposes only)   Date 17/01/05   1/3

European Commission	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Italy	Ireland
Status of the implementation of IAS	Final law	Proposal	Final law	Final law	Final law	Final law	Final law	Final law	Consultation[1]
Article 5(a) of the IAS Regulation **LISTED COMPANIES** 1. Will your MS use the option to permit IAS in the annual accounts for listed companies?	No	See footnote[2]	Fin. entities: Yes Other entities: Until 2007: Yes After 2007: No	Yes	No	Yes[3]	No	No	Probably yes
2. Will your MS use the option to require IAS in the annual accounts for listed companies?	No	See footnote[2]	Fin. entities: No Other entities: Until 2007: No After 2007: Yes	No	No	No	Yes	Yes[5], except for insurance	No
Article 5(b) of the IAS Regulation **OTHER COMPANIES** 1. Will your MS use the option to permit IAS in the consolidated accounts for other companies? If yes, what type of companies?	Yes, all companies	Yes, probably all types	Yes, all types	Yes[4], all types	Yes, consolidated companies	Yes, all types	Yes[3]	Yes, except for small companies	Yes, probably all types
2. Will your MS use the option to require IAS in the consolidated accounts for other companies? If yes, what type of companies?	No	Possibly the credit institutions. Probably in the future for other companies	No	No	No	Yes, companies which have filed for a listing	No	Yes, some companies[6]	No
3. Will your MS use the option to permit IAS in the annual accounts for other companies? If yes, what type of companies?	No	See footnote[2]	Yes, all types	Yes[4], All types	No	Yes[3] All types	Yes[3]	Yes, except for insurance, listed companies and required companies	Yes, probably all types
4. Will your MS use the option to require IAS in the annual accounts for other companies? If yes, what type of companies?	No	See footnote[2]	No	No	No	No	No	Yes, some companies[6]	No
Article 9 of the IAS Regulation (a) Will your MS use the option to defer the application of IAS until 2007 for companies whose debt securities only are admitted on a regulated market of any MS?	Yes	Probably yes	Fin. entities: No Other entities: Yes	Yes	Yes	Yes	No	No	No
(b) Will your MS use the option to defer the application of IAS until 2007 for companies whose securities are admitted to public trading in a non-member State and which, for that purpose, have been using internationally accepted standards since a financial year that started prior to the publication of the IAS Regulation in the OJ?	Yes	Probably yes	No	No	N/A	Yes	No	No	No
Miscellaneous Is earlier adoption (before 2005) of IAS allowed? If yes, for what type of companies? from when?	Yes, cons. accounts since 1998	Yes, cons. accounts for all companies	Yes for 2004. The annual and cons. accounts for all cos. except for financial cos.	1. Listed cos: cons. accounts 15.9.2005 2. Other cos (pub. listed): cons. and cons. account 2004	No	Yes, cons. acc. option for listed companies for cons. 1998; and for unlisted cos from 2003	31.12.2004 Yes[3]	No	No

[1] Ireland: The information given is only indicative and might still change after completion of the standard process.
[2] Belgium: To be announced with an additional aspect.
[3] Germany: For purposes of submission only. Financial statements does state to live work and actual accounting law will continue to be required for purposes of profit distribution, taxation and financial services; separation.
[4] Italy: Listed insurance companies may comply with IAS only if they do not draw up consolidated accounts.
[5] Finland and Greece: Companies, which are audited by certified auditors.
[6] Italy: Supervised financial companies: companies with financial instruments solely distributed among the public; insurance companies.
Finland: Application of standard law will be mandatory for insurance companies in annual accounts for a transition period.
Italy: Supervised financial companies: companies with financial instruments widely distributed among the public.

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The Effects of the IAS/IFRS Adoption in the European Union on the Cost of Equity:
First Evidence from the Bank Industry

Planned Implementation of the IAS Regulation (1606/2002) in the EU and EEA (Published for information purposes only)   Date 17/01/05   2/3

European Commission	Luxemburg	Netherlands	Portugal	Spain	Sweden	UK	Norway	Ireland	Lichtenstein
Status of the implementation of IAS	Law proposal	Law proposal	Pre-final Law	Final law	Final law	Final law	Final law	Work group	Final law
Article 5(a) of the IAS Regulation **LISTED COMPANIES** 1. Will your MS use the option to permit IAS in the annual accounts for listed companies?	Yes	Yes	Yes, except for banks and financial institutions	No	No	Yes	Yes	Yes	Yes
2. Will your MS use the option to require IAS in the annual accounts for listed companies?	No	No	No	No	No	No	No	Probably no	No
Article 5(b) of the IAS Regulation **OTHER COMPANIES** 1. Will your MS use the option to permit IAS in the consolidated accounts for other companies? If yes, what type of companies?	Yes	Yes, all types	Yes	Yes, all types	Yes, all types	Yes, all types of companies except for the charity sector	Yes, all types	Yes, all types	Yes, all types
2. Will your MS use the option to require IAS in the consolidated accounts for other companies? If yes, what type of companies?	No	No	Yes for banks and financial institutions in 2006	No	No	No	No	No	No
3. Will your MS use the option to permit IAS in the annual accounts for other companies? If yes, what type of companies?	Yes	Yes, all types	Yes, companies within the scope of consolidation of an entity who applies IAS/IFRS	No	No	Yes, all types of companies except for the charity sector	Yes, all types	Yes, all types	Yes, all types
4. Will your MS use the option to require IAS in the annual accounts for other companies? If yes, what type of companies?	No	No	No	No	No	No	No	No	No
Article 9 of the IAS Regulation (a) Will your MS use the option to defer the application of IAS until 2007 for companies whose debt securities only are admitted on a regulated market of any MS?	Yes	No	No	Yes, except for banking sector companies	Yes	No	Yes	Probably yes	No
(b) Will your MS use the option to defer the application of IAS until 2007 for companies whose securities are admitted to public trading in a non-member State and which, for that purpose, have been using internationally accepted standards since a financial year that started prior to the publication of the IAS Regulation in the OJ?	Yes	No	No	No	No	No	Yes	Probably yes	No
Miscellaneous Is earlier adoption (before 2005) of IAS allowed? If yes, for what type of companies/from when?	Derogations on an individual basis	No	Derogations on an individual basis	No	No	No	No	Probably yes	31.12.2002 Yes, all types

[1] Portugal: Law approved by the Government but pending homologation by the President.
[2] Sweden: A requirement for financial institutions and insurance companies to apply IAS would arise into force from 2006.

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Planned Implementation of the IAS Regulation (1606/2002) in the EU and EEA   (Published for information purposes only)   Date 17/01/05   3/3

European Commission	Czech Rep.	Cyprus	Estonia	Hungary	Latvia	Lithuania	Malta	Poland	Slovakia	Slovenia
Status of the implementation of IAS	Final law		Final law	Final law	Final law	Final law	Final law[1]	Final Law	Final law	Proposal
Article 5(b) of the IAS Regulation **LISTED COMPANIES** 1. Will your MS use the option to permit IAS in the annual accounts for listed companies?	No		No	No[1]	No	No	No	Yes	No	No
2. Will your MS use the option to require IAS in the annual accounts for listed companies?	Yes		Yes	No	No[1]	Yes	Yes	No	Yes	Yes
Article 5(a) of the IAS Regulation **OTHER COMPANIES** 1. Will your MS use the option to permit IAS in the consolidated accounts for other companies? If yes, what type of companies?	Yes All types of companies		Yes All types	Yes, all types of companies within the scope of Act of Accounting	No[1]	No	No	Yes: 1) companies having filed for admission to public trading; 2) any parent comp. using subs. of another parent and preparing accounts, acc. in line with IAS	Yes	Yes, all types of companies which decide to use IAS for a less 5 years
2. Will your MS use the option to require IAS in the consolidated accounts for other companies? If yes, what type of companies?	No		Yes, credit and other financial institutions	No	Yes, banks, insurance cos, other supervised fin. inst.	Yes, for banks and their controlled fin. institutions	Yes	Yes, banks	Yes, all types	Yes, for banks and insurance companies
3. Will your MS use the option to permit IAS in the annual accounts for other companies? If yes, what type of companies?	No		Yes, all types	No[1]	No	No	No	Yes: 1) companies having filed for admission to public trading; 2) companies whose parent and preparing accounts, acc. in line with IAS	No	Yes, all types of companies which decide to use IAS for at least 5 years
4. Will your MS use the option to require IAS in the annual accounts for other companies? If yes, what type of companies?	No		Yes, credit and other financial institutions	No	Yes, banks, insurance cos, other supervised fin. inst.	Yes, for banks and their controlled fin. institutions	Yes	No	No	Yes, for banks and insurance companies
Article 9 of the IAS Regulation (a) Will your MS use the option to defer the application of IAS until 2007 for companies whose debt securities only are admitted on a regulated market of any MS?	No		No	Yes	No	No	No	Yes	No	No
(b) Will your MS use the option to defer the application of IAS until 2007 for companies whose securities are admitted to public trading in a non-member State and which, for that purpose, have been using internationally accepted standards since a financial year that started prior to the publication of the IAS Regulation in the OJ?	No		No	No	No	No	No	No	No	No
Miscellaneous Is earlier adoption (before 2005) of IAS allowed? If yes, for what type of companies? from when?	Yes[1]		Yes All types d.1.01.2003	No[1]	Yes, banks, ins. cos, other supervised fin. inst. had to use IAS before 2005	Yes, for banks and their controlled fin. inst. since 1997	Yes, all types since 1995	No	Yes, listed cos since 01.01.2004	No

[1] Malta: Compliance with IAS has been mandatory for all companies since 1996

[1] Hungary: The application of IAS for informal purposes is permitted, and the listing rules in some cases require the application of IAS. Nevertheless the companies are obliged to prepare annual accounts according to the Accounting Act. Changing of position is not anticipated until the tax and legal issues are not solved.

[1] Latvia: Companies listed in official list have to prepare separate IAS annual accounts for listing purposes only

[1] Latvia: Proposal to introduce this option for all types of companies is submitted to the Government

[1] Lithuania: Application of IAS for preparing consolidated accounts for all companies (listed and non-listed) from the year 2005.

[1] Hungary: It is permitted to apply IAS for informal purposes; however the companies are obliged to prepare annual accounts according to the Accounting Act. It is not anticipated to change the position before the tax and legal issues are solved.

[1] Czech Rep : Yes, effective from the first accounting period following after Accession Treaty come into force, for companies mentioned above

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