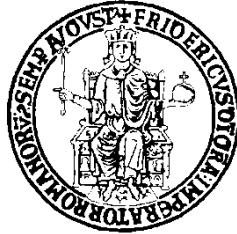


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**THE VALUE RELEVANCE OF IFRS 7.
EVIDENCE FROM EUROPEAN BANKING SECTOR**

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Introduction

During the last years, the economic crisis has affected European banks activity causing, in some cases, threats for banks survival. Consequently, it has strengthened the belief that the identification and management of risks are the focus of achieving adequate levels of effectiveness and efficiency.

Before 2007, European banks and other financial activities were characterized, on the one hand, by high income, many assets on and off balance and strong recourse to the use of leverage; on the other hand, the inappropriate use of derivatives, securitization containing collateralized debt obligation and (CDO) and credit default swap (CDS), and the conceding of subprime loans have created the conditions of the financial crisis.

The lack of confidence generated in the financial market has made it increasingly pressing need for better disclosure to all stakeholders, as an important element to ease the funding of other venture capital and/or debt aimed at improving the competitiveness and growth. The quality of the relationships between the bank and the market is linked to the ability to communicate their economic and financial performance, highlighting the risks that characterize its core business.

The information opacity of credit intermediaries is often caused by both managerial opportunism phenomena and by excessive cost of disclosure. The predominant literature, indeed, claims that there are many advantages of a good disclosure that results in reduction of the cost of capital (Diamond and Verrecchia, 1991), easy access to funds (Linsey and Schriber, 2005), creation of more stability in the whole banking industry and consequent reduction of systemic risk (Nier and Baumann, 2006), and effective tool for avoiding banking crises (Financial Stability Board, 2012). However, other Authors argue that there are some disadvantages related to the excessive disclosure due to the complexity of financial instruments because markets are unable to incorporate additional information in a beneficial way (Hodder et al., 2001; Hassan et al., 2009; Hassan and Mohd-Saleh, 2010; Siregar et al. 2013). In addition, banks often oppose to requirements asking for higher disclosures because they determine significant costs (Mozes, 2002, Gebhardt, 2004).

On the regulatory side, instead, although it has integrity at the explicit request for disclosure under the risk profile, it was not sufficient to guarantee the satisfaction of different operators' needs, with the effect of hiding important difficult cases resulted in financial troubles. Indeed, both the International Accounting Standards/International Financial Reporting standards (IAS/IFRS) and the Basel Accord have not been effective in the control of risk and related systemic effects. Even today are still ongoing revisions of the rules aimed at ensuring greater soundness of banks and the stability of the whole financial system.

As events have demonstrated, many European banks and financial intermediaries have been unprepared for the events and the risks associated with a major impact on capital, financial and economic performance.

In order to respond to the aforementioned situation of crisis, the International Accounting Standards Board (IASB) has issued the IFRS 7: Financial Instruments Disclosure, an ad hoc accounting standard which identifies the minimal disclosure requirements that entities must meet to communicate to investors the risks arising from financial instruments used. This standard, effective from 2007, partially replaces the IAS 32 adding new disclosure. The second part of the accounting principle (par. 31-42) discusses financial instruments risk disclosure (FIRD) distinguishing between quantitative (synthetic data on risk exposure at the reporting date by type of risk, risk concentration, attention to credit risk, a sensitivity analysis to market risk) and qualitative information (exhibition the risks and how they are generated, objectives and procedures for the management of financial risk and valuation methods, changes compared to the past) for each type of financial risk. The disclosures required by IFRS 7 should allow an accurate assessment of the nature and extent of the risks and the impact that the financial instruments have on the performance of the bank. However, up to date, to the best of my knowledge there are no studies testing the relevance of disclosure required under IFRS 7 from the investors' perspective.

As is known, the IASB has identified in the relevance a fundamental qualitative characteristics of useful financial information.

Generally speaking, in the last years, many academics have focused on the value relevance of financial reporting. Research on value relevance seek to investigate whether data recognized and/or disclosed in financial reporting contain information useful for economic operators in order to support them in their investment decisions. In other words, the aim of value relevance studies is looking for the association between disclosures of financial reporting and stock market prices or changes in stock market prices, proxies of an entity's value. Many scholars and professional associations argue that value relevance is an indicator of reliability that lead to an increased transparency. Indeed, value relevance can be considered "a measure of transparency because, if stock market prices and returns are reflections of economic reality, then the more financial reporting reflects economic reality, the greater the association we would expect to see between financial reporting and stock market prices or changes in them" (ICAEW, 2015, p. 23).

The value relevance of FIRD is an important key factor for a transparent relationship between banks and stakeholders, in particular investors, because, first of all, the last financial crisis has revealed the weaknesses of the European banking system and related disclosure; secondly, banks' regulatory framework is complex, so it is possible to detect cases of information opacity, because it is formulated by a range of different bodies (i.e. local banking authority, Basel Committee and European Banking Authority - EBA); lastly, a gap in the literature of the relevance of FIRD in the banking sector exists. In particular there are not studies on the value relevance of IFRS 7. Indeed, many research focus on compliance of IFRS 7 (i.e. Amoako and Asante, 2013; Hossain, 2014) and the relevance of particular type of risk (i.e. Bonetti et al., 2012).

On this basis, the aim of this thesis is to test the value relevance of the financial instruments risk disclosure (FIRD) from the users' perspective, as recommended by the IFRS 7 in the European banking sector. In particular, UK, Germany, Italy, Spain and France are investigated because they are countries with highest capitalization in Europe from 2007, year of IFRS 7 entry in force, to 2014, last year available.

The thesis uses price model and a panel data analysis is developed.

This study provides a threefold contribution. First, it is useful for investors because they may better assess their risk appetite, so they can choose appropriate risk levels. It is known that the main tool by which a bank fulfills its disclosure obligations is the financial reporting that is designed to inform about the current performance and risks, it highlights the past trends and decisions for the future. Many studies have emphasized that limited transparency regarding financial instruments risk exposure exist showing high opacity of annual reports, leading to the mispricing of risk and misallocation of capital, and affecting investors ability to assess their investment decision.

Second, this study adds knowledge to the scientific debate about value relevance of information on financial instruments risks. On the best of my knowledge, there are not studies on value relevance of financial risks disclosure according to IFRS 7 in Europe.

Third, this research is useful for regulators because it can provide important insights about any updates on FIRD rules. In particular, banks' regulatory framework is formulated by a range of different bodies causing and, in some cases, rules overlapping. Hence, this results may suggest whether regulators have made every effort to ensure transparency in the market in terms of financial instruments risk disclosure.

This thesis is structured as follow.

The first chapter deals with a review of the state of the art about financial instruments risk disclosure. Currently the disclosure on the risks is undergoing an evolutionary process, justified by the continuous change of the economic system. The financial scandals (i.e. Lehman Brothers, American International Group, Enron, Societe General) that have affected the financial system, with a severe impact on the portfolios of many investors and on the soundness of the banking system, gave rise to distrust, volatility of market prices and a strong need for regulation of information on financial risks. In this climate of uncertainty it is important to restore transparency in the system (Lambiasi, 2011). However, despite the continuous raising of the minimum requirements, companies do not generally provide adequate information on risk and investors are warning about the lack of information on entities' risk taking (Maffei et al., 2014).

Since financial report is a tool by which a bank fulfills its disclosure obligations, it is possible argue that it assumes a dual function: it must guide the choices of financial

operators; it is subject to control by the supervisory bodies, in order to ensure the proper functioning of markets (Maffei, 2010). To prosecute these aims it is necessary that the banks financial reporting deal with in a broad and comprehensive way the risks associated with its brokerage business, which is increasingly addressing to financial instruments (Ruozi, 2015). Banks employ various types of financial instruments with different risk profiles, to meet the needs of commitment and funding (Maffei, 2011). Hence, the banking sector is particularly concerned in financial instruments risk disclosure (FIRD) issue, especially during the last financial crisis (Woods et al., 2008; Gebardht et al., 2014).

In addition, the first chapter investigates the regulation about FIRD (III Pillar of Basel III and IFRS 7) showing similarities and differences between rules. Hence, banks, in addition to fulfilling the reporting requirements of the financial statements, are required to provide disclosures on business risks in a further document entitled “Pillar III Disclosure requirements” to be drawn up under the provisions laid down in Pillar III the New Capital Accord (Basel II). The preparation of this document responds to the reporting obligations relating to capital adequacy and risk exposure. Moreover, pursuing accountability and transparency objectives of management for even require disclosure of the methodologies used to identify, measure, manage, control and monitor risks, encouraging, ultimately, the taking of decisions by different market participants. Instead, the disclosures required by IFRS 7 should allow an accurate assessment of the nature and extent of the risks and the impact that the financial instruments have on the performance of the bank.

The second chapter reviews the value relevance literature, with a focus on FIRD. The chapter investigates the positive accounting theory (PAT) as a branch of studies which led to the development of those on value relevance. Pioneers of these last are Ball and Brown (1968), and Beaver (1968) who introduce the value relevance studies according to PAT. They examine the information content of accounting information in relation to the equities market prices. The hypothesis at the base of the survey is that if the financial information is useful to financial market, then it must be incorporated in the stock price.

It is also made a classification of value relevance studies (chapter 2.2) with a focus on accounting principle. Also in this case, the evidence are mixed showing that some Authors find value relevant accounting information; on the contrary, others do not find this explanatory power. Thus, a review of empirical models adopted in value relevance literature has provided. I discuss price models, return models and balance sheet models showing strengths and weaknesses of each one.

Finally, the development of hypothesis is provided. The concept of information asymmetry is discussed according to Jensen and Meckling (1976) and Ross (1977). The agency problem arises in part because of the imperfect observability of managerial effort and costly contracting. Hence, the manager (agent), who should serve the interest of the shareholders (principal), tries, instead, to maximize his personal wealth. This information opacity affects the economic operators' ability to assess appropriate risk levels according to their risk appetite. In particular, the information opacity of credit intermediaries is often caused by both managerial opportunism phenomena and by excessive cost of disclosure. Hence, on this basis, the main research question is: does investors find FIRD provided by banks, under IFRS 7, value relevant?

In particular, to provide more in depth analysis on IFRS 7, the financial disclosure has been divided in qualitative and quantitative financial risk information, so two research hypotheses have been formulated. In other words: does investors find qualitative/quantitative FIRD provided by banks, under IFRS 7, value relevant?

With this regard, Botosan and Plumlee (2002) argue that the different nature of disclosure is crucial to any analysis as the market responds differently.

Chapter 3 replies to this questions. As stated above the sample is composed by 546 bank observations coming from UK, Italy, Germany, France and Spain over 8-year period, 2007– 2014. According to value relevance literature, the price model is used and it is developed by a panel data analysis.

The main test variable is the financial disclosure index splitted in qualitative financial disclosure index (QLFDI) and quantitative financial disclosure index (QTFDI), and other variables are included, such as Core tier 1, volatility, EPS, ROE, Cash flow per share, Non performing loan, Liquidity index and Leverage.

In order to provide robustness to results, the core tier 1 has substituted to BVPS because BVPS (as EPS) is a main variable in value relevance studies, but to adapt the analysis to the banking system, the core tier 1 is preferred.

Final results show that only qualitative index has a positive effect on banks' value, meaning that qualitative disclosure recommended by IFRS 7 is value relevant. Maybe qualitative information can be easily found because it is supposed to have a clearer language (Pucci and Tutino, 2012). Instead, the quantitative disclosure index is not relevant for investors because of uncertainty, multi-person settings with conflicts of interest, and information asymmetry. Depending on the assumptions made about these factors, it is possible to predict a negative or absent relationship between increased disclosure and entities value. For example, if the production of information is costly for an entity, investors perceive the business less profitable. Investors sometimes might suspect or misinterpret the intentions of the company in providing more information to the market. In summary, the impact of disclosure on firm value is still an empirical issue that requires further investigation.

Chapter 1: Financial instruments disclosure

1.1 Financial instruments risk disclosure: an overview

The term “disclosure” indicates the accompanying information of the financial reporting (Caldarelli, 2008). Disclosure is a tool of overcoming the limits of the financial reporting. Indeed, financial operators use to say “Selling equity is selling story”, i.e. to sell the security necessary to sell the story relating to the company and its competitive environment. However, due to imperfections, or externalities, of financial market, investors are not able to assess entities’ value and consequently to evaluate appropriate investments. Information problem arises from information differences, so disclosure is critical for the functioning of an efficient capital market (Healy and Palepu, 2001).

The importance of risk disclosures as a tool of helping users to understand the risks associated with on - and off - balance sheet items has been accentuated in the last years (Maffei et al., 2014). The consequences of limited transparency regarding financial instruments risk exposure have highlighted the opacity of annual reports, leading to the mispricing of risk and misallocation of capital, and affecting investors ability to assess their investment decision.

Currently the disclosure on the risks is undergoing an evolutionary process, justified by the continuous change of the economic system. The financial scandals (i.e. Lehman Brothers, American International Group, Enron, Societe General) that have affected the financial system, with a severe impact on the portfolios of many investors and on the soundness of the banking system, gave rise to distrust, volatility of market prices and a strong need for regulation of information on financial risks. In this climate of uncertainty it is important to restore transparency in the system (Lambiasi, 2011).

However, despite the continuous raising of the minimum requirements, companies do not generally provide adequate information on risk and investors are warning about the lack of information on entities’ risk taking (Maffei et al., 2014).

Indeed, listed companies have improved the amount of information disclosed with regard to risks, but disclosing current financial risks will not provide sufficient information about the financial status of an entity because financial performance is also affected by strategic and operating risks (Beretta and Bozzolan, 2004).

If listed companies disclose information about existing risks and uncertainties, the investors' ability to assess their risk level is seriously undermined, leading to a lack of confidence in the reliability of financial information (Hodder et al., 2001).

Despite that, literature about the usefulness of risk disclosure is mixed.

Some studies describe the usefulness of this kind of disclosure to investors. For example, Jorion (2002), analyzing VaR as measure of financial risks disclosure, finds that it is informative for investors. In addition, Linsmeier et al. (2002) study firms' that disclose FRR 48 about their exposure to interest rate, foreign currency exchange rates, and energy prices, finding a decline in trading volume sensitivity. The Authors conclude that FRR 48 provide useful information to investors. Other studies claim the relevance of proprietary costs which negatively affect firms' willingness to provide risk disclosure (i.e. Oliveira, 2011; Maffei et al., 2014).

Recent years have seen an increase in demand for improved risk reporting by companies and this demand has intensified following the 2007 global financial crisis (ICAEW, 2011). The call for improved risk reporting is based on the view that it will lead to a better understanding of entities risks by investors and other users. Consequently, this could lead to a more efficient allocation of resources (ICAEW, 2011).

This is especially true when some items have a high complexity. This is the case of financial instruments (Maffei, 2009). Information about financial instruments plays a very important role in determining entities' financial position and performance.

The use of financial instruments has increased dramatically over the last two decades, leading to many cases of financial loss and bankruptcy due to the sizeable losses arising from transactions involving derivative products. A major reason for these financial scandals was that the use of financial instruments was not disclosed in the financial reporting (Dunne et al., 2004).

Scholar suggest that disclosing information about financial instruments to shareholders, especially on a company's hedging activities and their associated risk, is a sensitive issue (De Marzo and Duffie, 1995). Also Young (1996) argue that financial instruments disclosure should provide reliable and clear information which is considered essential

for the functioning of an economic system, enhance the visibility of derivative instruments and their risk in the financial statements and thereby facilitate better decision-making by investors, creditors, and regulators, allow executives' risk management policy to be evaluated, and support the efficient functioning of derivatives markets.

Not only Academics, but also the standard setter (i.e. FASB and IASB) have introduced a number of standards which deal with financial instruments recognition and disclosure in order to provide useful information for investors.

The table 1 below shows the financial instruments related statements issued by IASB and FASB during the years.

Table 1. Financial instruments related statements issued by IASB and FASB

Issued	Effective	IASB	FASB
1990	1991	IAS 30: Disclosures in financial statements of banks	SFAS 105: Disclosure of information about Financial instruments with off-balance sheet risk and financial instruments
1991	1993		SFAS 107: Disclosure about Fair Value of financial instruments
1993	1994		SFAS 115: Accounting for certain investments in debt and equity securities
1994	1995		SFAS 119: Disclosure about derivative financial instruments and Fair Value of financial instruments
1995	1996	IAS 32: Financial Instruments: Disclosure and Presentation	
1998	2001	IAS 39: Financial Instruments: Recognition and Measurement	SFAS 133: Accounting for Derivative Instruments and Hedging Activities
2000	2001		SFAS 140: Accounting for Transfers and Servicing of financial instruments
2003	2004		SFAS 150: Accounting for Certain financial instruments
2006	2007	IFRS 7: Financial Instruments: Disclosure	SFAS 157: Fair value measurements
2007	2008		SFAS 159: The fair value option for financial assets and liabilities
2008	2009		SFAS 161: Disclosures about

		derivatives instruments and hedging activities
2009	2010	SFAS 166: Accounting for transfers of financial assets
2009	2018	IFRS 9: Financial Instruments

Source: Own elaboration

Generally speaking, high quality accounting standards should result in quality financial reports and enhanced investor confidence in the credibility of information being published, so companies that comply with the accounting standards would be expected to produce high quality financial reporting (i.e. Levitt, 1998; Li and Gao, 2007).

Many studies have been conducted, both in Europe and overseas, showing mixed results about financial instruments risk disclosure.

Goldberg et al. (1994) investigate whether the information provided by SFAS 105, SFAS 107 and SFAS 119 is useful for investors in assessing the credit and market risk associated with the use of off balance sheet financial instruments. The Authors conclude that credit risk information is more useful than market disclosure because this last one is inadequate due to a lack of specificity and quantification.

Otherwise, Palmer and Schwarz (1995) argued that SFAS 105 had a negative impact on the clarity of the information disclosed because investors find difficulties to understand differences between required contract dollar amount disclosures and actual risks. In addition, no firm provides a useful detailed breakdown of the degree of risk attributable to these different activities.

Edwards and Eller (1995) conduct a study on SFAS 119, finding that derivatives became more transparent because information is presented in a way that allows users and regulators to make informed judgements about an entity's derivatives activity.

Similarly, Herz et al. (1995) argue that disclosure about derivatives improve after the adoption of SFAS 119.

In contrast with the aforementioned Authors, Kawamura (1996) some point out that disclosures on derivatives is incomplete, or less detailed than required.

Hodder et al. (2001) investigated the impact of SFAS 115 on banks' disclosure practices and found that banks incurred real costs in making accounting choices under SFAS 115; hence, they found that most disclosures were not complete.

Regarding SFAS 133, Hernández (2003) states that SFAS 133 increases the visibility, comparability and understandability of the risks associated with derivatives.

Otherwise, the study conducted by Bhamornsiri and Schroeder (2004) results in derivatives information hard to understand and with a lack of uniformity.

Similar results are reached by Hamlen and Largay (2005) who investigate the disclosures about derivative financial instruments provided by the 30 high-profile companies tracked in the Dow-Jones Industrial Average (DJIA-30). They found that, even though, a generally increase in derivatives' disclosures after adopting SFAS 133 exists, these disclosures are not as informative as one might expect.

Also Zhang (2009) examine the effect of SFAS 133 disclosure on corporate risk management behavior. He concludes that that volatility of cash flows and risk exposures related to interest rate, foreign exchange rate, and commodity price decrease significantly for speculator firms but not for hedger firms, suggesting that speculators engage in more prudent risk-management activities after the adoption of SFAS 133.

As for the studies in the field of IASB, on the best of my knowledge, Lopes and Rodrigues (2007) analyze the annual reports of companies of the STOXX 50 index to evaluate their accounting practices for financial instruments and compare them to the measurement, recognition and disclosure requirements stipulated in IAS 32 and IAS 39. They noted that the overall level of financial instruments disclosure among their sample firms was less than satisfactory; the degree of non-compliance ranged from 27% for financial firms to 95% for non-financial firms. More specifically, they found that the qualitative information provided about risk management policies and derivative financial controls was not clearly understood by users; information was general and spread out in different parts of the annual reports.

Following the introduction of IFRS 7, Bischof (2009) investigated the impact of its first time adoption on financial instruments disclosure using the annual reports for 171 banks

from 28 European countries. The Author concludes that the introduction of IFRS 7 in the European banking system has had a positive impact not only on the quantity of information disclosed, but only on its quality. He has focused only on banks because the impact of the new standard is stronger in this sector than others because financial industries hold almost the 90% of financial instruments in their assets.

In another study about the impact of IFRS 7, Bamber and McMeeking (2010) reviews the financial instruments disclosures of the FTSE 100 non-financial IFRS 7 compliant firms. They find, similarly to Bischof (2009), that information about financial instruments substantially increases (especially qualitative details). In addition, the paper indicates that the sample provided voluntary information about financial instruments over-and-above the requirements of IFRS 7.

More recently, using a sample of non-financial firms from STOXX Europe 600 Index, Gebhardt (2012) investigates financial instruments disclosure practices based on the requirements of IFRS 7 and IAS 39, using content analysis. This evidence refutes the pervasive assertions that fair value measurement is diffused and that the quality of fair value measurements is poor because of manipulation which might be prone when using level 3 measurements.

Birt et al. (2013) looked at firms in the Australian extractives industry for their study of IFRS 7 related disclosures and documented that companies with high leverage and that employ a Big 4 audit firm tend to provide larger volumes of disclosure.

Overall, studies on the effects of financial instruments disclosures in the US field are major than those in Europe. In addition, there are also only a few value relevance studies focusing on European entities. The majority of them using US datasets and the results are often weak and difficult to interpret. Hence, Scholars claim for additional studies with more up-to-date data especially from IFRS financial reporting and with refined methodologies (i.e. Gebhardt, 2012).

1.2 Risk disclosure: a literature review

The reason why current risk disclosure practice may be un-useful to users of financial information may rely in the proprietary costs theory because it can explain costs and

benefits of disclosure. Indeed, most entities may be reluctant to disclose information since they feel it is commercially or politically sensitive (Marshall and Weetman, 2007). This is because “outside parties (may) use the information in ways that are harmful to its interests (e.g., competitors, pressure groups)” (Cormier et al., 2005; pp. 8–9).

Entities do not know what is the better strategy of disclosure because, if they disclose poor information their risk management systems may be perceived as weak, so investors may feel that the entities disclosures are limited or think they have something to hide; otherwise, if entities disclose more pieces of information they could be incur in incur proprietary costs.

Thus, according to the finance theory, Verrecchia (1983) suggests that the decision to disclose information is a function of the consequential costs. Indeed, the finance theory suggests that more public information enhances an entity value by reducing the firm's cost of capital and increasing the cash flows. More specifically, “bad news results in a cost because investors and potential investors are discouraged. However, if the disclosure of bad news prevents potential competitors entering the market or a particular subsection of the market, future cash flows may increase as a result” (Abraham and Shrivess, 2014, p.93). Obviously, the similar logic is true for good news because they can, on one hand, result in positive future cash flows by making the company more attractive to outside investors; on the other hand they can encourage competitors and potential competitors to enter the market, thereby reducing those future cash flows.

The introduction of IAS/IFRS has certainly increased the level of disclosure quality in Europe (Daske, 2008; Wang et al., 2008; Bischof, 2009; Beuselinck et al., 2010; Byard et al., 2011; Jansson et al., 2012) with better consequences on financial reporting transparency. Generally speaking, the majority of entities are motivated to provide high quality information when they believe that the information is a good new to the market, hence the quality of information would have a positive effect on entities' share price.

Literature provides theoretical reasons why, under information asymmetry, more precise disclosures should be useful for investors. In other words, higher information quality lowers the information asymmetries between entities and investors, thus increasing

liquidity and ultimately lowering the required rates of return (e.g., Diamond and Verrecchia, 1991; Verrecchia, 2001).

However, the increasing complexity of business strategies, operations, and regulations makes it quite difficult for investors to appreciate financial information on its own without clear, accompanying explanations (Marston and Shrikes, 1991). The accounting information currently issued by firms is not wholly adequate when used for decision making purposes, and within that process, for forecasting, for which additional information on risks is required (Cabedo and Tirado, 2004). Furthermore, the financial crisis has exacerbated some accounting lacks, including failure to account for uncertainty and inadequate communication of the impact of risk-taking, thereby undermining the reliability and relevance of disclosures (Magnan and Markarian, 2011).

Indeed, the presentation of risk in annual reports was not standardized and descriptions of risk disclosure were vague and elusive (Oliveira et al., 2013).

Linsley et al., (2006) and Linsley and Lawrence (2007) find that the risk disclosures are dispersed throughout the report and are incomplete, showing that the level of readability is difficult or very difficult for investors. Therefore, the risk information needs of readers of the annual report are only being partially satisfied.

Similarly, Oliveira et al. (2011) highlight problems of relevance, reliability and understandability due to different maturity time bands that report exposures to credit, market and liquidity risks; different Value-at-Risk and sensitivity analysis assumptions; and different practices for reporting capital structure and adequacy.

Overall, it seems that risk disclosure lacked transparency, in particular disclosure about financial instruments (Oliveira et al., 2013)

Maffei et al. (2014) argue that risk disclosure is not useful for stakeholders, as it is not really detailed, nor forward-looking, nor sufficient for the assessment of the overall risk profile, nor relevant for the decision-making process.

Scholars do not focus only on the quantity of information in the risk report, but analyze its quality putting into the light the weaknesses due to a disclosure too much qualitative and generic, with little information about the mitigation of risks, and little discussion

about how risk arose and was being managed (Linsley et al, 2006; Magnan and Markarian, 2011; Oliveira et al., 2013).

Indeed, there are few and uncorrect details about VaR model. See, for example, Pérignon and Smith (2010) who claim that historical simulation based on past events was the method used most often to assess VaR, but it has very little information emerged about future volatility. Moreover, these disclosures are very difficult to audit (Woods et al., 2008).

The problem of these highlighted deficiencies is that the forward looking disclosures is scarce. The consequences are low levels of comparability, reliability and understandability of information provided.

On the other hand, many studies claim the usefulness of risk disclosure for investors and other stakeholders.

Jorion (2002) conducts a study VaR as measure of the dollar amount of potential loss from adverse market moves, so it has considered as standard benchmark for measuring financial risks. Investigating the relation between the trading VaR disclosed by a small sample of US commercial banks and the subsequent variability of their trading revenues, the Author concludes that VaR disclosure is informative for analysts and investors.

Linsmeier et al. (2002) find that SEC FRR No 48 reduce investors uncertainty and diversity of opinion about the implication of changes in interest rates, foreign currency exchange rates and commodity prices.

Kravet and Muslu (2011) analyze the annual changes in risk disclosures and find that they are significantly and positively associated with changes in daily stock return volatility, changes in volatility of negative daily returns, filing volume, changes in trading volume, changes in dispersion of outstanding forecasts, and volatility of forecast revisions. Hence, they conclude that risk disclosures increase investors' risk perceptions.

Similarly, Campbell et al. (2014) study the information content of risk factor disclosures for market-based risk, information asymmetry, and stock returns required by SEC to

analyze market participants incorporate the information conveyed by risk factor disclosures into their assessments of firm risk and stock price, and that the disclosure decreases information asymmetry amongst firms' shareholders. Authors find that that managers provide informative risk factor disclosures, and market participants incorporate the information conveyed by these disclosures into their assessments of firm risk.

Overall, studies about the usefulness, or unusefulness, of risk disclosure is still an open issue so it is necessary to fill the gap in the aforementioned literature. Indeed, the debate about financial risk is evolving because they are changing over time since they are changing the socio-economic contexts. Therefore, claim to find a comprehensive model in order to control risks is illusory.

1.3 The financial instruments risk disclosure in the banking sector

With respect to the banking sector, the financial reporting assumes a dual function: it must guide the choices of financial operators; it is subject to control by the supervisory bodies, in order to ensure the proper functioning of markets (Maffei, 2010).

To prosecute these aims it is necessary that the banks financial reporting deal with in a broad and comprehensive way the risks associated with its brokerage business, which is increasingly addressing to financial instruments (Ruozi, 2015).

Banks employ various types of financial instruments with different risk profiles, to meet the needs of commitment and funding (Maffei, 2011). Hence, the banking sector is particularly concerned in financial instruments risk disclosure (FIRD) issue, especially during the last financial crisis (Woods et al., 2008; Gebardht et al., 2014).

It seems also that supervisory and regulatory bodies have not been able to perform their tasks. Proof of this is the banking crisis of 2007 raised in the US and swiftly spread throughout Europe (Malinconico, 2007). In recent years, policy makers such as the International Accounting Standards Board (IASB) and the Basel Committee on Banking Supervision (Basel) have taken significant steps to improve market reporting, with IFRS 7 and the III Pillar of the revised Framework for International Convergence of Capital Measurement and Capital Standards.

Professional and regulatory associations (Cadiou and Mars, 2009) claim that the combined use of IFRS 7 and Pillar III of Basel Agreement will have a positive effect on FIRD.

1.4 The regulation of financial instruments risk disclosure

In the next sections, I analyze both Pillar III requirements and IFRS 7 showing similarities and differences. Indeed, some of the Pillar III disclosures overlap with the disclosure requirements of IFRS 7 with regard to the qualitative and quantitative disclosures. The Basel Committee has claimed that, in order to help users benefit from the two sets of information, and to understand the structuring of accounting and prudential information, banks should provide adequate explanation in their Pillar III disclosures on the differences in the scope of consolidation for accounting and regulatory purposes, as required by the CRD (annex XII Part 2 point 2).

1.4.1 Basel III: Third Pillar

Banks, in addition to fulfilling the reporting requirements of the financial statements, are required to provide disclosures on business risks in a further document entitled “Pillar III Disclosure requirements” to be drawn up under the provisions laid down in Pillar III the New Capital Accord (Basel II).

The preparation of this document responds to the reporting obligations relating to capital adequacy and risk exposure. In addition, pursuing accountability and transparency objectives of management for even require disclosure of the methodologies used to identify, measure, manage, control and monitor risks, encouraging, ultimately, the taking of decisions by different market participants.

The Pillar III aim then is to supplement the minimum capital requirements (Pillar I) and the supervisory review process (SReP) (Pillar II).

In particular, the Committee has provided a minimum level of information that must be guaranteed by all operators, and brokers who have chosen to use internal methods and more sophisticated for the calculation of requirements under Pillar I should provide more information in order to ensure consistent disclosures with the complexity of the bank itself.

The disclosure obligations of the banking institutions, provided for in the Pillar III of Basel, from 2013 have been subject to a continuous and gradual change, in response to the latest agreement, known as Basel III, which will be fully operational in 2019. This measure has become necessary following the financial crisis of 2007-2008, which highlighted a number of weaknesses.

The Basel Committee on Banking Supervision (BCBS) also sets out, in order to improve market discipline and transparency, specific disclosure requirements by requiring the publication by banks of a reconciliation between the elements that make up the regulatory capital and the items within the corresponding financial statements and other information relating to the characteristics of the equity instruments issued.

The main goal of the BCBS is the market discipline because the provision of relevant and reliable information about common key risk metrics to market participants is fundamental for a stable banking system. It reduces information asymmetry and improve comparability of banks within and across Countries. Pillar III of the Basel framework aims to promote market discipline through regulatory disclosure requirements. These requirements helps investors to capture information relating to a bank's regulatory capital and risk exposures.

The *ratio* under market discipline are: 1) banks show a high degree of “opacity” which makes it difficult to correctly evaluate the risk of their investments; 2) they are financed by individuals (depositors) that are unable to properly evaluate risk and to suitably price it by demanding higher rates to riskier banks; 3) play a major role in the economic system– as channels for the transmission of monetary policy and managers of a large part of the payment system – and thus are entitled to use instruments such as special funding from the Central Bank and deposit insurance, which together create a safety net that discourages creditors to assess the bank's soundness (Resti and Sironi, 2007).

On January 2015, the BCBS issued the revised Pillar III with the aim to 1) adopt a specific approach both to the credit, market, liquidity and operational risks and banks capitalization; 2) develop a common disclosure framework based around Pillar I that lead investors to take informed investment decisions, in particulat after the 2007 financial crisis. In addition, it must be published concurrently with its financial report for the corresponding period and the information provided must be subject, at a

minimum, to the same level of internal review and internal control processes. Table 2 presents a summary of the disclosure requirements under Pillar II.

Table 2. Pillar III Disclosure requirements

	Tables and templates	Fixed format	Flexible format	Quarterly	Semi-annually	Annually
Part 2 – Overview of risk management and RWA	OVA – Bank risk management approach		X			X
	OV1 – Overview of RWA	X		X		
Part 3 – Linkages between financial statements and regulatory exp.	LI1 – Differences between acc. and regulatory scopes of consolidation and mapping of financial statements with regulatory risk categories		X			X
	LI2 – Main sources of differences between regulatory exp. amounts and carrying values in financial statements		X			X
	LIA – Explanations of differences between accounting and regulatory exposure amounts		X			X
Part 4 – Credit risk	CRA – General information about credit risk		X			X
	CR1 – Credit quality of assets	X			X	
	CR2 – Changes in stock of defaulted loans and debt securities	X			X	
	CRB – Additional disclosure related to the credit quality of assets		X			X
	CRC – Qualitative disclosure requirements related to credit risk mitigation techniques		X			X
	CR3 – Credit risk mitigation techniques – overview	X			X	
	CRD – Qualitative disclosures on banks’ use of external credit ratings under the standardised approach for credit risk		X			X
	CR4 – Standardised approach – credit risk exposure and Credit Risk Mitigation (CRM) effects	X			X	
	CR5 – Standardised approach – exposures by asset classes and risk weights	X			X	
	CRE – Qualitative disclosures related to IRB models		X			X
CR6 – IRB - Credit risk exposures by portfolio and PD range	X			X		

	CR7 – IRB – Effect on RWA of credit derivatives used as CRM techniques	X			X	
	CR8 – RWA flow statements of credit risk exposures under IRB	X		X		
	CR9 – IRB – Backtesting of probability of default (PD) per portfolio		X			X
	CR10 – IRB (specialised lending and equities)		X		X	
Part 5 – Counterparty credit risk	CCRA – Qualitative disclosure related to counterparty credit risk		X			X
	CCR1 – Analysis of counterparty credit risk (CCR) exposure by approach	X			X	
	CCR2 – Credit valuation adjustment (CVA) capital charge	X			X	
	CCR3 – Standardised approach of CCR exposures by regulatory portfolio and risk weights	X			X	
	CCR4 – IRB – CCR exposures by portfolio and PD scale	X			X	
	CCR5 – Composition of collateral for CCR exposure		X		X	
	CCR6 – Credit derivatives exposures		X		X	
	CCR7 – RWA flow statements of CCR exposures under the Internal Model Method (IMM)	X		X		
	CCR8 – Exposures to central counterparties	X			X	
Part 6 – Securitisation	SECA – Qualitative disclosure requirements related to securitisation exposures		X			X
	SEC1 – Securitisation exposures in the banking book		X		X	
	SEC2 – Securitisation exposures in the trading book		X		X	
	SEC3 – Securitisation exposures in the banking book and associated regulatory capital requirements – bank acting as originator or as sponsor	X			X	
	SEC4 – Securitisation exposures in the banking book and associated capital requirements – bank acting as investor	X			X	
Part 7 – Market risk	MRA – Qualitative disclosure requirements related to market risk		X			X
	MRB – Qualitative disclosures for banks using the Internal Models		X			X

Approach (IMA)					
MR1 – Market risk under standardised approach	X			X	
MR2 – RWA flow statements of market risk exposures under an IMA	X		X		
MR3 – IMA values for trading portfolios	X			X	
MR4 – Comparison of VaR estimates with gains/losses		X		X	

Source: BCBS (2015). Revised Pillar III disclosure requirement

1.4.2 IFRS 7

The risk management process within banks is crucial for their survival, but the impact of the financial risks on credit institutions is not an issue that involves the internal actors only, but also concerns the external parties (stakeholders), who daily interact with the banks, and therefore they need to be informed as much on risks as the use of financial instruments.

The main tool by which a bank fulfills its disclosure obligations is the financial reporting that is designed to inform about the current performance, it highlights the past trends and decisions for the future.

The term “disclosure” indicates the accompanying information of the financial reporting (Caldarelli, 2008). The need to enrich the information framework of balance sheet items is felt especially when the object of detection operations have a high complexity. This is the case of financial instruments (Maffei, 2009). In addition, the process of globalization and evolution of financial markets, which originated in the late twentieth and early twenty-first century, has highlighted an issue of no small account linked to the inconsistency and lack of comparability of financial statements of companies the different European countries, drawn up on the basis of very different principles.

In order to solve this problem, the European Community with the Community Regulation n. 1606 of 2002 establishes the obligation to adopt the IAS/IFRS issued by the IASB, for EU companies listed on regulated markets as well as with financial instruments widely distributed among the public (banks, insurance). These principles have been introduced since 2005.

In 2005, the IASB issued IFRS 7, which replaced IAS 30 and the disclosure requirements of IAS 32. IFRS 7 governs the disclosures related, than the information already provided by IAS 32 and IAS 39, regarding the significance of financial instruments for the entity's financial position and financial performance exposure to credit, market and liquidity arising from financial instruments. The accounting policy is applied to all financial instruments (shares, bonds, derivatives) understood as any contract that gives rise to a financial asset for one entity and a financial liability of another entity.

The disclosures required by IFRS 7 should allow an accurate assessment of the nature and extent of the risks and the impact that the financial instruments have on the performance of the bank.

The second part of the accounting principle (par. 31-42) discusses FIRD distinguishing between quantitative (synthetic data on risk exposure at the reporting date by type of risk, risk concentration, attention to credit risk, a sensitivity analysis to market risk) and qualitative information (exhibition the risks and how they are generated, objectives and procedures for the management of financial risk and valuation methods, changes compared to the past) for each type of financial risk.

Qualitative information are common to all financial risk:

1. the exposures to risk and how they arise;
2. its objectives, policies and processes for managing the risk and the methods used to measure the risk;
3. any changes from the previous period.

More details on IFRS 7 financial risk disclosure requirements are provided in table 3.

Regarding credit risk, IFRS 7 requires disclosure about the exposures to risk, a description of collateral held as security, information about the credit quality of financial assets that are neither past due nor impaired. Banks should indicate the amount that best represents its maximum exposure to credit risk at the end of the reporting period without taking account of any collateral held because credit risk is, *ceteris paribus*, greater or less with respect to the type of guarantees received. For this reason, the accounting standard provides even the description of collateral to mitigate credit risk.

With regard to liquidity risk, the indexes analysis is not sufficient to test the entity's liquidity because they are historical markers with a very low forecast ability. In order to avoid this problem, IFRS 7 requires a more dynamic approach to liquidity risk. Indeed, it focuses on expected inflows and outflows (Fortuna, 2010).

Table 3. IFRS 7 financial risk requirements

	Credit risk	Market risk	Liquidity risk
Qualitative information	(a) the exposures to risk and how they arise	(a) the exposures to risk and how they arise	(a) the exposures to risk and how they arise
	(b) its objectives, policies and processes for managing the risk and the methods used to measure the risk	(b) its objectives, policies and processes for managing the risk and the methods used to measure the risk	(b) its objectives, policies and processes for managing the risk and the methods used to measure the risk
	(c) any changes in (a) or (b) from the previous period	(c) any changes in (a) or (b) from the previous period	(c) any changes in (a) or (b) from the previous period
Quantitative information	(a) the amount that best represents its maximum exposure to credit risk at the end of the reporting period without taking account of any collateral held or other credit enhancements (eg netting agreements that do not qualify for offset in accordance with IAS 32); this disclosure is not required for financial instruments whose carrying amount best represents the maximum exposure to credit risk	(a) a sensitivity analysis for each type of market risk to which the entity is exposed at the end of the reporting period, showing how profit or loss and equity would have been affected by changes in the relevant risk variable that were reasonably possible at that date	(a) a maturity analysis for non-derivative financial liabilities (including issued financial guarantee contracts) that shows the remaining contractual maturities
	(b) a description of collateral held as security and other credit enhancements, and their financial effect (eg a quantification of the extent to which collateral and other credit enhancements mitigate credit risk) in respect of the amount that best represents the maximum exposure to credit risk (whether disclosed in accordance with (a) or represented by the carrying amount of a financial instrument)	(b) the methods and assumptions used in preparing the sensitivity analysis	(b) a maturity analysis for derivative financial liabilities. The maturity analysis shall include the remaining contractual maturities for those derivative financial liabilities for which contractual maturities are essential for an understanding of the timing of the cash flows

(c) information about the credit quality of financial assets that are neither past due nor impaired	(a) an explanation of the method used in preparing such a sensitivity analysis, and of the main parameters and assumptions underlying the data provided	(c) a description of how it manages the liquidity risk inherent in (a) and (b)
(a) an analysis of the age of financial assets that are past due as at the end of the reporting period but not impaired	(b) an explanation of the objective of the method used and of limitations that may result in the information not fully reflecting the fair value of the assets and liabilities involved	
(b) an analysis of financial assets that are individually determined to be impaired as at the end of the reporting period, including the factors the entity considered in determining that they are impaired	When the sensitivity analyses disclosed in accordance with paragraph 40 or 41 are unrepresentative of a risk inherent in a financial instrument (for example because the year-end exposure does not reflect the exposure during the year), the entity shall disclose that fact and the reason it believes the sensitivity analyses are unrepresentative	
(a) the nature and carrying amount of the assets		
(b) when the assets are not readily convertible into cash, its policies for disposing of such assets or for using them in its operations		

Source: Own elaboration

Lastly, disclosure about market risk focuses on the sensitivity analysis. It consists to identify what would be the effects on the financial reporting if, *ceteris paribus*, some key variables related to market risk could have changed. Appendix B of the principle indicates some possible relevant variables: the curve of interest rates, exchange rates, stock prices, commodity prices. IFRS 7 does not require to consider all the effects of the various possible values which the sensitivity analysis variables can assume, but only for those reasonably possible.

Table 4 shows the minimum disclosure requirements before and after the adoption of IFRS 7.

Table 4. Minimum disclosure requirements before and after the adoption of IFRS 7

Risk category	Before IFRS 7 adoption (IAS 1, IAS 30 and IAS 32)	After IFRS 7 adoption (IAS 1, IFRS 7)
Generic	Basis of preparation of financial statements Specific accounting policies used (such as the basis of measurement) Description of financial risk management objectives and policies	Basis of preparation of financial statements Specific accounting policies used (such as the basis of measurement) Description of financial risk management objectives and policies
Credit	Details of movements in any allowance for impairment losses and advances during the period Aggregate amount of impairment losses Maximum credit risk exposures Potential risk concentrations (for example by industry type)	Total credit risk exposure and quality Analysis of aged, past due, non-impaired assets Analysis of individual impaired financial assets Collateral held or repossessed Carrying amounts of renegotiated assets
Market	Interest risk exposure detailed by contractual repricing or maturity dates Nature and extent of off-balance sheet instruments exposed to interest rate risk Repricing gap analysis Sensitivity analysis of how risk exposures are managed and controlled	Detailed information about Value-at-Risk models (assumptions, parameters and limitations) Sensitivity analysis for each type of market risk Description of the method, assumptions and parameters used
Liquidity	Liquidity gap analysis of assets and liabilities according to their maturity	Maturity analysis for financial liabilities Qualitative disclosures about how liquidity risk is managed

Capital structure and adequacy	Description of what is managed as capital Nature of capital requirements imposed externally Description of how capital requirements are incorporated into management of capital Description of how managing capital objectives are met
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Source: Oliveira et al., 2011

We can see that there are not differences about generic type of risks. The news related to credit risk is the description of the collateral and the risk exposure with and without the presentation of guarantees. Disclosure about market risk provides more pieces of information for VaR techniques and sensitivity analysis, while for liquidity risk provides more maturity analysis and qualitative information. After the adoption of IFRS 7 also information about capital structure and capital adequacy are provided.

Table 5 shows differences between IFRS 7 and Pillar III requirements. They are very similar, with the exception of operational risk that is not required by IFRS 7.

Table 5. Differences between IFRS 7 and III Pillar

	IFRS 7	Pillar III
Market risk	VaR and sensitivity analysis	VaR and sensitivity analysis
Credit risk	Requires presentation of maximum credit risk exposure	Requires exposure at default
	Disclosures for portfolios subject to the Internal Ratings	Disclosures on risk characteristics (sector geography) and impairment analysis
Liquidity risk	Require specific disclosures on liquidity risk	Does not require any specific disclosures on liquidity risk
Operational risk	Does not cover operational risk	Cover operational risk

Source: Own elaboration

Currently academic empirical research on IFRS 7 mostly concentrated on compliance and relevance on selected type of risk disclosure. Therefore, my study has the aim to be different from previous ones because first, it focuses on all types of financial risk information under IFRS 7 (credit, market and liquidity risks) in the European banking sector and, secondly, it analyses the value relevance of FIRD required by the aforementioned accounting principle.

Although the disclosure requirements by IFRS 7, the Financial Stability Board (FSB) in 2011, claimed the need to improve risk disclosures based on input from investors and other key stakeholders writing: “Without clear and complete disclosures of a company’s risk exposures, its plans and strategies for bearing and mitigating those risks, and the effectiveness of its risk management strategies, investors will be unable to evaluate either the company’s potential risks and rewards or its expected future outcomes” (Papa, 2016; FSB, 2011).

1.4.3 IFRS 9

In 2018, IFRS 7 will be joined by IFRS 9: Financial Instruments to enhance transparency in financial market.

Market discipline is defined as the ‘actions of shareholders, creditors and counterparties of banking companies that can influence the investment, operational and risk-taking decisions of bank managers’ (Brealy et al., 2012).

The greater the level and quality of disclosure, the greater the ability of stakeholders to monitor and assess changes in bank condition, and to incorporate those assessments into a firm’s security price if negative changes occur. This monitoring mechanism generates market signals that convey useful information to supervisors responsible for reducing a bank’s risk exposure.

The current accounting policy for the evaluation of financial instruments is the IAS 39, but the financial crisis has spread the belief that the accounting rules have helped to accelerate the deepening of the economic recession, mainly due to the excessive recourse to the use of fair value accounting for the account of financial instruments. In particular, they were highlighted delays in the surveys of losses on loans and financial assets, as well as its the improper use. Moreover, there was the risk of increasing the volatility profit or loss for the year. This led in 2014 to the adoption of IFRS 9, that will replace IAS 39, and it will endorsed on 1 January 2018.

IFRS 9 provides the recognition of a financial instrument at the moment of signing the contract. The recognition is at fair value, except for trade receivables, which are recorded at the transaction price of the agreement with the customer. The new principle

also introduces a new approach to the classification of financial instruments, including derivatives embedded in other financial instruments, based on cash flow and business model for which the asset is held, which allows us to obtain better information about the methods of realization of cash flows. This classification is called principle based and mitigates the difficulties of analysis related to IAS 39, which provides for the classification rules for the different categories.

As regards the impairment of receivables, the new model (expected loss model), differs significantly from the model in accordance with IAS 39. The “incurred loss model” model involves the recognition of the loss only when there is a negative event able to produce it. This approach is likely to be dangerous for an entity because, belatedly recognizing impairment on loans, it can distribute dividends to shareholders, even of components required to cover the risks of future losses. Hence, the occurrence of the loss, the bank does not have the resources needed to counter it, being forced to run for cover asking liquidity under disadvantageous conditions, leading to a worsening of the loss. The expected loss model instead considers the losses expected at the time of recognition and ascribes directly to the income statement during the life of the financial instrument and not when impairment occurs. The adoption of this policy, from 2018 will also allow a first step towards the harmonization of accounting rules on financial instruments issued by the IASB and the FASB.

1.5 Financial instruments risk disclosure in the banking sector: a literature review

In 2008, the Financial Stability Board emphasized that the banking sector often failed to disclose the magnitude of risk associated with bank products in a clear and easily accessible way (Oliveira et al., 2011). Also, analysts and regulators have expressed concern that bank financial statements do not adequately represent the underlying economics of financial investments, and financial reporting is likely to be more opaque than industrial companies’ (Anandarajan et al., 2011). The recent crisis confirms how investors do not have enough information to assess these risks, which led to a dramatic increase in funding costs (Ivashina and Scharfstein, 2010).

To this end, academics frequently have claimed the opacity with which financial institutions accumulated significant exposures to financial risks (Flannery et al., 2004; Siregar et al., 2013).

Although IFRS 7 is in force since 2007, a lack of transparency in risk reporting disclosures of banks is found in periods before its adoption but also after it.

The persistence of risk disclosure deficiencies reported after the adoption of IFRS 7 suggests that the G20 recommendations (that led to the Basel II Accord reforms, the Capital Requirements Directive (CRD), and IFRS 7 amendments) will lead to a socially desirable flow of information only if appropriate enforcement mechanisms are instituted to assure compliance with minimum disclosure requirements (Oliveira et al., 2011).

Nowadays, risk disclosure in the banking sector is under-researched (Wood et al., 2008).

The banking industry has a sub-optimal disclosure level because of their opaque nature (Diamond, 1984). Indeed, the Author argument about how disclosure can reduce the costly acquisition of information, and therefore explain how it can be considered a socially desirable good. Hence, greater levels of disclosure can reduce banking instability associated with socially undesirable “runs” on banks (Oliveira et al., 2011).

Studies by Flannery et al. (2004 and 2013) argue that if outside investors have difficulty valuing banks, then market microstructure theory suggests that bank stocks should have distinct trading characteristics, such as higher bid-ask spreads and less trading volume. In addition, the aforementioned Authors, provide some evidence that bank stocks have less market liquidity than comparable non-banks, particularly during the recent financial crisis. Furthermore, their results are driven by banks that are most likely to be opaque.

Opacity and reluctance of bank disclosure have also been explained in the framework of the traditional banking theory (Dobler, 2008).

Proprietary information i.e. on credit quality of private and firm customers reflects the core business of banks, which is based on the costly monitoring of debt contracts (Diamond, 1984). Since disclosure of this proprietary information would notably affect

the bank's profitability (Frolov, 2007) or cause crises (Cordella and Yeyati, 1998), too much disclosure is unlikely about credit risks (Bischof, 2009).

Moreover, scholars also argue that the regulatory framework on bank financial risk disclosure is formulated by a range of different bodies (the Basel Committee, the national banking supervisor and the local accounting standard board), hence this multitude of bodies and regulations increases banks informational complexity. Consequently, banks often oppose to requirements asking for higher disclosures because they determine significant costs (Mozes, 2002; Gebhardt et al., 2004).

It may happen that information accentuate situations of turbulence as the market is not able to distinguish vulnerable situations from those solid. Indeed, greater disclosure can increase the negative externalities by increasing the pressure on a bank that it does not healthy perceived by the market, thus contributing to its failure (Nagel, 2001).

The opacity, combined with the inconsistency of existing regulations, led to pressures on the IASB for the issuing of new standards, i.e. IFRS 7, in order to enhance related disclosure (Bischof, 2009) However, several scholars claim their skepticism on the potential benefits of an improved disclosure, suggesting that due to the complexity of many financial instruments, markets are unable to incorporate additional information in a beneficial way (Hodder et al., 2001; Hassan et al., 2009; Hassan and Mohd-Saleh, 2010; Siregar et al. 2013).

Generally speaking, the effect of mandatory disclosure can have mixed consequences. An increase of compliance cost can arise with mandatory disclosure, but, at the same time, positive externality in a perfectly competitive market could arise from increased liquidity and reduced costs of information. Therefore, entities that disclose full information could be used by investors as a guide to assess their performance and risks.

Some scholars like Baumann and Nier (2004) argue that banks with high disclosure level have less volatility in their share prices. At the same time, banks that disclose more information have a better capitalization (Baumann and Nier, 2003).

Nier (2005) argues that transparency reduces the chance of severe banking problems and thus enhances overall financial stability. In addition, Tadesse (2006) finds that

banking crises are less likely in countries with greater regulated disclosure and transparency. Specifically, banking systems are less vulnerable to crisis if supported by financial reporting regimes characterized by more comprehensive disclosure and more informative reporting.

However, if markets are imperfectly competitive, then increased disclosure may attract investors away from other entities, resulting in lower price efficiency (Bushee and Leuz, 2005; Hassan et al., 2009).

More recently, Blau et al. (2017) find that the process of intermediation is opaque and produces uncertainty about the riskiness of banks, which may adversely affect the efficiency of bank stock prices.

Studies on financial instruments risk disclosure in the banking sector also concerned both the impact of the III Pillar of Basel Agreement and IAS/IFRS (actually IFRS 7) because they are the mayor frameworks about financial disclosure in Europe.

The Basel Committee has published three studies to date¹ examining bank risk disclosures. The three disclosure studies adopt identical research methods, although the samples of banks surveyed differs between the three years. The survey instrument comprised a detailed list of 104 questions that the Basel Committee considered useful for their own disclosure review purposes and are grouped into 12 categories.

Evidence shows that banks provide more disclosure about capital structure, accounting and presentation policies, and other risks, particularly in quantitative form.

Banks with higher levels of risk have a greater incentive to demonstrate that they are actively monitoring and managing those risks and to ensure they are not penalized excessively by the market.

Furthermore, many Scholars have investigated the impact of the III Pillar on banks' risk disclosure.

¹ Public disclosures by banks: results of the 1999 disclosure survey (2001), Public disclosures by banks: results of the 2000 disclosure survey (2002), Public disclosures by banks: results of the 2001 disclosure survey (2003)

A recent study by Bischof (2013) posits that the improved banks risk disclosures translate into higher market liquidity around Pillar 3, but not around IFRS 7. The results indicate that the success of regulation depends on the institutional fit between regulator and regulatee, and that having multiple regulators may lead to inconsistent implementation and enforcement of the same rules. Hence, the disclosure increase is larger in countries where the banking regulator has more supervisory powers and resources, and is less involved in the general oversight of securities markets.

According to the Basel Committee, disclosure promotes financial stability because regular and continuous information may limit potential market disruption. In addition adequate public disclosure facilitates a more efficient allocation of capital between banks, as it helps the market accurately assess and compare the perspectives of risk and performance of individual institutions. It can bring high benefits to the bank because they disclose more information than provided by the law increases the management reliability (Nagel, 2001, Malinconico, 2007).

Linsley and Schrives (2005) have used the surveys from the Basel Committee on banks which were under Basel I and previous research on UK banks in a period from 1999 and 2001, concluding that disclosure requirements by the III Pillar is useful, but it not provides a comprehensive view of the entity's risk profile because it lacks forward looking information.

The problem with backward looking information is it is unreliable, so Authors suggest that additional information is necessary to the III Pillar information.

In 2006, Herting analyzed the disclosure about Internal Rating Based method (IRB) of a sample of European, Japanes and US banks and he found that banks have no incentive to disclose this information due to additional costs (Mozes, 2002).

Vauhkonen (2012) has studied the impact of the III Pillar of Basel II requirements on the banks safety by setting up a spatial competition model with four different types of agents: insiders, shareholders, depositors and a supervisory banking authority. The Author concludes that the introduction of the mandatory disclosure requirements, such as the III Pillar of the Basel II framework, may improve the safety of the banking

system and enhance the effectiveness of the (I Pillar) minimum regulatory capital requirements.

Another research conducted by Castren, Fitzpatrick and Sydow in 2009 focuses on credit exposure and other information on loan loss provisions in the annual reports of large European banking groups concerning the period from 2004 to 2005. The Authors analyzed the impact of macro-economic shocks on the Value at Risk (VaR), concluding that the shocks to Gross Domestic Product (GDP) have the most impact on credit risk of banks. In addition, the paper tests the information concerning the III Pillar of Basel II and found that disclosure was not complete, so banks were not fully compliant to the framework. It is the expectation of the researchers that with the implementation of IFRS 7 and the III Pillar of Basel II, these disclosures will increase the qualitative and the quantitative information provided by banks.

Studies before and after the adoption of high quality standards have reported conflicting levels of effect on risk management disclosures. PriceWaterhouse-Coopers (2006, 2008) found that IFRS 7 does not significantly affect the disclosure of risk management activities. However, Bischof (2009) and Woods et al. (2008) found otherwise.

Bischof (2009) claims that the introduction of IAS/IFRS that have increased the level of disclosure quality with better consequences on financial reporting transparency.

The aforementioned Author has argued that the introduction of IFRS 7 in the European banking system has had a positive impact not only on the quantity of information disclosed, but only on its quality. He has focused only on banks because the impact of the new standard is stronger in this sector than others because financial industries hold almost the 90% of financial instruments in their assets. A sample of 171 banks has investigated in 28 European Countries in a period from 2006 to 2007 (first year of IFRS 7 introduction). In a first step, only the quantitative impact has analyzed counting the number of pages in the risk report. In a second step, it has been analyzed the disclosure quality through an univariate analysis.

Overall, evidence shows that disclosure is far from perfect, indeed not all banks are complied with IFRS 7.

Indeed, Drago and Muzzacca (2005) have investigated the level of risk disclosure in the Italian banks. Their conclusions emphasize a lack of risk information because Italian banks perceive the expected benefits of the disclosure as minor than the costs. Similarly, Linsley et al. (2006) criticize that disclosure provided by IFRS 7 is essentially qualitative.

Also Malinconico (2007) analysis some informative characteristics related to financial risks in the Italian banking sector and concludes that auditors enhance disclosure commitments.

Maffei (2009) conducts a study on IFRS 7 in the Italian banking sector showing that these entities disclose sufficient information about the explanations of financial reporting and the reported amounts. The disclosure however is poor when it comes to administering information on risks, their impact on the balance sheet accounts and the possible ways of managing them.

Woods, Dowd and Humphrey (2008) researched the impact of market risk disclosure on the top 25 multinational banks in the world from 2000 to 2006. The aim of their study was to contribute evidence to the quality and to the convergence of the international reporting standards. The results shown that disclosure has slightly increased over time, but, comparing IFRS and local GAAP, evidence points out that disclosure on market risk decrease under IFRS.

Some studies (Yong et al., 2005 and Bischof, 2009) argue that only a small number of banks disclosed VaR results before and after the adoption of IFRS 7; others (Woods et al., 2004; Woods et al., 2008) report that disclosure deficiencies persisted after the adoption of IFRS 7 with consequent lack of transparency and less comparability of financial reports.

Boussanni et al. (2008) investigate liquidity risk disclosure in European banks finding that disclosures about contingency planning and internal controls were insubstantial and incomplete.

On the contrary, Frolov (2007) and Bischof (2009) argue that only credit risk disclosures presented optimal levels of mandatory compliance.

Oliveira et al. (2011) focus on credit risk and liquidity risk disclosure finding that the former is characterized by different time bands used in ageing analyses of past due assets and lack of detailed description of associated collateral; the latter is characterized by use of generic liquidity risk management statements, misaligned liquidity risk exposure and qualitative disclosures regarding management strategies to deal with those exposures, and the absence of sensitivity analysis of liquidity risk exposure.

On the contrary, Amoako and Asante (2013), and Hossain (2014) focus on compliance and conclude that banks are good at complying with the standard in the emerging markets of Ghana and Bangladesh, respectively.

More recently, Zango et al. (2015) conduct a study on banks IFRS 7 compliance in another emerging country (Nigeria), showing high level of compliance and positively relates with risk management committee effectiveness.

Finally, a study by Papa (2016) shows that, in general, the compliance with IFRS 7 disclosure requirements by financial statement preparers is inconsistent and incomplete. In many cases, these IFRS 7 risk disclosures have limited informational content that is decision-useful.

The Authors, through the administration of a questionnaire to a pool of 300 Chartered Financial Analyst (CFA) Institute members, has identified the weaknesses of the standard: 1) risk disclosures are difficult to understand; 2) qualitative disclosures provided are uninformative; 3) users have low confidence in reliability of quantitative disclosures; 4) there is low consistency and comparability of disclosures; 5) top-down and integrated messaging on overall risk management is missing.

Overall, it seems mainly that the adoption, i.e. of IAS/IFRS, has brought a greater flow of risk-related information, but has not ensured increased transparency.

Potential reasons are that IAS/IFRS are not aligned with the way financial companies manage risk, and that they are not bank-oriented standards (Oliveira et al., 2011).

The problem is that IAS/IFRS focus only on financial risk, ignoring other kinds of risks (such as operational risks) faced by banks. This misalignment can culminate in the

dispersal of risk reporting practices throughout an annual report, rendering them incomparable, and imprecise (Woods and Marginson, 2004; Woods et al., 2008).

Hence, the contribution of this thesis to the literature review consists in an improvement of value relevance of IFRS 7 in the European banking system. Indeed, this topic, on the best of our knowledge, is not fully studied in the value relevance field.

Chapter 2: Value relevance of financial instruments disclosure

2.1 Value relevance studies

Value relevance studies are included in “capital market research in accounting”. The first studies date back to the late 60's with Ball and Brown (1968), and Beaver (1968). Their studies were pioneering because introduced the positive accounting theory (PAT).

Over the past few years, even under the new international rules, studies on relevance value gradually increased. Some have tried to follow the impact of IAS/IFRS on accounting values, others to assess the relevance of accounting for intangible in order to understand the different areas of research, the purposes and methods of analysis adopted, it is appropriate to recall some classifications drawn up by various authors.

Referring to the purposes of the analysis, value relevance studies can be classified into two main categories: “Associations Studies” and “Event Studies” (Mechelli, 2013).

The “Association Studies” are to test the relation between the market value of a given company, expressed by the prices or stock returns, and the book values. As for the “Event Studies”, however, are to test whether the communication of new information could have a significant impact in their markets.

This study is among the association study, as I discuss in chapter 3.

Another classification was proposed by Holthausen and Watts (2001). The Authors, to facilitate their analysis, grouped the studies on the value relevance into three classes: relative association studies, incremental association studies (both belonging to association studies) and marginal information studies (belonging to event studies).

The association studies analyze the relation between book values and market values thanks to R^2 indicator². The higher the R^2 , the more value relevant is the information disclosed.

² R^2 is a statistical measure that indicates the proportion of the variance in the dependent variable that is predictable from the independent variable. $R^2 = 1 - \frac{SS_{res}}{SS_{tot}}$ that is the ratio between the sum of squares of residuals and the total sum of squares

The incremental association studies aim to analyze whether a given book value has greater explanatory power than the other variables included in the model. From a statistical point of view, a value is considered significant if the regression coefficient estimated results to be different from zero.

In the category called “marginal information content studies”, there are those analyzes to determine whether the occurrence of an event will generate a reaction in the markets, and therefore affect the company's value.

Another interesting classification was provided by Beaver (2002), who has developed a classification considering as a factor in the empirical models used in searches. The author identifies two possible categories where it is possible to classify the different types of studies: “Earnings only approach” and “Balance sheet approach”.

In the first, they fit those studies aimed at analyzing the association between market values and operating income. In the “Balance sheet approach”, taking as reference the Ohlson model, there are surveys that consider the association between accounting and income values with the company's market value.

Liu and Liu (2007) define value relevance as the capacity of accounting number to incorporate information about stock prices.

Beisland (2009), however, identifies four categories in which to place the research:

- a) Value Relevance of earnings and other flow measures, such as net income and cash flows.
- b) Value Relevance of equity and other stock measures, such as the book value of equity.
- c) Value Relevance over time. Here we put all of those investigations to consider any change of importance of financial reporting over the years.
- d) Value Relevance of alternative accounting methods. Here are those research aimed at analyzing the different relevance of book values, depending on the accounting rules adopted.

Hellstrom (2006), instead, prefers to make a classification considering as a discriminating factor in the calculation methods of the value relevance. The Author, in fact, distinguishes the studies between “signaling perspective” and “measurement perspective”.

In the first perspective, we find that research that consider the market reaction to the occurrence of certain events (in this context, reference is made to the disclosure of economic-financial information); in the latter, however, we find research that explore the statistical association between equity and book value prices.

Overall, beyond the different classifications proposed by different Authors, which will surely help to better understand the studies on value relevance, it seems that the classification more used is between “Event Studies” and “Association Studies”.

Furthermore, there are also some definition in the literature about value relevance. The most common definition is that provided by Barth (2000). According to the Author, a book value is value relevant if it contains information that affect market decisions. It is clear that, according to this view, the variable which tests the existence of a statistically significant relation with the book values is the price.

According to other Scholars (Aboody et al., 2002) the “value relevance is the mapping from accounting information to intrinsic value, i.e. the present value of expected future Dividends conditional on all available information” (p.966).

As aforementioned, many Scholars prefer the definition provided by Barth because the value of economic capital is a factor estimated based on discounting the expected results of the company, the price, however, is the result of supply and demand (Mechelli, 2013).

A definition similar to that of Barth is provided by Holthausen and Watts (2001), but unlike Barth, the Authors argue that value relevance research does not provide insights into questions of interest to standard setters. In Holthausen and Watts’ view value relevance research is “useful to standard setters only if the underlying theories are descriptive (in the sense of explaining and predicting accounting, standard setting and valuation). Without descriptive theories to interpret the empirical associations, the

value-relevance literature's associations have limited implications or inferences for standard setting; they are just associations"³.

In response to the aforementioned Authors, Barth et al. (2001) issue a paper explaining why value relevance studies offer important insights to standard setters. First of all, although an important impediment keeping the value-relevance literature from contributing more to standard-setting debates is its lack of a theory that has some potential to explain accounting and standard setting, the Financial Accounting Standards Board (FASB) articulates its concept of accounting and standard setting in its Conceptual Framework. Indeed, relevance and reliability are the two primary criteria the FASB uses for choosing among accounting alternatives, so value relevance represent one approach to operationalizing the FASB's stated criteria of relevance and reliability (Barth et al., 2001, p. 4).

Another definition of value relevance is given by the Institute of Chartered Accountants in England and Wales (ICAEW): "value relevance studies look at the relationship between financial reporting information and share prices or changes in share prices" (ICAEW, 2015).

In this work, I adopt the definition by Barth because value relevance research provides insights into questions of interest to standard setters and users because a primary focus of the FASB and investors is equity investment. In addition, the results provided by value relevance studies are based on strong empirical models, despite their simplifying assumptions.

2.2 Value relevance of accounting principles: a literature review

As early as the 60s arise the effects of dissatisfaction than previous research settings. The change in pressure led to that which will be defined "empirical revolution" (Wells, 1976).

As aforementioned, the positive accounting theory (PAT) deals extensively with to value relevance studies thanks to Ball and Brown study (1968). They examine the

³ Holthausen, R. W., & Watts, R. L. (2001). The relevance of the value-relevance literature for financial accounting standard setting, p.2

information content of accounting information in relation to the equities market prices. The hypothesis at the base of the survey is that if the financial information is useful to financial market, then it must be incorporated in the stock price. Otherwise, or the information disclosed is irrelevant or has already been incorporated previously in investors' decisions. The market price are therefore considered indicators of corporate disclosure usefulness.

Similarly, Beaver (1968) studied the relation between earnings announcements and stock market prices. In both works, the “if” and “how” information on the financial results are reflected in equity prices is carried out starting from an experimental analysis, using the analytical models developed in the fields of Economics and Finance.

The PAT is initially coined by Watts and Zimmerman in 1978. The Authors give the right view of the Agency Theory problems argued by Jensen and Meckling (1976). These problems arise because one party to a potential transaction has more information than another (Arrow, 1963; Akerlof, 1970; Spence, 1973; Stiglitz, 1975). Authors such as Gonedes et al. (1976) and Godenes (1978) suggest that this problem is applicable to accounting information.

From these approaches emerges the contractual nature of the relationships that link the parties involved in the company and the context of asymmetric information with management that is in advantage position over outsiders (investors and lenders especially) which can not directly observe the actual achievement process corporate performance.

In this theoretical framework, an important contribution by Feltham and Ohlson (1995) has highlighted the importance of PAT. They have investigated the relation between accounting numbers and market values based on the residual income, concluding that market value depends on book values and expected earnings. This study has lead to the value relevance ones that analyze different models to verify the relation between book values and market values.

According to many Scholars, it can possible define a financial reporting as transparent if it allows readers to understand the reporting firm's financial performance and financial position (Barth and Schipper, 2008). It can possible investigate this characteristic

through 1) investment analysts' forecasting ability; 2) value relevance and 3) accounting quality.

I focus on value relevance because the aim of this study is to analyze if investors perceive as relevant financial instruments disclosure. In other words, if the information disclosed suggests them appropriate risk levels to their investment decisions.

There have been so many studies looking at the effects on value relevance of mandatory IFRS adoption in relation to equity markets (ICAEW, 2015, p.31).

Platikanova and Nobes (2006) look at the information asymmetry component (AIC) of the bidask spread to assess value relevance in European countries from 2003 to 2005. They conclude that the AIC component of the bid-ask spread does not decrease after IFRS adoption.

Wang et al. (2008) find evidence that the value relevance of earnings increases after mandatory IFRS adoption.

Morais and Curto (2009) compare the value relevance of net income and equity book value under local GAAP and voluntary IFRS adoption (2000–2004) and under mandatory IFRS adoption (2005). They find that the value relevance of financial information during the period companies applied mandatory IAS/IFRS is higher than for the period during which they applied local accounting standards.

Devalle et al. (2010) report that value relevance of earnings has increased under IFRS, while value relevance of book value of equity has decreased.

Agostino et al. (2011) have investigated the value relevance of IFRS in the European banking industry and find that the value relevance of equity book value increases for banks that are larger and that are rated (i.e., by credit ratings agencies).

Azzali et al. (2012) have tested the value relevance of IAS/IFRS in Italy. Their results show the value relevance of book value of equity and ROE increases with IAS/IFRS, while the Other Comprehensive Income (OCI) is not value relevant for investors.

Similar to this study, Bonetti et al. (2012) have investigated the relevance of IFRS 7 but they focus only on one type of risk (the currency one) in a single country (Italy), while

this thesis goals is to test the value relevance of financial instruments risk disclosure (i.e. credit risk, market risk and liquidity risk), as required by IFRS 7 in the European setting.

There are also many studies that do not consider value relevant the IAS/IFRS introduction, such as Aubert and Grudnitski (2011) who does not find value relevant the information produced under IFRS.

Similarly, Paananen and Lin (2009) have demonstrated that earnings and book value of equity are becoming less value relevant during the mandatory IFRS period in Germany from 2000 to 2006.

Oliveira et al. (2010) find that IAS/IFRS do not have effect on the value relevance of the book value of equity, while the value relevance of earnings decreases with IAS/IFRS.

Karampinis and Hevas (2011) have claimed that do not have sufficient empirical evidence to support that mandatory IFRS adoption had a positive impact on the value relevance of accounting earnings reported by Greek firms.

Barth et al. (2011) find that US GAAP amounts are more value relevant than IFRS amounts before and after their adoption.

Also Christensen et al. (2015) find no improvement in value relevance for mandatory IFRS adopters in Germany.

Furthermore, there are many studies that have focused on the value relevance of disclosure, like Banghoj and Plenborg (2008) that tested the voluntary disclosure in annual report in order to investigate if this type of information has a positive impact with actual and expected results. The Authors concluded that voluntary disclosure is not value relevant. In contrast with them, Lundholm and Myers (2002), and Gelb and Zarowin (2002) have demonstrated that voluntary disclosure is value relevant for investors.

Other Scholars, such as Clarkson et al. (2011), have investigated the differences in value relevance between code law and common law showing similar levels of value relevance.

In the American field, instead, Barth, Beaver and Landsman (1996), have analyzed the value relevance of fair value, as required by SFAS 107 in a period between 1993 and 1994. In contrast with Nelson and Eccher (1996), the aforementioned Scholars have concluded that SFAS 107 has positively affected the banks' stock prices.

Also Khurana e Kim (2003) have checked the value relevance of fair value and historical cost and have argued that for bank holding companies, historical cost is more value relevant than fair value, while, fair value is more value relevant in the case of available for trading assets.

Barth et al. (2014) look at information disclosed for 2004, on domestic GAAP and IFRS. The sample is divided into three country groups: English, Scandinavian and French/German. The authors conclude that the net income and book value adjustments to IFRS for 2004 are value relevant, in particular for financial firms.

2.3 Review of empirical models

In order to test the value relevance in the accounting field, Scholars use statistical methods based on regression. The dependent variable is represented by market values (prices, returns, etc.), while the independent variables are the annual report's values.

Scholars use to adopt two different models: price models, return models and balance sheet models.

Price models investigate the relation between market prices and accounting values. Return models examines the relation between returns and accounting values. Balance sheet models are very similar to the price model, but does not include earnings as independent variables.

The most important model among price models has been developed by Ohlson (1995), while the return model most used has been developed by Easton and Harris (1991). What is the best one is a difficult choice because many Scholars argue that the two

models are complementary, others prefer price ones, others believe that returns ones have less econometric problems.

Generally speaking, price models have more econometric problems because of the scale effect problems produced by a heterogeneous sample in terms of size.

In addition, price model goals is to test if an accounting number is relevant in firms valuation. Instead, the return models test the timeliness of an accounting information (Kothari and Zimmerman, 1995). Regarding balance sheet models, it is impossible to assume that all firms in the sample have returns in line with the market, so their use is questionable.

2.3.1 Price models

The assumptions of Ohlson model are: 1) the value of an enterprise is equal to the net present value of expected dividends; 2) the clean surplus relation is satisfied; 3) the abnormal returns have a linear autoregressive process.

In developing his model, Ohlson adopts Discounted Dividend Model (DDM): the value of a company turns out to be equal to the present value of expected dividends. This assumption may be expressed through the following relation:

$$P_t = \sum_{\tau=1}^{\infty} R_f^{-\tau} E_t [d_{t+\tau}] \quad [a]$$

Where:

P_t = market value of the company at time t

$d_{t+\tau}$ = net dividends paid at time t

R_f = yield on risk-free investments

$E_t [d_{t+\tau}]$ = expected value based on available information

Ohlson, to simplify the model, assumes to operate in a neutral environment at risk, so as to use a risk-free rate.

A second assumption underlying the model is the principle of clean surplus relation. On the basis of this principle the income in a given is equal to the difference between the

net assets of the same year and the net assets of the previous period, net of inter-company transactions and members.

Ohlson, thanks to the clean surplus relation and to Dividend Discount Model, can express the company's value in an alternative way. Taking into account the net assets and the present value of expected abnormal earnings.

May be identified two groups of studies that have reformulated this model. The first includes all those publications that have attempted to empirically validate the assumptions of Ohlson applying theoretical models to listed companies, with the aim of verifying the existence of a possible relationship based on experience and theoretical models. The second compares results of the empirical obtained with other valuation models.

Ohlson shows that are already known in the accounting literature the principle that the value of a company is equal to the present value of future dividends and the principle of clean surplus. Together, they allow to define the economic value of an entity.

This theory is summarized in the following equation:

$$P_t = y_t + \sum_{\tau=1}^{\infty} Rf^{-\tau} E_t [x_{t+\tau}]^{-a} \quad [b]$$

Where

$[x_{t+\tau}]^{-a}$ it is abnormal income in the period from $t+1$ to ∞ .

According to this equation, the value of a company is being equal to the book value of equity more the abnormal returns.

It is considered normal a return at least equal to the cost of capital.

The third and final assumption of the basic concerns of the model is about the abnormal returns.

Ohlson is believed what abnormal returns follow a autoregressive trend, i.e. that the abnormal return let those related to the previous period. On the basis of this assumption,

abnormal returns depend both the previous period and some pieces of relevant information that has not already have an economic consequence.

As aforementioned, it is possible calculate the following equation:

$$\begin{aligned} X_{t+1}^a &= \omega X_t^a + v_t + \varepsilon_{1t+1} \\ v_{t+1} &= \gamma v_t + \varepsilon_{2t+1} \end{aligned} \quad [c]$$

where:

ω is the variable that binds the abnormal return (or excess return) for the period t whit those subsequent.

v_t is relevant information, but not yet recognized in the annual report as they are the future economic event.

γ is the variable that binds the period t whit those subsequent.

ε is the residual.

According to Ohlson, the parameters ω and γ are constant over time as employees from the economic environment and the accounting rules adopted.

As noted by Kothari (2001), the real importance of the autoregressive process of super-profits, is that competitive pressure brings the excess return to its normal level. Thus, the stronger the competitive pressure the greater will be the rate of reduction of excess return and consequently, the lower will be ω .

As aforementioned, the first formulation of the Ohlson model is the following:

$$P_t = y_t + a_1 X_t^a + a_2 v_t \quad [d]$$

Where:

$$a_1 = \frac{\omega}{Rf - \omega} \geq 0$$

$$a_2 = \frac{Rf}{(Rf - \omega)(Rf - \gamma)} \geq 0$$

This equation indicates that the market value of a company is equal to the book value of equity correct for the current profitability, (the latter measured by the abnormal returns) and other information that modify the expected profitability.

The model proposed by Ohlson, was considered to be of major importance and has been the subject of several revisions over the years by Scholars. One of the major reformulations of this model is represented by the following relationship:

$$MV_{it} = a_0 + a_1BV_{it} + a_2NI_{it} + u_{it} \quad [e]$$

Where:

MV_{it} is the market value of an entity in the period t

BV_{it} is the book value of equity of an entity in the period t

NI_{it} is the net income of an entity in the period t

u_{it} is the error

A variant of this equation can be obtained by dividing each term by the number of outstanding shares, thus having the following other equation:

$$P_{it} = \beta_0 + \beta_1 BVPS_{it} + \beta_2 NIPS_{it} + \varepsilon_{it} \quad [f]$$

Where:

P_{it} is the stock price of an entity in the period t

$BVPS_{it}$ is the book value of equity per share of an entity in the period t

$NIPS_{it}$ is the net income per share of an entity in the period t

ε_{it} is the residual

It can be observed that, while the Ohlson model aims at analyzing a single company, its reformulations, however, are concerned with different companies.

A second difference concerns the variable “other information”. Indeed, this variable is present in the Ohlson model, but it is often omitted by Scholars in their analyzes. If this

variable had a significant impact in its assessment of the company and a strong correlation with the other variables included in the model, its omission could lead to a distorted values and consequently also the regressive coefficients β can be distorted.

Finally, a third difference relates to the dividend paid in a particular year. Recall that while the Ohlson model is based on Dividen Discount Model (DDM) that the company's value is the present value of expected dividends, this same variable, however, is omitted in the reformulations made by the researchers as part of their analysis.

As in the case of the variable "other information", if these dividends had the more or less significant correlations with other variables in the model, their absence may cause distortions in the values of the two coefficients β (Hand and Landsman, 1998).

2.3.2 Returns models

Among the models for studies on value relevance in addition to the "Price Models", mainly represented by the Ohlson model (1995), there are also the "Return Models", models that try to check for a possible association between the returns of the shares and the annual report values. In this context, the model that took on greater significance, is certainly the one proposed by Easton and Harris in 1991.

The goal of their analysis was to check whether the level of income, divided by the price of the shares at beginning of year, is relevant in the evaluation of the association between returns and income. In other words, the Authors were trying to determine whether the performance of the shares (the dependent variable) depends to income and its variations (independent variables).

At the basis of their studies, there is the idea that the book value of equity and the market value of the variables are "stock", that is, variables that indicate the shareholder wealth. The variables "flow" used are the yields and income, or its variation divided by the share price at the beginning of a financial year (A/P-1).

Their study is based on the book value valuation model and the earnings valuation model. The former checks whether the market value, represented by the stock price, depends on a book value of equity. In this case they take into account the relation between variables "stock." This relation is represented by the following equation:

$$P_{jt} = BV_{jt} + u_{jt} \quad [g]$$

Where:

P_{jt} is the price per share of an entity in the period t

BV_{jt} is entity the book value of equity in the period t

u_{jt} is the difference between P_{jt} and BV_{jt}

The difference between the price per share and the book value of equity may be caused by several factors, such as the adoption of conservative principles that tend to reduce the value of the equity or result from the presence of information embedded in the stock price but they have not yet had an accounting event.

The relation between flow variables, however, is given by the variation of the same observed in the previous equation:

$$\Delta P_{jt} = \Delta BV_{jt} + 'u_{jt} \quad [h]$$

Where:

ΔBV_{jt} is the variation entity the book value of equity in the period t

This book value of equity variation can be summarized as follow:

$$\Delta BV_{jt} = A_{jt} - d_{jt} \quad [i]$$

Where:

A_{jt} is the earning per share of an entity from period t-1 to period t

d_{jt} is the dividend paid by an entity from period t-1 to period t

In this case we are referring to the principle of the "clean surplus relations", according to which the change in shareholders' equity is equal to the income earned net of transitions made by the company to shareholders (in this case, the dividends).

Substituting in the equation [h] the equivalent value of ΔBV_{jt} and dividing all the terms for the price of shares at beginning of year, we get:

$$\frac{(\Delta P_{jt} + d_{jt})}{P_{jt-1}} = A_{jt} / P_{jt-1} + u_{jt} \quad [j]$$

The earnings valuation model is an alternative view, in which considering the price per share as a multiple of the same income. The equation is the follow:

$$P_{jt} + d_{jt} = \rho A_{jt} - v_{jt} \quad [k]$$

Where:

P_{jt} is the price per share

d_{jt} is the dividend paid for each share

ρ is the multiple, equal to the reciprocal of the expected rate of return

A_{jt} is the earning per share

v_{jt} is the error

Assuming that there are no dividends paid to t-1 time but only at time t, the equation becomes:

$$\frac{(\Delta P_{jt} + d_{jt})}{P_{jt-1}} = \rho [\Delta A_{jt} / P_{jt-1}] + v'_{jt} \quad [l]$$

Where:

$\frac{(\Delta P_{jt} + d_{jt})}{P_{jt-1}}$ is the return of an entity

$[\Delta A_{jt} / P_{jt-1}]$ is the earning divided by the price of the shares at the beginning of period t-1

From the equation [l] shows a linear relation between changes in income, divided by the share price at the beginning of the period, and the returns over the period.

Scholars, noting that the share price of many companies is a function both of the book values and earnings, combine both valuation models (book value valuation model and earnings valuation model) in the assessment of prices (returns) of an entity. By combining the expressions [j] and [l], we have:

$$\frac{(\Delta P_{jt} + d_{jt})}{P_{jt-1}} = k\rho[\Delta A_{jt}/P_{jt-1}] + (1-k)[A_{jt}/P_{jt-1}] + w_{jt} \quad [m]$$

Where:

k is the factor that weighs the contribution of the change in earnings compared to the levels of earnings, in explaining stock returns.

The expression [m] is the most widely used model by Scholars in the course of their analysis.

The model proposed by the Authors is based on the idea of being able to evaluate the equity returns through a weighted arithmetic mean values of different nature, because some assets are better evaluated through capital values, others, instead, through income source values.

2.3.3 Balance sheet models

The balance sheet model has been used by some Authors since the second half of the 80s, such as Barth (1991) and Landsman (1986)⁴. It is very similar to the price model, but does not include earnings as independent variables.

The basic assumption of the model is that the value of an enterprise can be expressed by the sum of the value of assets and liabilities:

$$MKT = MVA + MVL \quad [n]$$

Where:

MKT is the market value of an entity

MVA is the market value of assets

MVL is the market value of liabilities

⁴ Barth, M. E. (1991). Relative measurement errors among alternative pension asset and liability measures. *Accounting Review*, 433-463; Landsman, W. (1986). An empirical investigation of pension fund property rights. *Accounting Review*, 662-691.

The most common form in which this methodological proposal is used in the traditional researches on the value relevance is the following:

$$\text{MKT}_{jt} = \alpha_0 + \alpha_1 A_{jt} + \alpha_2 L_{jt} + \alpha_3 I_{jt} + \varepsilon_{it} \quad [o]$$

Where:

MKT_{jt} is the market value of an entity in the period t

A_{jt} is book value of assets

L_{jt} is book value of liabilities

I_{jt} is book value of the item to study in order to verify the value relevance.

If the coefficient α_3 is significantly different from zero, the variable is value relevant for financial market.

An important limit of balance sheet model is that assets and liabilities of balance sheet do not reflect values of all assets and all liabilities, which include potential synergies and other intangibles that are not reflected in firm value (Barth, 2000).

In addition, this model holds if the firm is earnings competitive rate of return on its net assets (Holthausen and Watts, 2001).

In order to avoid the aforementioned problems, some Scholar have proposed to add the goodwill among the independent variables to summarize items' synergies, but Holthausen and Watts (2001) have argued that the introduction of goodwill makes the model hold tautologically. In this case, independent variables are often included in the regression to proxy for goodwill, but goodwill is not a separate economic asset, being merely the difference between the market value of equity and the value of net assets (Holthausen and Watts, 2001, p. 51). In other words, only if the company produces returns in line with the cost of capital, the asset information is sufficient to explain its market value.

It follows that it is impossible to assume that all firms in the sample have returns in line with the market, so the use of the balance sheet model is questionable.

For this reason, it is necessary to insert also earnings to test the value relevance in order to enhance those assets or those synergies that create abnormal returns on investments.

2.4 Background on the value relevance of financial instruments in the banking sector

In this section, I analyze the literature about the value relevance of financial instruments, topic that has been widely used in recent years due to: 1) the increased globalization of financial markets that has claimed for more standardization of accounting practices at international level; 2) the significant increase in international investments has necessitated the need for more reliable and informative financial statements on a global basis (Anandajaran et al., 2010).

The majority of studies on value relevance of financial instruments have been conducted in the American setting. The most studied is the banking sector because the majority of its assets consists of financial instruments, therefore, by its nature, it is exposed to a massive amount of financial risks.

Following the studies that have dealt with the relevance of financial instruments in the banking sector.

Venkatachalam (1996) has investigated the value relevance of fair value banks' off balance derivatives used for risk management purposes, as required by SFAS 119. The Author document that this type of information in the annual report is value relevant for financial market, in particular he has analyzed the disaggregated disclosure on contractual/notional amounts for off balance sheet instruments suggesting that there is value for disaggregated information. Furthermore, the study has given evidence about the association between fair value gains and losses on risk management derivatives and fair value gains and losses for on balance sheet items, suggesting that only 47% of banks use derivatives for hedging purposes. Similar evidence on off balance sheet derivatives are conducted by Schrand (1997) who, using a sample of publicly traded savings and loan associations, provides evidence that off balance sheet derivatives activities are positively associated with lower stock price interest rate sensitivity.

Barth et al. (2006) has tested the value relevance of fair value disclosure on financial instruments under SFAS 107 in the banking industry. The study has revealed that the fair value of securities provide relevant information for financial market. In particular, the fair value disclosure of loans provides relevant information for investors if it is supplemented with those about the interest sensitivity of the loans and about the bank's financial health.

Similarly, Eccher et al. (1996) have examined the value relevance of fair value data disclosed under SFAS 107 by holding banks. In other words, the study's goal is whether fair value disclosures mandated by SFAS 107 have incremental association with market value over and above information disclosed in banks' financial statements prior to SFAS 107. The Athors have found that the fair value of net loans has a weaker association with market to book ratio than does the fair value of securities. While the off balance sheet instruments are value relevant in limited settings, Authors find no significance for the fair value of deposits due to the exclusion of core deposit intangibles in the valuation of them under SFAS 107.

Nelson (1996) has evaluated the association between the market value of banks' common equity and fair value estimates disclosed under SFAS 107. The results suggest that only the reported fair values of investment securities have incremental explanatory power relative to book value. There are not reliable evidence of incremental explanatory power for the fair value disclosures of loans, deposits, long term debt or net off balance sheet financial instruments. In addition, the Author has argued that studies which demonstrate the poor quality of the disclosed information are affected by measurement error or management manipulation, main responsible for its limited usefulness to investors.

The study conducted by Choi (2007) examines the association between a firm's bank dependence and the value relevance of the income statement by investigating the income statement conservatism of firms with bank loans. The Author concludes that the value relevance of the income statement is increasing in a firm's bank dependence. Moreover, the usefulness of the income statement varies with a firm's bank dependence, indicating that the value relevance of the income statement is a function of a firm's debt financing decision.

Anandajaran et al. (2010) demonstrate that value relevance is affected by “transparency” or disclosure requirements of a country’s standards boards. To measure transparency they use an index developed for each country by the Center for International Financial Analysis and Research (CIFAR). The Authors analyze other macro variables, such as corporate and legal environment, financing and economic environment, market competition, bank regulatory, relative risk. They find that the value relevance was more significant in countries that required greater disclosure of financial information and for riskier banks.

Hassan and Mohd-Salehn (2010) investigate whether financial instrument disclosure requirements are value relevant in Malaysia. Overall, results indicate that firms should provide high quality information since it is useful for investment decision, but financial instrument disclosure is less value relevant in the period when the standard becomes mandatory.

Other studies focused on the value relevance of recognition vs disclosure. With no claim to completeness, Ahmed et al. (2006) have conducted a study on the value relevance of banks’ derivative financial instruments recognized and disclosed prior and after SFAS 133, in order to demonstrate that recognition and disclosure are not substitute. They conclude that the valuation coefficients on recognized derivatives are significant whereas the valuation coefficients on disclosed derivatives are not significant. In contrast with Ahmed et al., Bratten et al. (2013) provide evidence that disclosed items are not processed differently from recognized items when the disclosures are salient. Kun Yu, instead, examines whether institutional ownership and analyst following affect the value relevance of disclosed versus recognized pension liabilities under SFAS 158 and conclude that the value relevance of disclosed off balance sheet pension liabilities increases. Lastly, Muller et al. (2015) examine pricing differences across recognized and disclosed fair value using a sample composed by European real estate firms reporting under IFRS. Consistent with prior research, they predict and find a lower association between equity prices and disclosure about investment property fair values.

Other studies, instead focus on the risk relevance of financial instruments disclosure. For example, Jorion (2002) provides preliminary evidence on the informativeness of

VaR disclosures about financial instruments exposed to market risk. He has investigated the relation between the trading VaR disclosed by a small sample of U.S. commercial banks and the subsequent variability of their trading revenues. The empirical results suggest that VaR disclosures are relevant in that they predict the variability of trading revenues. Thus, analysts and investors can use VaR disclosures to compare the risk profiles of banks' trading portfolios. In addition, Liu et al. (2004) find that these results are more significant for the largest, more technically sophisticated banks that are better able to estimate VaR, and they have strengthened over time as VaR becomes better measured by firms and understood by users of financial reports. Similar conclusions have been argued by Lim and Mui-Siang Tan (2007) who argue that VaR disclosures provide useful information to investors in assessing the informativeness of earnings.

Hodder (2002) finds that commercial banks' interest rate sensitivity disclosures are not associated with future changes in income or fair value, conditioning on actual changes in market factors, but that their simpler regulatory repricing gap disclosures are so associated. She interprets her results as suggesting that information about risk may be lost due to banks' modeling assumptions embedded in the estimation of these sensitivity disclosures.

More recently, however, Pérignon and Smith (2010) find that banks' VaR does not predict the variance of trading income, a change from prior findings that they ascribe to banks' increasing tendency to estimate VaR using historical simulation.

With regard to the value relevance of financial instruments affected by credit risk Bhat et al. (2012) provide evidence that banks with better credit risk modeling disclosures (estimation of credit loss parameters based on current loan status and underwriting criteria) on average have desirable attributes, suggestive of lower risk, so they are value relevant for financial market.

Regarding liquidity risk, instead, most accounting research examines samples that include no financial firms and does not focus on financial instruments, so for this reason we will not be investigated in this study.

2.5 The development of hypotheses

The capital market research topics of primary interest to academics is the test of market efficiency with respect to accounting information, fundamental analysis and accounting-based valuation, and value relevance of financial reporting (Kothari, 2001).

According to Kothari (2001) accounting reports reflect information that influences security prices, although not on a timely basis. He categorizes the demand of this research into five main areas: (i) methodological capital markets research, (ii) evaluation of alternative accounting performance measures, (iii) valuation and fundamental analysis research, (iv) tests of market efficiency, and (v) value relevance of disclosures according to various financial accounting standards and economic consequences of new accounting standards. These research areas arise from PAT (Watts and Zimmerman, 1986) that predicts that the use of accounting numbers in compensation and debt contracts and in the political process affects a firm's accounting choices. Indeed, they state that the objective of accounting theory is to explain and predict accounting practice.

Following Keynes' (1891) definition of positive science as "a body of systematized knowledge concerning what is", Friedman (1953, p.7) describes positive science as "the development of a 'theory' or 'hypothesis' that yields valid and meaningful (i.e., not truistic) predictions about phenomena yet to be observed".

Most accounting research since Ball and Brown (1968) and Beaver (1968) is always more positive and less normative. These Authors are the former who introduce the value relevance studies according to PAT. They examine the information content of accounting information in relation to the equities market prices. The hypothesis at the base of the survey is that if the financial information is useful to financial market, then it must be incorporated in the stock price. Otherwise, or the information disclosed is irrelevant or has already been incorporated previously in investors' decisions. The market price are therefore considered indicators of corporate disclosure usefulness.

Watts and Zimmerman's work was the impulse for other important studies conducted by Jensen and Meckling (1976) and Ross (1977) that altered the course of the corporate finance literature.

Jensen and Meckling (1976) analyze the implications of the agency problem between a firm's shareholders (principal) and the management (agent) and between shareholders and bondholders in an informationally efficient capital market. The agency problem arises in part because of the imperfect observability of managerial effort and costly contracting. Hence, the manager (agent), who should serve the interest of the shareholders (principal), tries, instead, to maximize his personal wealth. This information opacity affects the economic operators' ability to assess appropriate risk levels according to their risk appetite.

In particular, the information opacity of credit intermediaries is often caused by both managerial opportunism phenomena and by excessive cost of disclosure. The predominant literature, indeed, claims that there are many advantages of a good disclosure that results in reduction of the cost of capital (Diamond and Verrecchia, 1991), easy access to funds (Linsey and Schriber, 2005), creation of more stability in the whole banking industry and consequent reduction of systemic risk (Nier and Baumann, 2006), and effective tool for avoiding banking crises (Financial Stability Board, 2012). However, other authors argue that there are some disadvantages related to the excessive disclosure due to the complexity of banks' business because markets are unable to incorporate additional information in a beneficial way (Hodder et al., 2001; Hassan et al., 2009; Hassan and Mohd-Saleh, 2010; Siregar et al. 2013). In addition, banks often oppose to requirements asking for higher disclosures because they determine significant costs (Mozes, 2002, Gebhardt, 2004).

Nowadays, the increase globalization of financial markets has claimed for more standardization of accounting practices at international level. Moreover, the significant increase in international investments has necessitated the need for more reliable and informative financial statements on a global basis (Anandajaran et al., 2010). Indeed, disclosure is a tool of overcoming the limits of the financial reporting. Financial operators use to say "Selling equity is selling story", i.e. to sell the security necessary to sell the story relating to the company and its competitive environment. However, due to imperfections, or externalities, of financial market, investors are not able to assess entities' value and consequently to evaluate appropriate investments. Information

problem arises from information differences, so disclosure is critical for the functioning of an efficient capital market (Healy and Palepu, 2001).

The importance of risk disclosures as a tool of helping users to understand the risks associated with on - and off - balance sheet items has been accentuated in the last years (Maffei et al., 2014). The consequences of limited transparency regarding financial instruments risk exposure have highlighted the opacity of annual reports, leading to the mispricing of risk and misallocation of capital, and affecting investors ability to assess their investment decision.

Hence, the usefulness of financial instruments risk disclosure is an important tool of helping users to understand the risks associated with on - and off – balance is an evident question for the scientific community, indeed the consequences of the lack of transparency related to financial instruments, already to their complex nature, are now known.

The banking sector is particularly concerned in financial instruments risk disclosure issue, especially during the last financial crisis (Woods et al., 2008; Gebardht et al., 2014). Indeed, banks' financial reports assumes a dual function: it must guide the choices of financial operators; it is subject to control by the supervisory bodies, in order to ensure the proper functioning of markets (Maffei, 2010). To prosecute these aims it is necessary that the banks financial reporting deal with in a broad and comprehensive way the risks associated with its brokerage business, which is increasingly addressing to financial instruments (Ruozi, 2015).

In recent years, policy makers such as the International Accounting Standards Board (IASB) and the Basel Committee on Banking Supervision (Basel) have taken significant steps to improve market reporting, with IFRS 7 and the III Pillar of the revised Framework for International Convergence of Capital Measurement and Capital Standards.

Some scholars (i.e. Bischof, 2009) argue that financial reporting transparency improves in European banking sector under IFRS 7 and claim for more studies on the value relevance of financial instruments risk disclosure for investors. Now, IFRS 7 is the only

principle in force about FIRD, so it is the only accounting policy that has had an impact on the financial markets.

Currently academic empirical research on IFRS 7 mostly concentrated on compliance and relevance on selected type of risk disclosure (Maffei, 2009; Amoako and Asante, 2013; Hossin, 2014; Zango et al., 2015; Papa, 2016). Therefore, this study is different from previous ones because it focuses on all types of financial risk information under IFRS 7 (credit, market and liquidity risks) in the bank sector of the European market. Existing studies on IFRS 7 show mixed evidence. PriceWaterhouse-Coopers (2006, 2008) found that IFRS 7 does not significantly affect the disclosure of risk management activities. Similarly, Linsley et al. (2006) criticize that disclosure provided by IFRS 7 is were essentially qualitative.

Also Maffei (2009) states that the disclosure however is poor when it comes to administering information on risks, their impact on the balance sheet accounts and the possible ways of managing them.

Lastly, a study by Papa (2016) shows that, in general, the compliance with IFRS 7 disclosure requirements by financial statement preparers is inconsistent and incomplete.

However, Bischof (2009) and Woods et al. (2008) found otherwise: IFRS 7 wa the necessary next step to ensure more transparency in financial market, especially with regard to banks.

Amoako and Asante (2013), and Hossain (2014) focus on compliance of IFRS 7 and conclude that banks are good at complying with the standard in the emerging markets of Ghana and Bangladesh, respectively.

More recently, Zango et al. (2015) conduct a study on banks IFRS 7 compliance in another emerging country (Nigeria), showing high level of compliance and positively relates with risk management committee effectiveness.

Overall, evidence shows that disclosure is far from perfect, indeed not all banks are fully complied with IFRS 7. In this respect, Oliveira et al. (2011) argue that IAS/IFRS are not aligned with the way financial companies manage risk, and that they are not bank-oriented standards

The problem is that IAS/IFRS focus only on financial risk, ignoring other kinds of risks (such as operational risks) faced by banks. This misalignment can culminate in the dispersal of risk reporting practices throughout an annual report, rendering them incomparable, and imprecise (Woods and Marginson, 2004; Woods et al., 2008).

Hence, the contribution of this thesis to the literature review consists in an improvement of value relevance of IFRS 7 in the European banking system. Indeed, this topic, on the best of our knowledge, is not fully studied in the value relevance field.

The relevance has been tested based on the nature of financial risk disclosure. In particular, to provide more in depth analysis on IFRS 7, the financial disclosure has been divided in qualitative and quantitative financial risk information. The two following two hypotheses have been formulated:

H1: The qualitative disclosure required by IFRS 7 is associated with European banks' share price.

H2: The quantitative disclosure required by IFRS 7 is associated with European banks' share price.

With this regard, Botosan and Plumlee (2002) argue that the different nature of disclosure is crucial to any analysis as the market responds differently. Indeed, they conclude that that greater total disclosure is not associated with a lower cost of equity capital. However, they find that limiting the analysis to an examination of the association between overall disclosure level and the cost of equity capital is insufficient, as the relation between disclosure level and cost of equity capital varies by type of disclosure. Moreover, they find that examining the association between one type of disclosure (i.e. quantitative) without controlling for other types of disclosure (i.e. qualitative) may lead to spurious associations resulting in erroneous conclusions.

Chapter 3: An empirical investigation on IFRS 7 in the European banking sector

3.1 The research design

3.1.1 The sample

To provide results, similar to Devalle et al. (2010), I observe the annual reports of European banks listed in London, Paris, Frankfurt, Madrid and Milan Stock Exchanges over a 8-year period, 2007– 2014. I focus on this setting because it represents the financial markets with the highest capitalization in Europe (source: Thomson Reuters).

The following table 6 shows European stock market capitalization.

Table 6. European Stock Exchange capitalization (%)

Countries	Capitalization (n)	Capitalization (%)
Belgium	24,364,482,687.49	0.06
Cyprus	12,489,072.06	0.00
Denmark	214,727,608,295.86	0.51
France	8,000,269,024,007.25	18.97
Germany	7,634,503,828,656.46	18.10
Italy	5,498,358,842,283.71	13.03
Republic of Ireland	325,004,506.77	0.00
Luxemburg	178,162,381,049.94	0.42
Netherland	3,556,166,576,197.67	8.43
Norway	1,468,681,547,387.96	3.48
Poland	633,177.24	0.00
Portugal	5,706,940,412.86	0.01
Spain	7,188,405,232,966.56	17.04
Sweden	27,210,256,519.29	0.06
Switzerland	214,413,960,483.07	0.51
United Kingdom	8,170,994,886,748.57	19.37

The total sample selection procedure starts with 86 listed banks (source: Thomson Reuters). The sample selection procedure at different steps is provided in table 7. It can

noted that only UK presents missing financial data. The final sample consists of 536 observations over a 8-year period 2007– 2014.

Table 7. Sample composition

	2007	2008	2009	2010	2011	2012	2013	2014	Tot
UK	9	12	12	12	12	14	14	14	99
<i>Missing financial data</i>	<i>1</i>	<i>5</i>	<i>5</i>	<i>5</i>	<i>5</i>	<i>6</i>	<i>5</i>	<i>5</i>	<i>37</i>
France	20	20	20	20	20	20	21	19	160
Germany	11	12	12	13	13	13	13	13	100
Spain	7	7	7	7	8	8	8	8	60
Italy	20	20	20	20	20	21	21	22	164
Tot	66	66	66	67	68	70	72	71	546

3.1.2 The financial disclosure index

The financial disclosure index is based on qualitative and quantitative type of information on credit, market (i.e. price risk, interest risk and exchange risk) and liquidity risk as requested under IFRS 7 (paragraphs 7:36-7:37-7:38-7:39-7:40).

Types of risk item to be disclosed are provided below:

1. Qualitative information for credit risk
 - a. the exposures to risks and how they arise
 - b. its objectives, policies and processes for managing the risk and the methods used to measure the risk
 - c. any changes in (a) or (b) from the previous period
2. Quantitative information for credit risk
 - a. the amount that best represents its maximum exposure to credit risk at the end of the reporting period without considering any collateral held or other credit enhancements;
 - b. description of collateral held as security and other credit enhancements, and their financial effect in respect of the amount that best represents the maximum exposure to credit risk
 - c. information about the credit quality of financial assets that are neither past due nor impaired

- d. an analysis of the age of financial assets that are past due as at the end of the reporting period but not impaired
 - e. an analysis of financial assets that are individually determined to be impaired as at the end of the reporting period
 - f. the nature and carrying amount of the assets
 - g. policies for disposing or for using assets in its operations when they are not readily convertible into cash
3. Qualitative information for market risk
- a. the exposures to risks and how they arise
 - b. its objectives, policies and processes for managing the risk and the methods used to measure the risk
 - c. any changes in (a) or (b) from the previous period
4. Quantitative information for market risk
- a. sensitivity analysis for each type of market risk to which the entity is exposed
 - b. methods and assumptions used in preparing the sensitivity analysis
 - c. changes from the previous period in the methods and assumptions used, and the reasons for such changes
 - d. an explanation of the method used in preparing such a sensitivity analysis, and of the main parameters and assumptions underlying the data provided
 - e. an explanation of the objective of the method used and of limitations that may result in the information not fully reflecting the fair value of the assets and liabilities involved
 - f. facts and the reasons to believe the sensitivity analyses are unrepresentative
5. Qualitative information for liquidity risk
- a. the exposures to risks and how they arise
 - b. its objectives, policies and processes for managing the risk and the methods used to measure the risk
 - c. any changes in (a) or (b) from the previous period
6. Quantitative information for liquidity risk

- a. a maturity analysis for non-derivative financial liabilities (including issued financial guarantee contracts) that shows the remaining contractual maturities
- b. a maturity analysis for derivative financial liabilities
- c. a description of how it manages the liquidity risk inherent in (a) and (b)

Manual content analysis is used to obtain the details of the index from banks annual accounts. An important issue is the reliability of this research instrument, which concerns the accuracy in measuring the concepts under investigation. To address such issue, each annual report has been scored by two young reserchers, under the supervision of three senior researchers. In case of uncertainty about specific scoring, a careful consultation among the researchers was made to reach a final agreed score. This is consistent with previous IFRS disclosure studies (Street and Bryant, 2000; Street and Gray, 2001; Glaum and Street, 2003).

To analyze the collected data, a Total Financial Disclosure Index (TFDI) was defined following Cook' (1992) and Hossain and Reaz' (2007) studies. This index is defined by dividing the total number of required disclosures provided by a bank as follows:

$$TFDI_{ij} = \frac{\sum xi}{n}$$

where

$x_{ij} = 1$ if i item is disclosed by firm j 0 otherwise

$n =$ number of items included in the disclosure index.

Similarly, we have developed the qualitative financial disclosure index (QLFDI) and the quantitative financial disclosure index (QTFDI).

$$QLFDI_{ij} = \frac{\sum xi}{n}$$

$$QTFDI_{ij} = \frac{\sum xi}{n}$$

Hence the indexes explains the total number of items disclosed by the bank j divided by the total number items of the checklist, so that:

$0 \leq \text{TFDI} \leq 1$ (the maximum score is represented by 24 items);
 $0 \leq \text{QLFDI} \leq 1$ (the maximum score is represented by 9 items);
 $0 \leq \text{QTFDI} \leq 1$ (the maximum score is represented by 15 items);

The items forming the index are not weighted in order to provide equal prominence to both each section of the standard and any user-groups of the financial reports (Wallace and Naser, 1995; Giner, 1997; Owusu-Ansah, 2000; Owusu-Ansah and Yeoh, 2005). Furthermore, several prior studies have argued that the result of the equal weighting procedure tend to be similar to those of other weighting systems (Zarzeski, 1996; Prencipe, 2004; Amoako and Asante, 2013).

3.1.3 Econometric model and variables

According to many studies on value relevance (Ventel et al., 2014; Barth et al., 2014; Clacher et al., 2013), I adopt the price (P) as a proxy for banks' value.

I chosen the share price as the dependent variable because it is more suitable for studies that want to investigate if the information involved in accounting amounts affects investors' choices. Many studies about the value relevance examine the association between accounting information and share prices (Barth, 1994; Barth et al., 1996; Nelson, 1996; Venkatachalam, 1996; Ventel et al., 2014; Barth et al., 2014).

The qualitative (QLFDI) and quantitative (QTFDI) financial disclosure indexes are used as main test variables, then also some other independent variables are added as explained later.

The statistical software Stata runs four different equations in order to verify changing in value relevance levels through the use of R^2 (Brown et al., 1999; Beisland 2009).

Firstly, model [a] has performed using the historical variable of value relevance literature according to the banking structure.

Usually, value relevance studies use earnings or EPS, and book value of equity or BVPS as basic variables to test the relevance of information (Barth et al., 2001;

Holthausen and Watts, 2001; Beisland, 2009). In this work core tier 1 is added in order to substitute the BVPS because this variable is more suitable for the banking sector.

Core tier 1 is the ratio between tier 1 capital and risk weighted assets. This is the measure of a bank's financial strength based on the sum of its equity capital and disclosed reserves, and sometimes non-redeemable, non-cumulative preferred stock. A bank's risk-weighted assets include all assets that the firm holds that are systematically weighted for credit risk. Tier 1 capital for a banking firm includes the value of its common stock, retained earnings, accumulated other comprehensive income (AOCI), noncumulative perpetual preferred stock and any adjustments to those accounts. The amount of tier 1 capital a bank holds and its proportion to its risk-weighted assets are important. In times of financial distress or recession, tier 1 capital is the first to absorb losses before other investors, such as debt holders, experience losses. The tier 1 capital ratio signifies how well a bank can withstand financial distress before it becomes insolvent.

Regulators use the tier 1 capital ratio to grade a bank's capital adequacy as well-capitalized, adequately capitalized, undercapitalized, significantly undercapitalized or critically undercapitalized. To be classified as well-capitalized, a bank must have a tier 1 capital ratio of 6% or greater under Basel III requirements and must not pay any dividends or distributions that would affect its capital.

In addition, I add also a variable that capture banks volatility because recent research has analysed the role played by financial reporting in the economic downturn (Whalen, 2008; Katz, 2008; Kothari and Lester, 2012). The increased uncertainty about fundamental values typically translates into greater volatility in the market prices of the assets by causing investors to react more strongly to new information.

$$P = \alpha + \beta_1 \text{CORE_TIER1}_{jt} + \beta_2 \text{EPS}_{jt} + \beta_3 \text{Bank_volatility}_{jt} + \varepsilon \quad (\text{a})$$

where:

a. Price (P) is the stock price 4 months after the ending reporting year. According to value relevance literature, it indicates banks' value.

- b. Core Tier 1 (CORE_TIER1). The ratio is calculated as Tier 1 on risk weighted assets, which measures banks' reliability as a powerful tool for understanding their value. The Tier 1 capital of the bank is similar to the book value of equity of an industrial firm. It is composed by: common share, retained earnings, other comprehensive income and common share capital issued by subsidiaries and held by third parties (Basel Committee, 2012). This is an indicator of risk hedging by equity. This ratio suggests bank's capacity to hedge the event of financial and operational risks without using external resources. Disclosure is related to the role of equity (in our study, the Core Tier 1), due to the information of shareholders need and the monitoring costs (Caldarelli et al., 2012).
- c. EPS is Earnings per share, and represents the portion of an entity's profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of an entity's profitability (Ventel et al., 2014; Baboukardos and Rimmel, 2014; Mechelli, 2013).
- d. Bank volatility is a statistical measure of the dispersion of returns for a given security. Given that the considered period (2007-2014) is particularly uncertain due to economic crisis, we add this variable because uncertainty translates into greater volatility in the financial market by causing investors to react more strongly to information (Baker and Wurgler, 2006).

In model [b] other variables of banking activity are included. First of all, a liquidity index is added to control for economic crisis because, as stated by Allen and Carletti (2008), the crucial features of the crisis are related to liquidity provision. These crucial features of the crisis are the significant fall in prices of many AAA-rated tranches of securitized products including many unrelated to subprime mortgages, the drying up of interbank markets for maturities beyond a few days and the change in haircuts on collateralized lending, the fear of contagion. The authors suggest that the significant discounts on AAA-rated tranches of securitized products that are too large to be explained by the underlying fundamentals are the result of cash-in-the-market pricing. These price movements were unanticipated and have produced a whole set of problems for risk management going forward. The drying up of liquidity in interbank markets is usually attributed to a mixture of liquidity hoarding by banks to counter the increased uncertainty over aggregate liquidity demand and fear of lending to other banks. At the

end of 2007 the evidence seems to be that banks were to a large extent hoarding liquidity rather than refusing to lend to too counterparts because credit default swaps on banks were only elevated somewhat.

The Return On Equity (ROE) is an important measure of bank's profitability by revealing how much profit a bank generates with the money shareholders have invested. The higher the index, the more the bank is perceived as safe.

Cash flow per share signals a company's ability to pay debt, pay dividends, buy back stock and facilitate the growth of business. Also, the free cash flow per share can be used to give a preliminary prediction concerning future share prices. For example, when a firm's share price is low and free cash flow is on the rise, the odds are good that earnings and share value will soon be on the up, because a high cash flow per share value means that earnings per share should potentially be high as well.

Based on the traditional role of bank, we can note that loans make up the bulk of banks' assets (Njanike, 2009), non performing loans (NPL) has attracted a great deal of interest among researchers and policy makers during the last four decades as these increasing non-performing loans are causing banking crisis which are turning into banking failures (Rajha, 2016). Moreover, the non-performing loans were considered one of the main causes of the global financial crisis (2007-2009) which damaged the USA economy and economies of many countries. (Rajha, 2016). Hence I add a variable to capture NPL since it is known that they are relevant in the considered period (EBA, 2015).

Finally, the leverage ratio is the relationship between a banking organization's core capital and its total assets. Leverage ratio is calculated by dividing Tier 1 capital by a bank's average total consolidated assets and certain off-balance sheet exposures. Similarly to the Tier 1 capital ratio, the Tier 1 leverage ratio is used as a tool by central monetary authorities to ensure the capital adequacy of banks and to place constraints on the degree to which a financial company can leverage its capital base. The minimum requirement established by Basel III is 3%.

Hence, model [b] is the follow:

$$P = \alpha + \beta_1 \text{CORE_TIER1}_{jt} + \beta_2 \text{EPS}_{jt} + \beta_3 \text{Bank_volatility}_{jt} + \beta_4 \text{LIQ}_{jt} + \beta_5 \text{ROE}_{jt} + \beta_6 \text{CFPS}_{jt} + \beta_7 \text{NPL}_{jt} + \beta_8 \text{LEV}_{jt} + \varepsilon \quad (\text{b})$$

Where:

- a. Liquidity index (LIQ), which tests the ability of the bank to meet short-term commitments. Consistent with the Basel Committee, our measure for liquidity is cash and financial assets available for trading on deposits. A high liquidity ratio is an indicator of good performance (Al-Akra and Ali, 2012). Accordingly, banks with higher liquidity ratios are expected to have higher firm value.
- b. Return On Equity (ROE) is the ratio between earnings and book value of equity. Some studies (e.g. Azzali et al., 2012) have demonstrated that financial market is particularly sensitive to this measure because it indicates a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.
- c. Cash Flow per Share (CFPS) is a financial ratio that measures the operating cash flows attributable to each share of common stock. Many financial analysts place more emphasis on the cash-flow-per-share value than on earnings-per-share values. While an earnings-per-share value can be easily manipulated, cash flow per share is more difficult to alter, resulting in what may be a more accurate value of the strength and sustainability of a particular business model.
- d. Non performing loans (NPL) is the ratio between the amount of NPL and total loans. This measurement is particularly significant in the period analyzed, indeed the EBA has stated that although the indicator has improved in the last year, it has always been high enough for European banks.
- e. Leverage (LEV) calculated as Tier 1 on total assets on and off balance sheet. This indicator stems from Basel II regulations and captures the bank's total assets (on and off balance sheet). It has crucial importance for banks, in particular after the last financial crisis (Basel Committee, 2014). It indicates how many assets are funded by equity. A high level of leverage ratio suggests a wide shareholders' responsibility with respect to bank investments.
- f. Log of total assets (logASSETS) is the proxy of size to mitigate the scale effect (Brown et al., 1999; Barth et al., 2001). In addition, some studies have demonstrated

that bigger banks have more relevant accounting numbers than smaller ones (Agostino et al., 2011);

Models [c] and [d] includes the Qualitative (QLFDI) and Quantitative (QTFDI) financial disclosure indexes.

$$P = \alpha + \beta_1 \text{CORE_TIER1}_{jt} + \beta_2 \text{EPS}_{jt} + \beta_3 \text{Bank_volatility}_{jt} + \beta_4 \text{LIQ}_{jt} + \beta_5 \text{ROE}_{jt} + \beta_6 \text{CFPS}_{jt} + \beta_7 \text{NP L}_{jt} + \beta_8 \text{LEV}_{jt} + \beta_9 \text{QLFDI}_{jt} + \varepsilon \quad (c)$$

$$P = \alpha + \beta_1 \text{CORE_TIER1}_{jt} + \beta_2 \text{EPS}_{jt} + \beta_3 \text{Bank_volatility}_{jt} + \beta_4 \text{LIQ}_{jt} + \beta_5 \text{ROE}_{jt} + \beta_6 \text{CFPS}_{jt} + \beta_7 \text{NP L}_{jt} + \beta_8 \text{LEV}_{jt} + \beta_9 \text{QTFDI}_{jt} + \varepsilon \quad (d)$$

Consistent with past studies (Al-Akra and Ali, 2012; Clacher et al., 2013; Ventel et al., 2014; Barth et al., 2014), we test the research hypothesis with a panel data analysis.

The following table shows the variables etiquette and how I calculate them.

Table 8. Variables description and measurement

Variable name	Label Name	Measure	Description
Price	P	Stock price 4 months after the ending reporting year	Banks' value
Core tier 1	CORE_TIER 1	Tier 1 on RWA	Banks' capacity to hedge the event of financial and operational risks without using external resources
Earnings per share	EPS	Earnings on common share	Banks' profitability
Bank volatility	Bank_volatility	Standard deviation between returns from that same security	Dispersion of returns

Liquidity index	LIQ	Cash and equivalents plus available for sale on total deposits	Banks' ability to meet short-term commitments.
Return on Equity	ROE	Earnings on book value of equity	Banks' profitability with the money shareholders have invested.
Cash flow per share	CFPS	Free cash flow on common shares	Strength and sustainability of banks' business model
Non performing loans	NPL	NPL on total loans	Exposure at risk
Leverage ratio	LEV	Tier 1 on total assets on and off balance	Shareholders' responsibility with respect to bank investments.
Qualitative financial disclosure index	QLFDI	Sum of qualitative items required by IFRS 7 on total items	Relevance of qualitative FIRD
Quantitative financial disclosure index	QTFDI	Sum of quantitative items required by IFRS 7 on total items	Relevance of quantitative FIRD
Book value per share	BVPS	Book value of equity on common shares	Similar to core tier 1, I use this variable as robustness test

Source: Own elaboration

3.2 Results

3.2.1 Tests on Financial Disclosure Indexes

Some tests on the Financial Disclosure Index (FDI) are performed, splitted in qualitative and quantitative indexes in order to observe which of its types of information has most influenced the total index.

Table 9 shows the European mean of FDI for each year highlighting an increase of almost 12% in IFRS 7 compliance from 2007 to 2014. As Bischof (2009), the t statistic has performed in the last column in order to compare statistically significant differences in means between the FDI in 2007 and the FDI in 2014. It can be observed that this difference is statistically significant at a 1% level both for qualitative and quantitative disclosure.

The qualitative information shows a higher level of compliance with IFRS 7 than quantitative one. It has a score of 0.68 in 2007 and it slightly increases in subsequent years. Overall, it displays an increase of 14.70%.

The quantitative index is 0.64 in 2007 and reaches 0.74 in 2014 (+15.62%).

The total FDI increases of 11.52% from 2007 to 2014. Also in this case there is statistically significant difference at a 0.1%.

Table 9. Univariate analysis of the effects of IFRS 7 adoption on disclosure

	European mean								Statistic (t)
	2007	2008	2009	2010	2011	2012	2013	2014	
<i>Qualitative FDI</i>	0.68	0.70	0.71	0.74	0.76	0.77	0.78	0.78	-4.69***
<i>Quantitative FDI</i>	0.64	0.66	0.68	0.71	0.72	0.73	0.74	0.74	-5.03***
<i>TOT FDI</i>	0.68	0.68	0.70	0.73	0.75	0.75	0.76	0.76	-5.81***

Table 10 points out the FDI mean for each year by Country divided in qualitative and quantitative indexes.

UK shows a similar trend in the observed period (almost 80%). In 2008 the compliance mean to IFRS 7 slightly decrease (-2%), maybe because with the advent of the crisis in 2007, banks were more reluctant of giving information for fear of damaging their profitability (Cordella and Yeyati, 1998). Generally, there are not statistically significant differences in means between the FDI in 2007 and the FDI in 2013 because UK is a common law Country, therefore it was generally less affected by the transition to international accounting standards (La Porta et al., 1997; Ball et al., 2000). Looking

at the differences between qualitative and quantitative disclosure, it can observe that qualitative information shows a 5% level of significance, even though English banks seems to be more compliant with regard quantitative information (81% in 2007 respect 73% of qualitative). In the observed period, qualitative information increases of 6.85%, while quantitative raises of 3.70%. This could explain the absence of significance t statistic for quantitative disclosure.

Unlike UK, the other Countries under investigation show statistically significant means differences in FDI in 2007 and 2014 being civil law ones.

Germany already has a high score in 2007 (0.73). It suffers only a slightly decrease in 2008 (-1.4%), but it recovers in 2009 (+3%). In 2010 the German FDI stabilizes at 0.81. Both qualitative and quantitative disclosure are statistically significant at 1% level.

Table 10. Univariate analysis of the effects of IFRS 7 adoption on disclosure by Country

	European FDI mean								Statistic (t) 2007-2014
	2007	2008	2009	2010	2011	2012	2013	2014	
UK									
<i>Qualitative FDI</i>	0.73	0.73	0.73	0.74	0.77	0.77	0.78	0.78	-2.43**
<i>Quantitative FDI</i>	0.81	0.81	0.81	0.82	0.84	0.84	0.84	0.84	-2.17
<i>Tot FDI</i>	0.81	0.79	0.79	0.80	0.83	0.83	0.83	0.83	-1.06
Germany									
<i>Qualitative FDI</i>	0.79	0.78	0.82	0.86	0.91	0.93	0.93	0.93	-2.36***
<i>Quantitative FDI</i>	0.67	0.66	0.68	0.71	0.73	0.74	0.74	0.74	-2.76***
<i>Tot FDI</i>	0.73	0.72	0.74	0.77	0.81	0.81	0.81	0.81	-4.71***
Spain									
<i>Qualitative FDI</i>	0.66	0.70	0.73	0.73	0.76	0.76	0.79	0.79	-2.23**
<i>Quantitative FDI</i>	0.42	0.49	0.52	0.58	0.61	0.62	0.64	0.64	-2.81***
<i>Tot FDI</i>	0.54	0.56	0.58	0.66	0.68	0.68	0.70	0.70	-3.33***
Italy									
<i>Qualitative FDI</i>	0.39	0.42	0.45	0.49	0.49	0.48	0.50	0.50	-2.39**

<i>Quantitative FDI</i>	0.64	0.65	0.67	0.67	0.67	0.68	0.68	0.68	-1.63
<i>Tot FDI</i>	0.55	0.57	0.59	0.60	0.60	0.61	0.61	0.61	-3.22***
France									
<i>Qualitative FDI</i>	0.99	0.99	0.96	0.96	0.99	0.99	0.99	0.99	0.00
<i>Quantitative FDI</i>	0.63	0.63	0.71	0.71	0.77	0.79	0.79	0.79	-2.37**
<i>Tot FDI</i>	0.81	0.79	0.82	0.84	0.89	0.88	0.89	0.89	-4.05***

Spain and Italy recorded the lowest FDI score in 2007 (0.54 and 0.55 respectively), but the former is more compliant than the latter (0.70 and 0.61 respectively in 2013). Finally, Spain rises of IFRS 7 information recording an increasing of almost 30% from 2007 to the end of the observed period, while Italy of almost 11%. Qualitative and quantitative Spanish information have statistically significant differences (5% and 1% respectively).

Italy shows statistically significant differences only for qualitative information at 5%. Regarding quantitative disclosure, it is stable in the observed period. This can explain the absence of t statistic significance.

France has the highest FDI in the analyzed sample (0.89 in 2014) showing the better compliance with IFRS 7. This high score is for the majority affected by qualitative information reaching the 89% in 2014. French banks are more compliant to qualitative information showing scores of 0.99 in 2007, 2008, 2011, 2012 and 2013. This type of information has not statistically significant differences from 2007 to 2013. Instead, quantitative disclosure is lower than qualitative displaying a maximum score of 0.79 in 2014. In this case, it can see statistically significant differences at 5% level.

In table 11 has shown an univariate analysis as above distinguishing for each financial risk (i.e. credit risk, market risk and liquidity risk).

European Countries are more compliant about liquidity risk recording a higher score than credit and market ones in the all observed period. Indeed, in 2007 liquidity risk has already a score of 0.70 with respect credit risk (0.67) and market risk (0.60).

Table 11. Univariate analysis of the effects of IFRS 7 (splitted in financial risks) adoption on disclosure

European FDI mean									Statistic (t) 2007-2014
	2007	2008	2009	2010	2011	2012	2013	2014	
<i>Qualitative credit FDI</i>	0.70	0.73	0.73	0.77	0.80	0.80	0.81	0.81	-3.13***
<i>Quantitative credit FDI</i>	0.65	0.67	0.68	0.69	0.71	0.71	0.73	0.73	-1.74**
<i>Credit risk FDI tot</i>	0.67	0.68	0.70	0.71	0.74	0.74	0.76	0.76	-4.30***
<i>Qualitative market FDI</i>	0.67	0.69	0.70	0.71	0.75	0.76	0.77	0.77	-3.07***
<i>Quantitative market FDI</i>	0.56	0.57	0.58	0.62	0.63	0.64	0.64	0.64	-0.79
<i>Market risk FDI tot</i>	0.60	0.61	0.63	0.66	0.67	0.68	0.69	0.69	-6.07***
<i>Qualitative liquidity FDI</i>	0.68	0.68	0.71	0.72	0.74	0.74	0.75	0.75	-3.26***
<i>Quantitative liquidity FDI</i>	0.72	0.74	0.78	0.81	0.84	0.85	0.85	0.85	-0.34
<i>Liquidity risk FDI tot</i>	0.70	0.71	0.75	0.77	0.79	0.80	0.80	0.80	-4.57***

All financial risks increase with a very similar trend. In 2014, credit risk information has increased of almost 13% with respect the first year of IFRS 7 application; market risk information has increased of 15% and liquidity risk information has raised of 14%.

The parametric test indicates that there is a statistically significant means differences in FDI for each financial risk in the observed period.

Observing qualitative and quantitative information for each risk, it can see that banks are more compliant to the former than the latter. There are statistically significant differences, except quantitative disclosure on market and liquidity risks.

Similarly, table 12 points out the relevance of each financial risk information by Country.

UK seems to give less importance to market risk disclosure (the trend varies from 0.61 in 2007 and 0.66 in 2014). Indeed, market risk disclosure requested by IFRS 7 is more detailed in particular on sensitivity analysis, so more reluctance to disclose this type of information appears. This UK banks' behavior is connected to the large amount of toxic assets in their portfolio (Dell'Atti and Miglietta, 2014).

Overall, only liquidity risk disclosure appears statistically significant in means, maybe because a big English bank (Northern Rock) was nationalized with a very expensive intervention by the Bank of England because it was experiencing serious liquidity problems (ECB, 2011).

Focusing on the qualitative and quantitative indexes, it has highlighted that only quantitative disclosure on market risk and qualitative disclosure on liquidity risk show a slight statistically significant difference (both at 1% level).

German FDI shows a slight decline in 2008 for all financial risks (-1.4% for credit risk and -1.2% for liquidity risk). The credit risk index is stable from 2011 (0.79), the market risk and liquidity indexes from 2012 (0.77 and 0.87 respectively). Statistically significant means differences regard credit risk and market risk disclosure because recent study have demonstrated that German banks are particularly exposed to this type of risks (Upper and Worm, 2004). This has probably led German banks to give more emphasis to credit and market risks disclosure.

Quantitative information on market risk does not present statistically significant differences. Instead, liquidity risk shows significance only for qualitative disclosure.

In 2007, Spain is more focused on market risk disclosure (0.55 vs 0.50 for credit and 0.40 for liquidity risks). In 2013 disclosure on financial risks has significantly increased: +50% disclosure on credit risk; +29% disclosure on market risk; +85% disclosure on liquidity risk. The double-digit increase in the disclosure required by IFRS 7 highlights the efforts of Spain to be as compliant to the standard. For this reason, there are statistically significant in means for all three financial risks.

Spain shows significant differences for the financial risks at 1%. Looking at qualitative and quantitative disclosure, only qualitative information both for market and liquidity risks is not significant.

Analyzing Italian sample, we can observe that market and liquidity risks disclosure have the best score in 2007 (0.54), while credit risk disclosure reaches 0.48. Italian banks record an increase by 2013 for both credit risk disclosure (+12.50%) and market risk

disclosure (+14.80%) and liquidity risk disclosure (+16.67%). Also in this case, all three financial risks are statistically significant in means.

France is the most compliant of all civil law Countries. It has recorded an increase of 10.84% in credit risk disclosure, 8.10% in market risk disclosure, 10.59% in liquidity risk disclosure. It can see that Student t is statistically significant in means in credit and market risks total indexes. Liquidity risk results not significant in mean because it seems that French banks have always been very conscious about liquidity risk as evidenced by the collected data. Also qualitative credit and market risks disclosure indexes are not statistically significant in means.

Table 12. Univariate analysis of the effects of IFRS 7 adoption on disclosure for each financial risk by Country

	European FDI mean								Statistic (t) 2007-2014
	2007	2008	2009	2010	2011	2012	2013	2014	
UK									
<i>Credit risk</i>									
<i>Qualitative FDI</i>	0.79	0.79	0.79	0.79	0.84	0.84	0.84	0.84	-0.37
<i>Quantitative FDI</i>	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	-0.41
<i>Tot FDI</i>	0.86	0.87	0.87	0.87	0.89	0.89	0.89	0.89	-0.61
<i>Market risk</i>									
<i>Qualitative FDI</i>	0.69	0.69	0.69	0.71	0.73	0.73	0.74	0.74	-1.00
<i>Quantitative FDI</i>	0.56	0.56	0.56	0.58	0.60	0.60	0.63	0.63	-1.77*
<i>Tot FDI</i>	0.61	0.61	0.61	0.62	0.65	0.65	0.66	0.66	-1.60
<i>Liquidity risk</i>									
<i>Qualitative FDI</i>	0.71	0.71	0.71	0.73	0.75	0.75	0.76	0.76	-1.86*
<i>Quantitative FDI</i>	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	-1.46
<i>Tot FDI</i>	0.83	0.83	0.83	0.86	0.87	0.87	0.87	0.87	-2.61***
GERMANY									
<i>Credit risk</i>									
<i>Qualitative FDI</i>	0.74	0.74	0.78	0.84	0.92	0.94	0.94	0.94	6.24***
<i>Quantitative FDI</i>	0.68	0.67	0.71	0.71	0.74	0.73	0.73	0.73	2.14**
<i>Tot FDI</i>	0.70	0.69	0.73	0.75	0.79	0.79	0.79	0.79	-3.89***
<i>Market risk</i>									
<i>Qualitative FDI</i>	0.79	0.79	0.82	0.88	0.90	0.94	0.94	0.94	6.06***
<i>Quantitative FDI</i>	0.55	0.56	0.59	0.66	0.65	0.66	0.66	0.66	-0.77
<i>Tot FDI</i>	0.64	0.64	0.68	0.74	0.74	0.77	0.77	0.77	-4.38***
<i>Liquidity risk</i>									
<i>Qualitative FDI</i>	0.85	0.84	0.84	0.88	0.92	0.92	0.92	0.92	8.40***
<i>Quantitative FDI</i>	0.77	0.76	0.75	0.77	0.81	0.84	0.84	0.84	0.32

<i>Tot FDI</i>	0.81	0.80	0.79	0.82	0.86	0.87	0.87	0.87	-0.76
SPAIN									
<i>Credit risk</i>									
<i>Qualitative FDI</i>	0.58	0.67	0.74	0.81	0.85	0.81	0.85	0.85	-2.94***
<i>Quantitative FDI</i>	0.41	0.49	0.52	0.54	0.57	0.59	0.65	0.65	-3.09***
<i>Tot FDI</i>	0.50	0.58	0.63	0.63	0.71	0.70	0.75	0.75	-3.65***
<i>Market risk</i>									
<i>Qualitative FDI</i>	0.58	0.70	0.70	0.70	0.74	0.70	0.74	0.74	-1.76
<i>Quantitative FDI</i>	0.53	0.56	0.52	0.65	0.63	0.67	0.69	0.69	-3.33***
<i>Tot FDI</i>	0.55	0.63	0.61	0.67	0.68	0.68	0.71	0.71	-4.95***
<i>Liquidity risk</i>									
<i>Qualitative FDI</i>	0.62	0.67	0.70	0.70	0.74	0.74	0.78	0.78	-1.76
<i>Quantitative FDI</i>	0.17	0.37	0.52	0.59	0.67	0.70	0.70	0.70	-3.12***
<i>Tot FDI</i>	0.40	0.52	0.61	0.65	0.70	0.73	0.74	0.74	-3.94***
ITALY									
<i>Credit risk</i>									
<i>Qualitative FDI</i>	0.43	0.52	0.45	0.56	0.52	0.49	0.54	0.54	-2.65***
<i>Quantitative FDI</i>	0.54	0.55	0.55	0.55	0.54	0.54	0.54	0.54	0.00
<i>Tot FDI</i>	0.48	0.53	0.50	0.56	0.55	0.52	0.54	0.54	-2.68**
<i>Market risk</i>									
<i>Qualitative FDI</i>	0.43	0.43	0.49	0.52	0.54	0.54	0.56	0.56	-2.45***
<i>Quantitative FDI</i>	0.64	0.65	0.67	0.65	0.63	0.67	0.67	0.67	-1.00
<i>Tot FDI</i>	0.54	0.54	0.58	0.59	0.59	0.60	0.62	0.62	-2.80***
<i>Liquidity risk</i>									
<i>Qualitative FDI</i>	0.34	0.34	0.40	0.40	0.40	0.43	0.43	0.43	-2.25***
<i>Quantitative FDI</i>	0.74	0.74	0.80	0.83	0.80	0.83	0.83	0.83	-1.74
<i>Tot FDI</i>	0.54	0.54	0.60	0.62	0.60	0.63	0.63	0.63	-2.78***
FRANCE									
<i>Credit risk</i>									
<i>Qualitative FDI</i>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
<i>Quantitative FDI</i>	0.66	0.66	0.71	0.71	0.79	0.84	0.84	0.84	-2.55**
<i>Tot FDI</i>	0.83	0.83	0.86	0.86	0.89	0.92	0.92	0.92	-2.75**
<i>Market risk</i>									
<i>Qualitative FDI</i>	0.96	0.96	0.88	0.88	0.96	0.96	0.96	0.96	0.00
<i>Quantitative FDI</i>	0.53	0.53	0.60	0.60	0.65	0.65	0.65	0.65	-1.93*
<i>Tot FDI</i>	0.74	0.74	0.74	0.74	0.80	0.80	0.80	0.80	-1.96*
<i>Liquidity risk</i>									
<i>Qualitative FDI</i>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
<i>Quantitative FDI</i>	0.71	0.71	0.84	0.84	0.88	0.88	0.88	0.88	-1.32
<i>Tot FDI</i>	0.85	0.85	0.92	0.92	0.94	0.94	0.94	0.94	-1.33

3.2.2 Descriptive statistic

Table 13 shows descriptive statistics of banks for the dependent and independent variables.

Table 13. Descriptive statistics

	Min	Max	Mean	St.Dev
<i>Price</i>	0	93.00	22.52	22.68
<i>EPS</i>	0	0.92	0.60	11.26
<i>Core Tier 1</i>	0.02	0.56	0.13	0.14
<i>Bank volatility</i>	0	181.00	25.32	13.74
<i>Liq. Index</i>	0	3.00	0.10	0.21
<i>ROE</i>	-0.43	0.47	0.05	0.10
<i>CFPS</i>	-0.47	0.46	0.13	8.69
<i>NPL</i>	0.01	0.74	0.20	0.20
<i>Leverage</i>	0.01	0.11	0.04	0.03
<i>QLFDI</i>	0.22	1	0.69	0.22
<i>QTFDI</i>	0.13	0.87	0.62	0.15

The dependent variable (Price) fluctuates from a minimum of 0.04 to a maximum of 93.00 because the sample includes both very big European banks and small ones. For this reason, also the variability, measured by the standard deviation, is quite high (22.68). The mean price is 22.52.

The qualitative financial disclosure index has a maximum of 1 showing a full compliance to qualitative information and a mean of 0.69. Instead, the quantitative financial disclosure index has a maximum of 0.87 and a mean of 0.62, slightly lower than the qualitative information.

EPS has a mean of 0.60 indicating a quite good banks profitability, but the standard deviation shows that the sample is not homogeneous.

Core Tier 1 as proxy for high quality capital ratio has a mean of 0.13, but a minimum and a maximum of 0.02 and 0.56, respectively, due to the presence of very different portions of risk weighted assets.

The maximum of bank volatility is very high indicating that the period is affected by hard financial turmoil.

The Liquidity Index shows a low mean (0.10) indicating that the European banks investigated could not be able to meet short-term commitments, despite the maximum is 3.00.

The minimum ROE is negative because of the large losses suffered by the European banking sector during the period under investigation, while the mean is 0.05.

CFPS shows a minimum of -0.47 and a maximum of 0.46. The mean is 0.13 showing a limited funding ability.

The maximum amount of NPL is very high (0.74) showing that the financial reporting of European banks are rather burdened by the amount of non-performing loans, but fortunately the average is lower

The trend of Leverage is peculiar since it is very low (0.01) due to the off balance sheet items, below the minimum requirements set by Basel III Accord (3%) for small banks, but it has reached a maximum of 0.11. The mean is 0.04, so the majority of observed banks are slightly above the aforementioned limit.

This further innovation of Basel III is the introduction of a limit on the use of leverage by banks. In fact, during the crisis, it became clear that during the euphoria of the economic cycle, many banks that met the capital requirements have actually developed a very low leverage, especially through the massive increasing of off-balance sheet activities. Once again, the data are few scattered around their mean, so the variability is low (0.03).

Table 14 shows the Pearson correlation between variables. The effects of these variables on the dependent one should not be considered as a whole, but individually.

Table 14. Pearson correlation

	<i>Price</i>	<i>EPS</i>	<i>Core Tier 1</i>	<i>Bank volatility</i>	<i>Liq index</i>	<i>ROE</i>	<i>CFPS</i>	<i>NPL</i>	<i>Leverage</i>	<i>QLFDI</i>	<i>QTFDI</i>
<i>Price</i>	1										
<i>EPS</i>	0.41***	1									
<i>Core Tier 1</i>	0.02	0.03	1								
<i>Bank volatility</i>	0.05	-0.05	0.04	1							
<i>Liq index</i>	0.02	-0.02	-0.05	0.38***	1						
<i>ROE</i>	0.15***	0.15***	0.06	-0.21***	0.12***	1					
<i>CFPS</i>	0.38***	0.20***	0.05	-0.14***	-0.14***	0.10**	1				
<i>NPL</i>	-0.05	0.06	-0.12**	-0.02	-0.10**	0.02	-0.07*	1			
<i>Leverage</i>	-0.05	-0.01	0.04	-0.13***	0.01	-0.06	0.03	-0.07*	1		
<i>QLFDI</i>	0.34***	0.18***	0.16***	0.00	-0.07	0.08**	0.35***	-0.08**	0.01	1	
<i>QTFDI</i>	0.11*	-0.03	0.06	0.13**	-0.09**	-0.10**	0.05	0.12***	-0.02	0.41***	1

*** Correlation is significant at the 0.01 level

** Correlation is significant at the 0.05 level

* Correlation is significant at the 0.10 level

At first glance, it can be seen that multicollinearity is not a problem, but in the next paragraphs will be shown more specific tests (VIF and Tolerance).

The dependent variable is significantly correlated with EPS, ROE, CFPS and the two indexes.

The QLFDI is significantly and positively correlated with Price, EPS, Core Tier 1, ROE, CFPS and QTFDI. It is significantly and negatively correlated with NPL.

Lastly, the QTFDI is significantly and positively correlated with Price, Bank volatility, NPL and QLTD, while it is significantly and negatively correlated with liquidity index and ROE.

3.2.3 Results and discussion

Before to run the panel data analysis, we have developed the tests to be sure to respect the assumptions of the model:

- normality of dependent variable (Shapiro-Wilk test);
- homoskedasticity (Breusch-Pagan test);
- absence of autocorrelation between residuals (Durbin-Watson test);
- absence of multicollinearity (VIF and Tolerance) (all tests are untabled).

The aforementioned tests are all statistically significant.

First of all, we have calculated both fixed effects and random effects to decide which is the best solution using the Hausman Test (untabled). The result suggests to develop the random effects because, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model. In addition, random effects assume that the entity's error term is not correlated with the predictors which allows for time-invariant variables to play a role as explanatory variables.

Table 15 displays regression results for panel data.

Table 15. Panel data analysis

PANEL	<i>Model (a)</i>	<i>Model (b)</i>	<i>Model (c)</i>	<i>Model (d)</i>	<i>Model (e)</i>	<i>Model (f)</i>
<i>(Constant)</i>	16.14(5.49)***	12.45(3.67)***	11.25(3.50)***	12.91(3.50)***	12.55(3.80)***	12.91(3.85)***
<i>EPS</i>	0.45(3.88)***	0.41(3.70)***	0.39(3.50)***	0.39(3.66)***	0.37(3.65)***	0.36(3.96)***
<i>Core Tier 1</i>	5.01(3.74)***	5.08(3.76)***	6.66(3.71)***	0.39(5.24)***	-	-
<i>BVPS</i>	-	-	-	-	5.56(3.15)***	3.02(3.24)***
<i>Bank volatility</i>	0.15(1.95)**	0.24(2.90)**	0.23(2.80)**	0.26(3.22)***	0.23(2.81)**	0.26(2.92)***
<i>Liq index</i>	-	-8.64(-1.29)	-8.03(-1.20)	-2.81(-0.43)	-6.03(-1.20)	-0.81(-0.43)
<i>ROE</i>	-	37.76(4.37)***	37.13(4.31)***	29.50(3.44)***	35.13(3.89)***	30.50(2.98)***
<i>CFPS</i>	-	0.35(3.31)***	0.34(3.15)**	0.26(2.45)**	0.34(3.96)***	0.26(2.89)**
<i>NPL</i>	-	2.78(0.71)	2.13(0.54)	0.87(0.23)	1.13(0.36)	0.63(0.55)
<i>Leverage</i>	-	-34.88(-1.27)	-38.83(-1.42)	-37.73(-1.40)	-28.83(-0.42)	-27.73(-0.40)
<i>QLFDI</i>	-	-	11.56(2.91)**	-	10.66(3.91)***	-
<i>QTFDI</i>	-	-	-	3.89(0.61)	-	2.89(0.91)
Adj R ²	0.15	0.23	0.27	0.25	0.31	0.30
Wald chi ²	18.04***	61.97***	71.45***	102.20***	108.96***	111.63***

Focusing on the model [a], we observe that Core Tier 1, EPS and Bank volatility are statistically significant. The result shows that an increase in Core Tier 1 affects positively the banks' share price (1% level of significance), since the financial market perceives high level of this index as banks' reliability. Core Tier 1 could be assumed as the banks' book value of equity weighted for risks. Indeed, this result is consistent with Agostino et al. (2010) that state that the value relevance of equity book value increases for banks that are classified as 'more transparent banks'. In addition, a recent study by the Basel Committee (2015) emphasizes that this index has strengthen financial markets' confidence because it has led to greater transparency by banks, in particular after the introduction of Basel III.

Regarding EPS, literature in general states that they are relevant for investors (Barth et al., 2001; Agostino et al., 2010; Clarkson et al., 2011) because they are a good proxy of bank profitability.

Also, bank volatility is positively associated with banks' value. This results is supported by an important principle of finance: the greater risk the higher return. In other words,

to invest in more volatile actions is definitely more profitable, but at the same time risky because they are long-term investments usually in a turbulent and complex market.

In the model [b], the R^2 , proxy of value relevance (Brown et al., 1999; Barth et al., 2001; Beisland, 2009), increases from 0.15 in equation to 0.23. This means that adding the aforementioned variables, the straightness of the model is enforced. In this model, ROE and CFPS are statistically significant at 1% level. This suggests that financial market recognizes positively the ability of the bank capitalization and funding ability. Indeed several studies confirm that high capitalization brings confidence among investors who perceive the responsibility of shareholders.

In addition, given that the strong crisis that the market has gone through in the past few years, investors reward the entities' financial capacity represented by CFPS.

Focusing the attention on NPL (proxy of credit risk), it is not statistically significant. This result could appear strange because investors usually monitor credit risk because the recent financial crisis has heightened the importance of understanding it. Despite the fact that IFRS 7 captures certain elements of credit risk disclosure, some critics (Butler, 2009) assert that IFRS 7 credit risk disclosures are too basic in that they do not faithfully represent the complexity of counterparty and credit risk—which makes it even more important to identify the gaps and areas needing improvement in current disclosure requirements. A research conducted by CFA (2016) demonstrates that users consider disclosures concerning impairment and maximum credit exposure the most useful components of credit risk disclosure. In other words, if higher-quality information were provided in these disclosures, users would probably assign a higher level of importance to them.

Just as it did for credit risk, the 2007–2009 economic crisis has served to highlight the importance of effective management of liquidity risk. IFRS 7 defines liquidity risk as the risk that an entity will encounter difficulties in meeting obligations arising from the settlement of financial liabilities through the delivery of cash or another financial asset.

A study conducted by CFA (2016) reveals that users consider the maturity analysis the most important component of liquidity risk disclosures. Our results are in contrast with this assertion because the liquidity index is not statistically significant in the models.

This result could be justified by the European Financial Reporting Advisory Group (EFRAG) that highlights that liquidity disclosures need improvement about levels of risk and mitigation strategies would be helpful, particularly for liquidity risk exposures; the maturity analysis has several areas in need of improvement, for example maturity analysis of off-balance-sheet items (e.g., financial guarantees, backstop facilities) should be required; the sensitivity analysis is required for assessing liquidity risk; disclosures should highlight the risks associated with liquidity providers, in particular in liquidity provider concentration risk and significant covenants that affect liquidity. Indeed, it could be interesting to disclose reported details about the concentration risk of liquidity providers should be expanded to inform users about the funding diversity and stability of reporting entities' funding sources. These disclosures should include a detailed description of the financing providers, their concentration, and the associated counterparty details.

In the third [c] and fourth [d] models, we add the two financial disclosure indexes (QLFDI and QTFDI). Model [c] that includes QLFDI is generally more relevant because the R^2 increases. Only qualitative index has a positive effect on banks' value, meaning that qualitative disclosure recommended by IFRS 7 is value relevant. According to Alotaibi and Hussainey (2016), qualitative disclosure affects the value of bank. From the investors perspective, this finding suggests that qualitative information can be easily found because it is supposed to have a clearer language (Pucci and Tutino, 2012), so it helps investors to better allocate their financial resources and assess the bank's financial position and performance. In addition, qualitative information is quite similar from bank to bank and therefore comparison between data from different entities is easy for investors. Indeed, it is known that comparability permits users of financial statements to understand the differences among firms and may favour investment decisions that best fit with users' risk appetite (Land and Lang, 2002). A possible explanation about the significance of QLFDI could be that comparability increase the relevance of this information from investors' perspectives. Otherwise, quantitative disclosure differs from entities because the methodologies of risk management are not the same. For example, for the calculation of credit risk, not all banks use the standard IRB method; some of them prefer the advanced IRB approach and thus use different assumptions for the calculation of parameters. An unskilled investor may believe that

there are not differences between these methods and then he could incorrectly allocate his risk appetite.

Moreover, a study conducted by Cotter et al. (2012) investigates the evaluation of the benefits of IFRS adoption by investigating the properties of analyst forecasts around the time of adoption and the role of qualitative and quantitative disclosure of IFRS. Results show that qualitative disclosure is associated with lower error and lower volatility in financial market, suggesting that investors perceive qualitative information as more relevant and informative.

The QTFDI in model [d] is not statistically significant maybe because this type of information is difficult to interpret in particular in the banking setting characterized by a large amount of complex financial instruments, in particular derivatives that often make any interpretation opaque. Consistent with Wagenhofer (2004), a possible explanation is that the effects of disclosure depend on three factors: uncertainty, multi-person settings with conflicts of interest, and information asymmetry. Depending on the assumptions made about these factors, it is possible to predict a negative or absent relationship between increased disclosure and entities value. For example, if the production of information is costly for an entity, investors perceive the business less profitable.

Generally speaking, many Authors (i.e. Morgan, 2002; Baumann and Nier, 2004) argue that enhancing banks disclosure, in particular financial risk disclosure, leads to higher transparency which means more stability in the financial market. Instead, others (i.e. Holmstrom, 2015) state that bank regulation and supervision does not publicly reveal information about banks' exposures and relevant economic conditions, because such disclosure is information sensitive and it leads to less liquidity. In other words, investors remain "sleepy": they do not have to pay attention to transient fluctuations in the market value of bank assets (Hanson et al., 2015). In addition, Acharya and Ryan (2016) define banks as "secret keepers" regarding the value of the loans and other assets that collateralize their debt claims. Such non-disclosure ensures that investors remain symmetrically uninformed about the value of those claims. At this point, the query is: banks do not give disclosure because they are only "secret keepers" or because they do not know much about relevant economic conditions? This is the case of "symmetric ignorance" (Holstrom, 2015). Symmetric ignorance renders banks' risk management

undisciplined, for example, focusing on salient past events rather than on potential future events whose occurrence would more significantly impair bank solvency. Symmetric ignorance could result in irrelevant information for investors, such as the case of our results that suggest a non significant result of the variable QTFDI. Another type of bank opacity arises when some investors, possibly banks, have less information or learn more slowly than other investors about the value or risk of commonly held assets (Acharya and Ryan, 2016). Under this type of opacity, banks' primary concerns are that their assets are less valuable or riskier than current market prices suggest, and those prices will fall if other holders of the assets receive adverse information or are able to sell on a timelier basis than are the banks. Banks and other investors that receive even slightly adverse or ambiguous news about the value or risk of assets may take individually protective behaviors, such as racing to the exits to dump the assets, with adverse consequences for stability. Banks' counterparty risk on purchased CDS is an example of this type of bank opacity. Banks are not required to and generally do not disclose the identities of their counterparties. Also this case could have lead to a non significant result of the variable QTFDI.

Overall, investors sometimes might suspect or misinterpret the intentions of the company in providing more information to the market. In summary, the impact of disclosure on firm value is still an empirical issue.

3.2.4 Robustness test

We have performed a sensitivity test in order to confirm our results. We replace the Core Tier 1 (a typical variable of banking sector) with the Book Value of Equity per share (BVPS), proxy used in the majority of value relevance studies.

Many studies have investigated the relation between stock price and book equity demonstrating that it is stronger than the association between stock price and earnings (Collins et al., 1997; Barth et al., 1998; Dechow et al., 1999). Barth et al. (1998) study how value relevance of the balance sheet is related to financial health and find that the sensitivity of the equity book value has an indirect relation with the dependent variable, proxy of the value of firms' financial health. Conversely, they find a direct relation with earnings. Their conclusion is supported by Dechow et al. (1999), who also find that

book values of equity convey additional information over earnings in explaining contemporaneous stock prices. For these reasons we have performed other two models.

$$P = \alpha + \beta_1 BVPS_{jt} + \beta_2 EPS_{jt} + \beta_3 Bank_volatility_{jt} + \beta_4 LIQ_{jt} + \beta_5 ROE_{jt} + \beta_6 CFPS_{jt} + \beta_7 NPL_{jt} + \beta_8 LEV_{jt} + \beta_9 QLFDI_{jt} + \varepsilon \quad (e)$$

$$P = \alpha + \beta_1 BVPS_{jt} + \beta_2 EPS_{jt} + \beta_3 Bank_volatility_{jt} + \beta_4 LIQ_{jt} + \beta_5 ROE_{jt} + \beta_6 CFPS_{jt} + \beta_7 NPL_{jt} + \beta_8 LEV_{jt} + \beta_9 QTFDI_{jt} + \varepsilon \quad (f)$$

Table 15 reveals that, even though BVPS is highly significant like Core Tier 1, the R2 increases of almost 0.04 in model [e] and almost 0.03 in model [f], demonstrating that it is more relevant for investors with respect models [c] and [d]. The result is due to the opacity of banks' financial reporting. Indeed, maybe investors prefer to rely on clearer and known measures like BVPS.

Qualitative financial risk disclosure under IFRS 7 is value relevant for banks' investors, helping them to better allocate their financial resources and assess the bank's financial position and performance.

Conclusions

This thesis has analyzed the effect on investors of financial instruments risk disclosure required by IFRS 7 in the European banking sector before and after the recent financial crises that have highlighted the interconnectedness between the state of the economy and several key financial risk exposures, such as credit, liquidity, and market risk.

At the same time, there is often limited transparency for users regarding these risk exposures and how they are managed by reporting entities. This limited transparency contributes to the mispricing of risk and the misallocation of capital and minimises investors' ability to provide market discipline on a timely basis. It also contributes to disorderly capital market corrections in the valuation of companies during crises as investors belatedly recognise that reporting entities are riskier than they were assumed to be. In order to reply to the main research question "does investors find FIRD

provided by banks under IFRS 7 value relevant?”, I perform a panel data analysis using a sample composed by 546 observation from 2007 to 2014.

Results show that only the qualitative disclosure index has a positive effect on banks' value, meaning that qualitative disclosure recommended by IFRS 7 is value relevant. According to Alotaibi and Hussainey (2016), qualitative disclosure affects the value of bank. From the investors perspective, this finding suggests that qualitative information can be easily found because it is supposed to have a clearer language (Pucci and Tutino, 2012). Qualitative financial risk disclosure under IFRS 7 is value relevant for banks' investors, helping them to better allocate their financial resources and assess the bank's financial position and performance. Instead, the quantitative disclosure index is not statistically significant maybe because this type of information is difficult to interpret in particular in the banking setting, which is characterized by a large amount of complex financial instruments, in particular derivatives that often make any interpretation opaque. Consistent with Wagenhofer (2004), a possible explanation is that the effects of disclosure depend on three factors: uncertainty, multi-person settings with conflicts of interest, and information asymmetry. Information asymmetry led to information opacity of annual reports. Financial intermediaries are particularly affected by this issue because of managerial opportunism phenomena and excessive cost of disclosure. In other words, risk disclosures are difficult to understand because of their incomplete nature and often-fragmentary presentation. In addition, users have low confidence in the reliability of quantitative disclosures because they believe that disclosures have low consistency and comparability (CFA, 2016).

This study provides a threefold contribution.

Firstly, it adds knowledge to the debate on the relevance of FIRD provided by banks. Despite the main literature claims that there are many advantages of a good disclosure that results in reduction of the cost of capital, creation of more stability in the whole banking industry and consequent reduction of systemic risk and effective tool for avoiding banking crises, other Scholar argue that there are some disadvantages related to the excessive disclosure due to the complexity of banks' business because markets are unable to incorporate additional information in a beneficial way. Banks often oppose to requirements asking for higher disclosures because they determine significant costs.

In addition, it is possible that users do not know whether the information is bad news or good news, because no further information is usually given. Where given, it is dispersed throughout the annual report (Oliveira et al., 2011). Indeed, especially in the case of banking institutions, financial risk disclosure information is often provided in fragmented way. For example, IFRS 7 requires the presentation of information on maximum credit risk exposure, and Basel Pillar 3 requires information on exposure at default. Although related, these types of credit risk information are sometimes presented hundreds of pages apart, with no cross-referencing between sections. The fragmentary presentation of related information makes it difficult for investors to assess their risk profile. Overall, the relevance of financial instruments risk disclosure is an important tool of helping users to understand the risks associated with on - and off – balance is an evident question for the scientific community, indeed the consequences of the lack of transparency related to financial instruments, already to their complex nature, are now known.

Secondly, the results are also helpful to practitioners as they suggest that quantitative disclosure could be difficult to interpret, so practitioners should made an effort to provide more detailed and clear disclosure in order to help users to asses own appropriate risk levels. Overall, this study demonstrates that the usefulness (or un-usefulness) of financial instruments risk disclosure is still an open issue, so it is important to provide more evidence to this topic investigating, for example, the relevance of the new accounting standard IFRS 9.

Thirdly, this research is important for policy makers – such as the International Accounting Standards Board (IASB) – who have taken significant steps to improve market reporting with IFRS 7, however the effects of its application results in a partial failure because quantitative information is not relevant for investors. A potential reason is that IAS/IFRS are not aligned with the way financial companies manage risk, and that they are not bank-oriented standards (Oliveira et al., 2011). The problem is that IFRS 7 focus only on financial risks, ignoring other kind of risks (such as operational risks) faced by banks. This misalignment can culminate in the dispersal of risk reporting practices throughout an annual report, rendering them incomparable, and imprecise (Woods and Marginson, 2004; Woods et al., 2008). In addition, qualitative and quantitative disclosures often are not aligned and this means that qualitative disclosures

and management discussion are essential to shedding light on quantitative disclosures and overall risk management policy. This problem can be avoided by providing more disclosure to complex measurement and management tools of financial risks, often poorly aligned with the average investor's financial culture. Moreover, auditors should disclose their level of assurance on risk disclosures (CFA, 2016).

Lastly, it is important to focus on communication and not mere compliance, i.e. preparers should adopt a meaningful communication mindset focused on conveying risk exposures and risk management policy effectiveness, as well as fostering a dialogue with investors (CFA, 2016).

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