



The Value Relevance of Risk Disclosure: An Analysis of The Banking Sector

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Abstract

The aim of this study is to test whether financial risk disclosures required by IFRS 7 and Pillar 3 are value relevant for investors to support them in their investment decisions. The sample in the study consists of banks listed on the London, Paris, Frankfurt, Madrid, and Milan Stock Exchanges over an 8-year period, from 2007–2014. Based on the aforementioned standards, we built financial risk disclosure indexes and distinguished different risk categories, qualitative and quantitative, as well as credit, liquidity, and market risk. Our analyses confirm that there is a positive association between bank value and several categories of established risk disclosures. Furthermore, it suggests that disclosure adds value to more traditional risk value measures. Besides, our results suggest that investors pay attention to the strength of the bank authority when using risk disclosures.

Keywords: value relevance; IFRS 7; Pillar 3 Basel II; banking sector; transparency; risk disclosure; European market.

Subject classification codes: JEL code G21, M21, M41

Introduction

Relevant institutions have expressed concerns that bank financial statements do not adequately represent the underlying economics of their investments. In particular, the International Monetary Fund (IMF) stated that using increasingly complex instruments, without relevant and reliable information, could undermine the stability of financial markets (Sgherri & Zoli, 2009). The financial collapse of European banks, which have led either to bankruptcy or significant market losses (e.g. Allied Irish Bank), confirms the dangers related to inappropriate risk disclosures. Consequently, it is not surprising that there is a general call for more transparency to monitor the risks associated with the use of financial instruments.

Hopefully, new disclosure requirements under International Financial Reporting Standard (IFRS) 7 (IASB, 2005a) and Pillar 3 Basel II (BCBS, 2005) will support investors in assigning adequate risk levels in their decisions.

This study investigates the value relevance of the financial risk disclosure of the major listed European banks as required by IFRS 7, as well as by Pillar 3. Since banks are exposed to massive types of financial risks due to the nature of their investments, risk disclosure is especially crucial to understand their business (Abraham & Shrivess, 2014; Diamond & Dybvig, 1983). The financial crisis and the credit crunch that took place around 2008 negatively affected the whole economy (Magnan & Markarian, 2011; Woods, Dowd & Humphrey, 2008) and highlighted concerns that risks should be properly disclosed to allow investors to evaluate the bank's risk profile (Jones, Melis, Gaia & Aresu, 2018).

Due to the specificities of the banks' activities (Boyd & Prescott, 1986; Diamond, 1984), banks are more opaque than non-financial firms (Flannery, Kwan & Nimalendran, 2013; Morgan, 2002). It is noteworthy that, in the absence of information,

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3 moral hazard problems might negatively affect the value of banks since managers might
4 act against the interests of investors, which can have an impact in the global economy.
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8 Consequently, bank regulators and supervisory authorities are prone to promote
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10 rules and recommendations that force financial entities to act in a responsible manner
11 and, to that end, regulators establish capital and information requirements.¹ In particular,
12 the objective of Pillar 3 is “to encourage market discipline by developing a set of
13 disclosure requirements which will allow market participants to assess key pieces of
14 information” (BCBS, 2005, p. 175). To the extent that banks are private entities, they
15 have to comply with accounting standards as well.
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24 The co-existence of prudential rules and accounting standards creates a
25 somewhat confusing scenario, which in some circumstances has been used to achieve
26 specific interests,² but this is not the case when referring to risk disclosure as established
27 in IFRS 7 and Pillar 3. On the contrary, despite the International Accounting Standards
28 Board (IASB) and the Basel Committee on Banking Supervision (BCBS) not formally
29 cooperating when developing their respective standards, they are quasi-identical
30 (Bischof, Daske, Elfers & Hail, 2016). Moreover, the BCBS does not impose a format,
31 and even admits that banks may meet Pillar 3 if they provide the information required
32 by the accounting standards, meaning that a dedicated report is not required.³ However,
33 it is worth noting that, although compliance with IFRS enforcement depends on the local
34 stock exchange, that of BCBS rules rests with the national bank regulators.
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53 ¹ Pillar 3 of Basel II (BCBS 2004) sets out disclosure requirements in relation to capital structure and
54 adequacy (both in qualitative and quantitative terms), as well as risk exposures and assessment processes.
55 Risk management objectives and policies have to be detailed for each separate risk area (e.g. credit,
56 market, operational, banking book interest rate risk, equity).

57 ² The area of provisioning is a good example of this as highlighted in Giner & Mora (2019).

58 ³ The overlap between both standards is explicitly admitted by the IASB in the Basis for Conclusions of
59 IFRS 7: “This guidance is consistent with the disclosure requirements for banks developed by the Basel
60 Committee (known as Pillar 3), so that banks can prepare, and users receive, a single coordinated set of
disclosure about financial risks” (IASB 2005b. BC41).

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3 Like Pillar 3, IFRS 7 aims to increase transparency that is likely to improve
4 market stability (Barth, Landsman, Young & Zhuang, 2014; Bushman, 2016; Bushman
5 & Williams, 2012; Tadesse, 2006). Unlike Pillar 3, IFRS 7 pertains to all entities that
6 are engaged in financial instruments. That said, it should have a stronger impact on the
7 banking sector, where average financial instruments account for more than 90% of total
8 assets and liabilities (Bischof, 2009). Despite IFRS 7 being a principle-based standard
9 devoted to disclosure (Hellman, Carenys & Moya Gutierrez, 2018), it requires both
10 qualitative and quantitative detailed information for each type of financial risk (i.e.
11 credit, market and liquidity risks).
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24 Although some scholars have highlighted that the overall disclosure quality of
25 European entities has increased since the implementation of the new standards (Amoako
26 & Asante, 2013; Bischof, 2009; Bischof & Daske, 2013; Bonetti, Mattei & Palmucci,
27 2012), the linkage between risk disclosure and investor decision making has not been
28 well supported empirically (Acharya & Ryan, 2016; Magnan & Markarian, 2011).
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35 This study aims to fill this gap by analyzing the effects of risk disclosure on the
36 ability of bank financial statements to inform about their value. To that end, we perform
37 a value relevance study. In this strand of literature, accounting figures are deemed value
38 relevant if they have a significant association with the market value of equity, hence
39 they should incorporate information that is relevant —as a primary characteristic of
40 usefulness— for investors to make their decisions (Barth, Beaver & Landsman, 1996).
41 As Ryan, Scapens, and Theobald (2002) note, exploring value relevance represents an
42 important method for assessing the usefulness of accounting information, which is the
43 adequate framework to evaluate if corporate disclosure helps to reduce the information
44 asymmetries between firms and external users.
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3 We complete our study using the banks listed in the stock markets of the five
4 main European countries by gross domestic product (GDP), over an 8-year period, from
5 2007–2014. Consistent with prior value-relevance literature, we follow the Ohlson
6 (1995) framework and measure the value relevance of bank financial information
7 considering the major accounting items (i.e. earnings and book value of equity), but we
8 also include information indexes based on the specific requirements of IFRS 7, which
9 are similar to those established by Pillar 3. We do not focus on compliance and
10 usefulness of the principle approach that is incorporated in IFRS 7, but as in the previous
11 literature, on the specific requirements established in the standard. Manual content
12 analysis is used to attach a score to each observation and compute the risk disclosure
13 indexes.

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15 Our results confirm a significant and positive association between financial risk
16 disclosure and market prices, implying that this information is value relevant.
17 Furthermore, it is important to highlight that only when disclosure is included in the
18 model does risk measures obtained from the main financial statements become relevant.
19 In other words, risk disclosure enhances the value relevance of traditional risk measures.
20 Besides, our results suggest that investors pay attention to the strength of the bank
21 authority when using bank risk disclosures.

22
23 This research provides three contributions. First, it extends existing literature
24 about the relevance of bank financial risk disclosure. Prior literature assumes that the
25 requirements under IFRS 7 and Pillar 3 should contribute to bank transparency, but even
26 after their implementation some authors still state that bank financial risk disclosure is
27 a contentious issue. Our findings document the importance of the roles played by the
28 IASB and the BCBS in achieving more transparency in the banking system. They
29 confirm that risk disclosure requirements increase the ability of the bank financial

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3 statements to inform about their activities and enable investors to support their
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5 investment decisions. This is in line with the recent study by Chartered Financial
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7 Analyst (CFA, 2016) that documents how risk disclosure is widely used by market
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9 participants as part of their risk-analysis task, although they perceive room for
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11 improvement. We argue that the success of the measures will rely on shifting away from
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13 mere tick-box compliance by providing forward-looking information about financial
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15 instruments risk-related practices.
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19 Second, we argue that this study could be beneficial for regulators and policy
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21 makers. The BCBS argues that greater transparency is a significant contributor to the
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23 stability of the banking system. Therefore, supervisors and policy makers are likely to
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25 pay attention to our findings to achieve greater stability when regulatory policies are
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27 implemented.
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31 Lastly, our findings may help the IASB in the development of its project on
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33 Principles of Disclosure, as they show that disclosure adds value to traditional
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35 information included in the main financial statement. Nevertheless, we should insist that
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37 our disclosure indexes have been based on the specific information required by IFRS 7,
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39 hence it does not suggest that a disclosure standard is useful for the users, rather the
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41 detailed requirements that derive from the principle are useful.
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45 The rest of the paper is structured as follows. In section two we provide the
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47 literature review and formulate the hypotheses. Section three explains the research
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49 design and the results, and discussions are presented in section four. The last section is
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51 devoted to the conclusions.
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54 55 **2. Literature Review and Hypotheses Development**

56 57 **2.1. Literature review**

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3 Due to the nature of their investments, banks are exposed to a massive number
4 of financial risks that are difficult to observe (Diamond & Dybvig, 1983). Not only the
5 IMF (2009), but more recent literature also argues that bank financial statements do not
6 adequately represent their underlying economics (Acharya & Ryan, 2016; Becht, Bolton
7 & Röell, 2011; Siregar, Anandarajan & Hasan, 2013). Besides, banks tend to understate
8 losses and smooth earnings (Acharya & Ryan, 2016; Bhat, 1996; Fonseca & González,
9 2008; García Osma, Mora & Porcuna-Enguix, 2019; Lobo, 2017). The result is that bank
10 financial statements are likely to be more opaque than those of non-financial firms
11 (Anandarajan, Francis, Hasan & John, 2011; Dang, Moshirian, Wee & Zhang, 2015;
12 Morgan, 2002; Siregar et al., 2013).

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15 According to the literature, bank opacity may arise in several ways and have a
16 series of unintended consequences. Moral hazard problems, due to information
17 asymmetries, are the main factors leading towards bank opacity. To the extent that
18 investors are not able to monitor and control bank management risk-taking behavior
19 effectively, those problems may affect market stability (Beatty & Liao, 2014; Bushman,
20 2016; Duru, Hasan, Song & Zhao, 2018). However, some scholars argue that if bank
21 financial reporting informs bank exposures in a transparent manner information
22 asymmetry could be reduced (Bushman, 2016; Giner & Mora, 2019; Rochet, 1992).
23 Along these lines, Nier (2005) sustains that transparency reduces the chance of severe
24 banking problems and enhances overall financial stability. Tadesse (2006) found that
25 banking crises are less likely to occur in countries with greater transparency and
26 regulated disclosure. Thus, the quality of the bank financial statements could be crucial
27 to the efficiency of the market. Notwithstanding, some scholars disagree with such a
28 view, they argue that transparency may lead to inefficiency (Chen & Hasan, 2006; Van
29 den Heuvel, 2012) and reputational contagion, since knowing about a bank failure
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3 reduces investor confidence in the entire system (Morrison & White, 2013).
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5 Furthermore, it has also been argued that bank opacity increases financial stability, as
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7 non-reporting practices can ensure that investors remain symmetrically uninformed thus
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9 preserving market liquidity (Dang et al., 2015).
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12 The overall regulatory framework on bank disclosure is formulated by a range
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14 of different bodies, not only the BCBS and the national banking supervisors, but also
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16 the accounting standard setters. The effect is that a multitude of rules expand bank
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18 reporting complexity. In 2004, BCBS issued the Basel II Capital Accord consisting of
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20 three Pillars. New rules for capital requirement were embodied in Pillar 1, Pillar 2
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22 referred to banking supervision, and Pillar 3 covered transparency and market discipline.
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24 Pillar 3 requires disclosure of information on both risk management practices and
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26 different types of risk exposures, along with disclosure of other information (such as
27
28 bank financial performance and financial position). A year later, the IASB published
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30 IFRS 7 Financial Instruments: Disclosure, which superseded International Accounting
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32 Standard (IAS) 30 and replaced IAS 32 on disclosure. It is a principles-based standard
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34 (Hellman et al., 2018), but it also provides a set of specific requirements on financial
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36 risk reporting. It requires disclosure about the measurement categories of financial
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38 instruments, as well as the underlying accounting policies, and mandates quantitative
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40 and qualitative financial exposure risk information. Not surprisingly, banks opposed to
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42 standards requiring more disclosure argue that they impose significant costs (Gebhardt,
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44 Reichardt & Wittenbrink, 2004; Mozes, 2002).
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51 The usefulness of more disclosure depends not only on the type of information,
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53 but also on its quality (Beretta & Bozzolan, 2004; Pérignon & Smith, 2010). Thus, many
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55 scholars are skeptical about the potential benefits of more financial risk disclosure
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57 suggesting that, due to the managers' attitudes and the complexity of many financial
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3 instruments, markets are unable to incorporate additional information in a beneficial
4 way (Hassan & Mohd-Saleh, 2010; Hassan, Romilly, Giorgioni & Power, 2009; Hodder,
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6 Koonce & McAnally, 2001; Siregar et al., 2013).
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10 Two main streams of studies are distinguished in the accounting-related
11 literature: those that deal with disclosure compliance and those that focus on the
12 relevance of disclosure. Regarding the first group, Bischof (2009) documented that the
13 level of bank risk disclosure has increased over time. Specific compliance with IAS 32
14 has been widely investigated in different contexts, such as Lopes and Rodrigues (2007)
15 in Portugal, Othman and Ameer (2009) in Malaysia, and Tahat, Dunne, Fifield and
16 Power (2016a) in Jordan. The general conclusion is that there are systematic differences
17 across firms regarding risk disclosures details, for both qualitative and quantitative
18 financial risk information. This problem is exacerbated with the adoption of IFRS 7, as
19 it has been highlighted in other contexts. Thus, for a sample of 171 European banks,
20 Bischof (2009) revealed that disclosures significantly increased when IFRS 7 was first
21 adopted in 2007, although the author finds that a substantial number of banks were not
22 fully complying with the new rules. The first year after the implementation of IFRS 7 is
23 also analyzed by Bamber and McMeeking (2010), who examined non-financial FTSE
24 100 firms in the UK. They showed that firms disclose more details than those required
25 by the standard. Bischof and Ebert (2015) conducted an analysis on German and French
26 banks from 2005 to 2009 highlighting that banks do not report reliable disclosures
27 regarding the impact of the reclassifications of financial assets from fair value into cost
28 categories, as requested by IFRS 7. Consistent with these studies, the 2012 review
29 analysis by the European Security Market Authority (ESMA, 2013) revealed variability
30 in the information provided by European banks after implementing IFRS 7. In a different
31 context, Malaysia, Tauringana and Chithambo (2016) found that the extent of
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3 compliance with the IFRS 7 risk disclosure requirements by listed companies in 2009
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5 was very low.
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8 As for the second type of studies, the usefulness of disclosure for investors
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10 remains doubtful. Some studies conclude that bank financial statements are unhelpful in
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12 assessing investor risk exposure, since risk reporting is unclear and not adequately
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14 forward-oriented (Jones et al., 2018; Linsley & Lawrence, 2007; Linsley, Shrivess &
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16 Crumpton, 2006; Maffei, Aria, Fiondella, Spanò & Zagaria, 2014; Magnan &
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18 Markarian, 2011; Oliveira, Lima Rodrigues & Craig, 2011; Woods et al., 2008).
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20 Concerning the usefulness of reporting on derivatives and other financial instruments
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22 for UK banks, an early study by Woods and Marginson (2004) documented that
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24 disclosure is not useful as numerical data are incomplete, not comparable, and narrative
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26 reporting is generic in nature. Baumann and Nier (2004) investigated whether
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28 disclosures on interest rate risk, credit risk, liquidity risk, and market risk by banks listed
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30 in 31 different markets worldwide are useful for investors. They found a negative
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32 relationship between bank risk disclosure and the volatility of equity returns. Finally,
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34 Bonetti et al. (2012) investigated the disclosure of sensitivity analysis on currency risk
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36 mandated by IFRS 7, by non-financial Italian firms and showed that the market reaction
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38 to changes in foreign exchange rate is aligned with quantitative information. We argue
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40 that, to some extent, these contradictory results could be due to the different items and
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42 contexts under analysis.
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51 2.2. Hypotheses development

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53 These conflicting views create a demand for more empirical research to
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55 understand if financial risk disclosure requirements support stability, in the sense that
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57 transparency is helpful for investment decision making (Bushman & Smith, 2001). More
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3 specifically, the question of whether mandated requirements for financial risk
4 information in the banking sector enables investors to make proper investment decisions
5 remains unresolved.
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10 Using the assumption that investors make their decisions considering what is
11 observable, we understand that financial accounting information should exert an
12 influence on market prices. Thus, instead of focusing on one type of risk, we adopt a
13 broader approach and consider the items listed in IFRS 7 that are also consistent with
14 Pillar 3 (see Appendix A) and test the following alternative hypothesis:
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21 H1: The financial risk disclosure requirements are relevant for market investors
22 in banks.
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26 This study also aims to identify if investors value differently the various risk
27 categories. Botosan and Plumlee (2002) argue that the nature of disclosure is crucial to
28 any analysis as the market might respond differently. Specifically, in line with Pillar 3,
29 IFRS 7 requires both qualitative and quantitative financial risk disclosure items. The
30 quantitative disclosure requirements are likely to be mandated to make the appropriate
31 links with the financial statements, while the qualitative requirements are mainly
32 oriented towards adding value to the recognized transactions and enhance the
33 understanding of the business model, so that cash flows can easily be forecasted.
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44 As mentioned earlier, ESMA (2013) notes wide variability in the quality of the
45 information. The main absences are the lack of links between quantitative and narrative
46 information on financial risks, as well as the lack of financial risk information to be
47 reconciled with the primary financial statements, which might affect the usefulness of
48 such disclosures for investors. We use this result as an opportunity to further explore
49 whether the different natures of financial risk disclosures play a relevant role for
50 investors, and formulate the following two additional hypotheses:
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3 H1a: The qualitative financial risk disclosure requirements are relevant for
4 market investors in banks.
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7 H1b: The quantitative financial risk disclosure requirements are relevant for
8 market investors in banks.
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13 14 15 **3. Research design**

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17 We perform a value relevance study, which has been frequently used in literature
18 on bank accounting (Agostino, Drago & Silipo, 2011; Ahmed & Takeda, 1995; Barth,
19 1994; Barth, Beaver & Landsman, 1996; Duru et al., 2018; Eccher, Ramesh &
20 Thiagarajan, 1996; Manganaris, Spathis & Dasilas, 2015, 2016; Park, Park & Ro, 1999;
21 Song, Thomas & Yi, 2010; Tahat, Dunne, Fifield & Power, 2016b). This framework
22 considers the ability of earnings and book value of equity in explaining market value as
23 a proxy for the information value of bank financial statements. We perform the
24 following basic equation, which is consistent with the Ohlson (1995) model:
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$$35 \quad MVS = \beta_0 + \beta_1 EPS + \beta_2 BVPS + \varepsilon \quad (1)$$

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37 where:

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39 MVS is market value per share at the end of the reporting period, EPS is net income per
40 share, and BVPS is book value of common equity per share. All variables are deflated
41 by the number of shares outstanding to avoid the scale effect (Aledo, García Lara,
42 González & Grambovas 2019; Barth & Clinch, 2009; Easton, 1999; Venter, Emanuel &
43 Cahan 2014).
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54 To test our hypotheses, we include the disclosure indexes in basic model (1), as
55 well as some additional variables that have been influential in prior studies. Next, we
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3 explain how we compute variables and in the subsequent section we display the full
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5 models.
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10 3.1 The measurement of variables

11 *The financial risk disclosure indexes*

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14 The indexes are based on the qualitative and quantitative disclosure requirements
15 on credit, market, and liquidity risks specified in IFRS 7, which are substantially the
16 same as those in Pillar 3. Therefore, our index score represents an overlap between the
17 two standards. The data used in this study were hand-collected from the notes to the
18 financial statements. As in prior studies (Alotaibi & Hussainey, 2016; Oliveira et al.,
19 2011; Siregar, Djakman, Maharani, Farahmita, & Ningrum, 2016; Tauringana &
20 Chitambo, 2016; Woods et al., 2008), content analysis is adopted as our framework to
21 identify financial risk disclosure practices. The unit of analysis is crucial for this
22 research method and, as in Woods et al. (2008), we define it as information provided in
23 narrative, tabular, or numerical format.
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37 Reliability, that is, accuracy in measuring the disclosed information, is a key
38 issue in this research approach. As highlighted by Marston and Shrives (1991), awarded
39 index scores can be assumed reliable if other researchers can obtain the same findings.
40 To achieve this, we apply a binary coding methodology to each of the disclosure items
41 included in our list. Thus, each item receives a score of 1 if the information is provided,
42 otherwise it gets a score of 0.
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51 In this paper, we use an unweighted system because all risk items are assumed
52 to have the same importance level. Moreover, this procedure is coherent with the
53 approach adopted by other scholars who argue that the result of the unweighted
54 procedure is similar to those obtained with weighted systems (Alotaibi & Hussainey,
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2016; Oliveira et al., 2011; Robins & Austin, 1986; Wallace, Naser & Mora, 1994; Woods et al., 2008). It also reduces potential practical problems.

Following prior studies (Alotaibi & Hussainey, 2016; Cooke, 1989; Taurinaga & Chingtao, 2016; Wallace & Naser, 1995; Woods et al., 2008), the entire notes were read to decide if all types of risks were applicable to a bank and to establish whether the bank was exposed to that type of risk. No case of non-applicable risk disclosure was found in our sample, therefore in principle all banks should provide details about the identified risk items, which once more simplifies practical difficulties in determining the score. Furthermore, although the subjectivity inherent in the process cannot be completely removed, we tried to limit it by having each note scored by two PhD students under the supervision of a senior researcher. In case of uncertainty about a specific item, a consultation among the researchers was made to reach an agreed final score.

The Total Financial Risk Disclosure Index (TFDI) is computed by dividing the total number of risk disclosure items provided by a bank over the total amount of potential risk disclosure items required and identified in Appendix A:

$$TFDI_{ij} = \frac{\sum_{i=1}^n x_i}{n}$$

where:

$x_i = 1$ if item i is disclosed by bank j , 0 otherwise

$n =$ total number of potential disclosure items (no. 24), thus, $0 \leq TFDI \leq 1$

We divide the overall index into two sub-indexes and develop a qualitative financial risk disclosure index (QL) and a quantitative financial risk disclosure index (QN), where n equals 9 and 15, respectively.

Control variables

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3 Since 2007, when the global financial crisis started, the amount of non-
4 performing loans (NPL) significantly increased in the balance sheets of banks, affecting
5 both liquidity and profitability, and thereby the financial stability of the whole financial
6 system (Makri, Tsagkanos & Bellas, 2014). Furthermore, as Anandarajan et al. (2011)
7 evidence, the risk level of financial entities may influence the value relevance of the
8 accounting numbers. Consequently, we include a control variable which is the
9 percentage of NPLs over the total loans that appear in a bank balance sheet.
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19 In addition, we add some other control variables that characterize banks and that
20 might affect the value relevance of financial information. Thus, based on the different
21 activities that banks perform, two main categories can be established: commercial banks
22 and investment banks. Usually, in commercial banks, investments are renewed over time
23 and long-term relationships exist. Instead, in investment banks, relationships with
24 customers conclude when investments expire and are hardly renewed (Boot & Thakor,
25 2000). Moreover, commercial banks are the main players in the industry and have high
26 levels of public visibility, while investment banks are under greater scrutiny. To this
27 end, we test the impact of the type of bank on the association between financial risk
28 disclosures and value relevance. Thus, we introduce an indicator variable to capture the
29 bank activity (C_I).
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44 Multinational banks usually have multiple listings, consequently they face a
45 variety of accounting and reporting requirements in addition to those of their respective
46 home countries (Meek, Roberts, & Gray, 1995). The more attention placed on these
47 entities, the more likely the accounting figures will be under greater scrutiny by
48 investors, hence they may have greater value relevance. We consider the cross-listing
49 status (CL) of the bank as another indicator variable.
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3 As it is common in the value relevance studies dealing with more than one
4 country, we also add some control variables to consider the specificity of the institutions.
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6 The extent of bank's involvement in the private sector may condition transparency, since
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8 the more involved they are the greater need they have to generate relevant information
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10 to meet the user information needs. Similar to Anandarajan et al. (2011), we add the
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12 corporate-environment (CE) indicator variable (Hasan & Malkamaki, 2001).
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17 Prior studies also document the importance of the financing environment
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19 (Anandarajan et al., 2011; Bushman & Smith, 2001). Thus, in market-oriented countries,
20
21 investors strongly rely on financial accounting disclosures to obtain information to be
22
23 used in security valuation and monitoring management. Instead, in bank-oriented
24
25 countries there is less public financial information because investors have a close
26
27 relationship with banks which might lead credit intermediaries to not provide value
28
29 relevant information (Ali & Hwang, 2000; Guenther & Young, 2000; Saudagaran &
30
31 Biddle, 1995). To control for the financing environment, we include the financing-
32
33 system (FS) indicator variable.
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37
38 Yet, the state of the economy is also expected to affect value relevance. The GDP
39
40 is the most comprehensive measure of a country's economic activity. Similar to prior
41
42 studies (Burgstahler & Dichev, 1997; Dontoh, Radhakrishnan & Ronen, 2007; Duru et
43
44 al., 2018; Guenther & Young, 2000), we include the economic environment (EE) to
45
46 control for the country-wide economic activity that is likely to affect the quality of the
47
48 bank financial reporting.
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52 Furthermore, given the overlap of IFRS 7 and Pillar 3, we consider the effect of
53
54 heterogeneity in the regulatory supervision of central banks relative to that of stock
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56 exchanges in the control of compliance with risk disclosure rules and add a new variable:
57
58 Heterogeneous Strength (HS). This variable controls for the different abilities of the
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3 bank supervisor and the market regulator in each jurisdiction to enforce prudential and
4
5 accounting standards, respectively.⁴ We obtain this variable as the average of the
6
7 following four variables employed by Bischof et al. (2016): (i) Relative Bank
8
9 Supervisory Staff that compares the number of staff dedicated to bank supervision with
10
11 the staff dedicated to general securities market supervision, (ii) Relative Power of Bank
12
13 Supervisor that measures the monitoring powers and enforcement strength of bank
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15 supervision and the general enforcement of financial accounting standards, (iii)
16
17 Involvement in Accounting Standards Setting that captures the involvement of the
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19 banking regulator in the general accounting standard setting process, and (iv)
20
21 Involvement in Financial Statement Reviews that proxies the involvement of the
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23 banking regulator in the review of financial statements. Table 1 provides the details
24
25 about this variable.
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31 INSERT TABLE 1 ABOUT HERE
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33 Lastly, since IFRS 7 entered in force for fiscal years beginning on or after
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35 January 2007 and Pillar 3 became effective officially in 2007 in the EU,⁵ it is likely that
36
37 most banks provided that information in 2007. However, we do not discard that there
38
39 could be either a delay in disclosing by banks or in the use of such information by market
40
41 investors. Thus, we introduce a binary variable for each year under investigation.
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43

44 Table 2 summarizes the variables used in the analysis and the data sources.
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47 INSERT TABLE 2 ABOUT HERE
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⁴ The primary goal of a bank regulator is to ensure sound and prudent bank management, as well as the
53 overall stability, efficiency, and competitiveness of the financial system, while those of a market regulator
54 is the regulation and control of securities markets, including accounting and auditing matters, the
55 supervision of audit firms, and the recommendation of auditing and accounting standards. See Appendix
56 B for further details on these institutions in the countries under study.

57 ⁵ EU countries had to comply with the Basel II rules from January 2007, as they were legally bounded to
58 that after the EU passed the Capital Requirements Directive in September 2005. Nevertheless, some banks
59 delayed the implementation till 2008.
60

3.2 The regression models

Based on the basic model (1), we added the additional independent variables step by step and measure the incremental value relevance comparing the R^2 (Beisland, 2009; Brown, Lo & Lys, 1999; Collins, Maydew & Weiss, 1997).

First, as explained in section 3.1, we introduced the NPL variable, resulting in model (2),

$$MVS = \beta_0 + \beta_1EPS + \beta_2BVPS + \beta_3NPL + \varepsilon \quad (2)$$

Next, we added the other control variables capturing firm characteristics, as well as institutional factors that were defined in 3.1, resulting in model (3),

$$MVS = \beta_0 + \beta_1EPS + \beta_2BVPS + \beta_3NPL + \beta_4C_I + \beta_5CL + \beta_6CE + \beta_7FS + \beta_8EE + \varepsilon \quad (3)$$

where:

C_I is 1 for commercial banks, 0 otherwise; CL is 1 for cross-listed banks, 0 otherwise; CE is the percentage of credit outstanding to the private sectors to GDP; FS is 1 for market-oriented system, 0 for bank-oriented systems; and EE is percentage change in GDP. Other variables were defined earlier.

After including the variables of interest, namely those related to the financial risk disclosure indexes, we obtained the following full model (4)

$$MVS = \beta_0 + \beta_1EPS + \beta_2BVPS + \beta_3NPL + \beta_4C_I + \beta_5CL + \beta_6CE + \beta_7FS + \beta_8EE + \beta_9Index + \varepsilon \quad (4)$$

where:

$Index$ can be either TFDI, the total financial risk disclosure index, QL, the qualitative financial risk disclosure index, or QN, the quantitative financial risk disclosure index.

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Lastly, following Bischof et al. (2016), we included the heterogeneity in the regulatory supervision of banks on their compliance with risk disclosure rules, by adding the variable HS, as well as dichotomous year variables, resulting in the following model (5):

$$\begin{aligned} MVS = & \beta_0 + \beta_1 EPS + \beta_2 BVPS + \beta_3 NPL + \beta_4 C_I + \beta_5 CL + \beta_6 CE + \beta_7 FS + \beta_8 EE + \beta_9 Index \\ & + \beta_{10} HS + \beta_{11} Y2007 + \beta_{12} Y2008 + \beta_{13} Y2009 + \beta_{14} Y2010 + \beta_{15} Y2011 + \beta_{16} Y2012 + \\ & \beta_{17} Y2013 + \varepsilon \end{aligned} \quad (5)$$

Sample selection

As in Jones et al. (2018), we selected all commercial and investment banks in the five largest European economies by GDP (France, Germany, Italy, Spain, and the UK), as provided by the IMF.⁶ All banks included in our initial sample were also members of the BCBS when Basel II Pillar 3 was approved. The period under study is 2007-2014. Using the Thomson Reuters database, we obtained 1,370 observations. We excluded the following observations: those with missing financial data (789), those without English financial statements (32), and those with a negative book value of equity (1). Consequently, the total sample includes 548 observations.

To identify extreme observations that could affect regression analyses, we performed the Cook's distance and excluded 39 observations. The final unbalanced sample contains 509 observations, corresponding to the entire 2007-2014 period in a quite consistent manner as displayed in Table 3, Panel A.

⁶ See www.imf.org

In Table 3, Panel B we report the final sample composition by year and country, which is similar to those used in recent studies on the European banking sector.⁷ In 2014, the highest number of banks is from Italy (20), followed by France (19), Germany (12), and the UK (9). The lowest number of banks is from Spain (6).

INSERT TABLE 3 ABOUT HERE

4. Results

4.1 Descriptive statistics

Table 4 shows the descriptive statistics. MVS (in thousands of euros) fluctuates from a minimum of 0.19 to a maximum of 131.69 as the sample includes both small and large European banks; the mean is 35.73. These results are consistent with Agostino et al. (2011) who conduct a value relevance study in the European banking industry from 2000 to 2006. EPS (in thousands of euros) has a mean of 10.33 and BVPS has a mean of 130.17.

Regarding the other variables, NPL has a mean value of 9%, which is low despite the period under study; the mean value of CL indicates that 38% of the sample is composed of multinational cross-listed banks. Commercial banks (C_I) represent the majority of the sample (82%). As for the institutional country controls, CE has a mean of 1.22, indicating that European banks are highly invested in the private sector. In Anandarajan et al. (2011) the ratio is 0.965 for an earlier period, 1993-2004. FS indicates that, on average, 33% of the banks in the sample are in market-oriented economies. EE,

⁷ Thus, Bischof (2009) uses a sample of 8 French, 12 German, 14 Italian, 10 Spanish and 8 British banks in 2006-2007; Agostino et al. (2011) consider a larger sample of 34 French, 30 German, 31 Italian, 14 Spanish and 17 British banks in an earlier period 2000-2006; Barakat and Hussainey (2013) have 4 French, 7 German, 14 Italian, 6 Spanish and 8 British banks in 2008-2009-2010; Manganaris et al. (2015; 2016) use 25 French, 10 German, 31 Italian, 14 Spanish and 9 British banks; Siregar et al. (2016) consider 5 UK banks in 2008; Duru et al. (2018) use 18 French, 9 German, 20 Italian, 14 Spanish and 9 British banks in 2001, 2003, 2007, 2012; Jones et al. (2018) analyze 10 French, 9 German, 17 Italian, 6 Spanish and 5 British banks from 2006 to 2010, and García Osma et al. (2019) consider 18 French, 6 German, 17 Italian, 5 Spanish and 8 British banks for a larger period 2000-2013.

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3 the percentage change in GDP from one year to another, is 0.21%, which is very low,
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5 but the standard deviation is quite high.
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8 Looking at the financial instrument disclosure indexes, the minimum score of 0
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10 informs that at least one bank never complied with the requirements in a particular year.
11
12 The qualitative index (QL) shows a maximum value of 1, indicating full compliance,
13
14 and a mean of 0.69; while the maximum values of the quantitative (QN) and total
15
16 indexes (TFDI) are 0.86 and 0.92 achieving mean values of 0.67 and 0.68, respectively.
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18 Not surprisingly, compliance is greater with qualitative than quantitative information.
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22 Lastly, HS has a mean score of 0.45, and as Table 1 shows, the UK and Germany
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24 have the lowest scores (respectively 0 and 0.25), suggesting a stronger market authority
25
26 than the banking one. The highest score corresponds to Spain (0.75), followed by France
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28 and Italy (both 0.50), consistent with the argument that the financial market of these
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30 countries is mainly bank-oriented (Ali & Hwang, 2000).
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33 INSERT TABLE 4 HERE ABOUT HERE

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35 Table 5 reports the Pearson correlations between the variables. The dependent
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37 variable, MVS, is positively and significantly correlated with EPS, FS, EE, C_I, the
38
39 three disclosure indexes and HS, while MVS is negatively and significantly correlated
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41 with NPL and CE. Despite the correlations between the independent variables, they are
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43 not high, thus multicollinearity does not appear to be an issue in this study.
44
45 Notwithstanding we perform the variance inflation factor (VIF) in the regression
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47 analysis. Correlation among the financial risk disclosure indexes is not a problem, since
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49 we performed separate regression models.
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4.2 Regression results and discussion

Table 6, Panel A provides the results of the Ordinary Least Squares (OLS) regressions. Reported VIF values confirm the absence of multicollinearity problems. Firstly, we include the base model (1) that regresses the main accounting figures on MVS. Both book value and earnings have positive coefficients and are highly significant with respect to equity valuation (p-value 1%); the adjusted R^2 is 41%.

Next, we report model (2) that adds NPL to the base model; the coefficients of the base model remain consistent, but the new variable NPL is not statistically significant. In next column the results of model (3) are reported; leaving aside EE, the control variables are statistically significant at 1%, and the positive sign of C_I, CL and FS, is consistent with prior studies (Ali & Hwang 2000; Anandarajan et al., 2011; Ball, Kothari & Robin, 2000; Burgstahler, Hail & Leuz, 2006; Hodder, Hopkins & Wahlen, 2006). The FS variable documents that other things being equal in a bank-oriented environment banks have lower market value than in a market-oriented system. Although CE is also significant at 1% level, the coefficient is negative, which suggests that market participants perceive as risky the involvement of banks in the private sector. A possible explanation is that after the Basel agreements, the larger the credit to private sectors the higher the level of capital adequacy required. The adjusted R^2 increases up to 51%.

Full model (4), with each of the three disclosure indexes (TFDI, QL and QN), is included in the next three columns. The index coefficients are positive and statistically significant (TFDI and QN have a p-value of 1%, while QL has a p-value of 5%) suggesting that investors consider the qualitative and quantitative components of financial risk disclosure relevant separately, as well as the overall risk disclosure index. Regarding the other variables, all of them remain consistent to prior estimations, the only exception is NPL that becomes statistically significant, documenting that the

1
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3 disclosure indexes add information about the bank's risks, as reported in the primary
4 financial statements. These results suggest that the transparency achieved through risk
5 disclosure is considered by investors when establishing market prices, which gives
6 support to the belief that bank transparency benefits the stock market (Bischof, 2009).
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8 In other words, the increased disclosure has a significant impact on the usefulness of
9 banks' financial statements as a whole. Therefore, we can reject the three null
10 hypotheses, and provide support to our alternative ones.
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19 The results of model (5), which aims to control for the overlapping of IFRS 7
20 and Pillar 3, are displayed in the last three columns of Panel A, Table 6.
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24 As in Bischof et al. (2016), our results confirm that having a strong banking
25 authority, captured by HS, is positively perceived by investors, besides the coefficient
26 of the three indexes are larger than those in model (4). Similarly, Manganaris et al.
27 (2015) find that after the adoption of IFRS, value relevance is strengthened when banks
28 operate in high enforcement environments. These results are consistent with Agostino
29 et al. (2011), as long as the effectiveness of information is enhanced when the regulatory
30 environment pressures banks to be more transparent. In other words, it is likely that
31 investors positively value the enforcement exercised by a strong bank regulator (Barth,
32 Caprio & Levine, 2013; Brown, Preiato & Tarca, 2014). The results for the other
33 variables remain fairly consistent with previous estimations.
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47 As for the year variables, only 2007, which is the implementation year for both
48 IFRS 7 and Pillar 3, is statistically significant. This result is somehow surprising given
49 that there was some delay in the adoption of Pillar 3, and contradicts Bischof et al. (2016)
50 who find an increase in risk disclosure after the adoption of Pillar 3. Nevertheless,
51 differences could be due to the sample composition, as we include five EU countries
52 compared to more than 30 countries around the globe in Bischof et al. (2016). This
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result, in any case, should be interpreted with caution since further investigation is required to specifically measure the value relevance of the two standards separately.

In order to have a broader understanding on whether the disclosure indexes have a significant improvement power in terms of value relevance, we also ran Hierarchical Linear Model (HLM) regressions. HLM offers valuable insights on the percentage of the variance error derived by each step in the HLM. In particular, the aim is to test whether the indexes in model (4) have an incremental value relevance over model (3).

As displayed in Panel B, Table 6, the incremental value of R^2 is greater for QN and TFDI (p-value < 1%) than for QL. This is comparing any model (4) with model (3). The comparison of the R^2 of model (4) with QN and QL suggests that the quantitative information adds more information value than the qualitative information to the other explanatory variables (p-value < 1%). Lastly, we compare the R^2 of models (5) and (4), and confirm that after adding the HS variable and the year variables, the three models with the indexes have more explanatory power (p-value at 1%).

INSERT TABLE 6 HERE ABOUT HERE

4.3 Robustness tests

In this section, we report further tests to confirm our main findings. First, we introduce an interaction term that combines the HS variable with the index in each of the three versions of model (5), resulting the following model (6).

$$\begin{aligned} MVS = & \beta_0 + \beta_1 EPS + \beta_2 BVPS + \beta_3 NPL + \beta_4 C_I + \beta_5 CL + \beta_6 CE + \beta_7 FS + \beta_8 EE + \beta_9 Index \\ & + \beta_{10}(Index \times HS) + \beta_{11} HS + \beta_{12} Y2007 + \beta_{13} Y2008 + \beta_{14} Y2009 + \beta_{15} Y2010 + \beta_{16} Y2011 \\ & + \beta_{17} Y2012 + \beta_{18} Y2013 + + \varepsilon \end{aligned} \quad (6)$$

where:

Index can be either TFDI, QL or QN. All other variables were explained earlier.

Results are reported in Table 7 and confirm previous results. The interaction of the disclosure indexes with the variable that captures the heterogeneous relative strength of bank regulators is positive and highly significant (p-value < 1% for interactions with TFDI and QL; p-value < 5% for interactions with QN). This suggests that risk disclosure information is more relevant when banks are under the control of a strong bank authority. Also comparing the R^2 , we conclude that model (6) is more informative than model (5).

INSERT TABLE 7 ABOUT HERE

In addition to these reported robustness tests, we have performed other non-reported tests. First, we have run models (5) and (6) without year variables, and results remain consistent. Second, we computed the aforementioned models replacing the HS variable by its components: Relative Bank Supervisory Staff (RBS), the Involvement in Accounting Standards Setting (InvolvAss), and the Involvement in Financial Statement Reviews (InvolvFSR)⁸. Main findings are confirmed only when using the InvolvFSR, suggesting that the controlling task exercised by the bank regulator is well perceived by investors.

4.4 Additional tests

The last analysis follows a different approach and investigates if there are differences in the value relevance of the three different risk categories: credit risk, liquidity risk, and market risk. Thus, we split the TFDI in three indexes: the credit risk disclosure index (D_CR) which includes 10 items, the liquidity risk disclosure index (D_LIQ) which includes 6 items, and the market risk disclosure index (D_MKT) which has 8 items. Also in this case, these indexes are computed by dividing the total number of risk disclosure items provided by a bank over the total amount of potential risk

⁸ We have excluded Rpower because it has the same value (see tab. 1) for all the examined countries.

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3 disclosure items required and identified in the Appendix A. Consequently, they are
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5 between 0 and 1 as well. We ran full model (5) again in which the variable Index is,
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7 respectively, D_CR, D_LIQ and D_MKT.
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10 As Table 8 reports, both credit risk disclosure and liquidity risk disclosure are
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12 statistically significant at 5% and 1% respectively, but market risk disclosure is not. The
13
14 results for the other variables are consistent with those reported earlier.
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17 Credit risk is the primary risk in the banking sector, mainly linked to the lending
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19 activities, and its importance grew during the financial crisis due to securitization. Our
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21 results are in accordance with those of Uhde, Farruggio and Michalak (2012), who
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23 confirm that information related to these activities appears of fundamental importance
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25 to investors. Furthermore, investors may pay attention to the so-called concentration risk
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27 disclosure, which is a nuance of credit risk information (BCBS, 2005; ECB, 2008).
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29 These two arguments help to better understand why disclosures about credit risk
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31 captures the attention of investors (Donovan, Jennings, Koharki & Lee 2018). Not
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33 surprisingly, the importance of the liquidity risk information that explains interest rate
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35 differentials has grown, especially after the financial crisis because it signals the trend
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37 of spread, which in turn explains volatility in the market (IMF, 2009).
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44 We also replicate model (6) using these three new indexes; thus, we interact each
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46 of them with the HS variable. The results reported in Table 9 remain consistent with
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48 those provided earlier, although market risk financial disclosure is now significant. The
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50 interaction term in the three models is significant as well (p-value < 5%), suggesting
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52 that the strength of the bank authority adds relevance to risk disclosure.
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5. Conclusions

Despite investors considering bank transparency as crucial for their investment decisions, due to the nature of bank activities and the related information asymmetries, risk-taking actions by bank managers tend to be rather opaque. Thus, analysts and regulators have expressed concerns that bank financial statements do not adequately represent the underlying economics of bank investments. Moreover, prior studies questioned the usefulness of risk-related reporting practices, and although some provide evidence consistent with stronger bank regulations enhancing bank stability, there is still scarce evidence regarding the specific effect of risk disclosure on information asymmetry and bank transparency.

Our study aims to fill this gap by analyzing the value relevance of financial risk disclosures in a sample of European listed banks from 2007-2014. To that end, we create several indexes based on the specific requirements in IFRS 7 that overlap those also established in Pillar 3. IFRS 7 entered in force in 2007, the same year in which Pillar 3 became effective officially in the EU. For this reason, this research documents a greater value relevance under both requirements and also captures the heterogeneous strength of the bank supervisor compared with the market one in each jurisdiction, additional investigation is needed to disentangle the effect of both standards.

Overall, this study documents that reliance on the financial risk disclosures, both quantitative and qualitative, results in relevant information, which suggests more transparency for the users. In particular, the specific requirements in IFRS 7 provide incremental information content beyond earnings and book value, and enhance the usefulness of the risk measures that derive from the primary financial statements. In some way, this result contradicts those that claim that risk disclosure about financial instruments is difficult to understand, uninformative, unreliable, not comparable, and

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2
3 not integrated with the overall risk management system (CFA, 2016). As for the nature
4 of disclosure, our results suggest that investors value the quantitative information more
5 than the qualitative information. Regarding disclosures about the different categories of
6 risks, credit risk and liquidity risk are likely the most relevant, particularly when the
7 central bank's authority is greater. Therefore, our results suggest that investors
8 positively perceive the strength of the bank regulator.
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17 This research provides several contributions. First, it complements the value
18 relevance literature in the banking industry with new evidence. The positive link of the
19 disclosure indexes with market prices evidences that disclosures requirements on
20 financial risks are perceived as useful by investors, and add value to other numerical
21 information included in the primary statements.
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29 Second, this study supports investors, among other users, who call for more
30 transparency from banks to monitor the risks associated with the use of financial
31 instruments. This is especially the case after the financial crisis that highlighted concerns
32 about the appropriate risk pricing and capital allocation. Third, this study might be
33 beneficial for regulators and standard setters who try to improve risk disclosure. In
34 particular, we think it could be useful in the development of the IASB's project on
35 Principles of Disclosure whose aim is to issue new or clarify existing principles of
36 disclosure in IFRS. Our study is based on information required by IFRS 7, hence it does
37 not suggest that a disclosure standard per se is useful for the users, but the detailed
38 requirements that derive from the principle are useful. Consequently, along the line of
39 Hellman et al. (2018), we argue that it would be convenient that high-level principles of
40 disclosure are complemented by specific requirements which could more easily
41 enforceable, audited, and even analyzed by academics. Lastly, our results suggest that
42 the value relevance of financial risk disclosures is highly influenced by the power of the
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3 banking regulator rather than that exercised by the market, hence investors recognize
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5 the banking regulator monitoring role to ensure the overall stability, efficiency, and
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7 competitiveness of the financial system. This could be a red flag for market regulators
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9 that should strengthen their role about the supervision of audit firms, and the
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11 recommendation of auditing and accounting standards.
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14 The study has some limitations, which may constitute fertile areas for future
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16 research. It covers only the financial sector, while a broader investigation on both
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18 financial and non-financial sectors could be advocated. Besides, due to the lack of
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20 necessary information, the sample under study is relatively small. It only refers to the
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22 post IFRS 7 and Pillar 3 period, consequently we cannot argue that the standards
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24 improved risk disclosure.
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Appendix A. Financial risks checklist provided by IFRS 7 and Pillar 3

Pillar 3	IFRS 7
Credit Risk	
Discussion credit risk management (e.g. definition past-due/impaired, approach for general and specific allowances)	QL: the exposures to risk and how they arise
	QL: its objectives, policies and processes for managing the risk and the methods used to measure the risk
	QL: any changes from the previous period.
	QN: information about the credit quality of financial assets that are neither past due nor impaired
Total gross credit risk exposures (that is, after accounting offsets in accordance with the applicable accounting regime and without taking into account the effects of credit risk mitigation techniques, e.g. collateral and netting)	QN: 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 (e.g. 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
Description of collateral received for financial assets neither past due nor impaired	QN: 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 prior QN or represented by the carrying amount of a financial instrument)
Amount of impaired loans and if available, past due loans, provided separately. Banks are encouraged also to provide an analysis of the ageing of past-due loans.	QN: an analysis of the age of financial assets that are past due as at the end of the reporting period but not impaired
	QN: 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
	QN: the nature and carrying amount of the assets
	QN: when the assets are not readily convertible into cash, policies for disposing of such assets or for using them in its operations
Market Risk	
Discussion of market risk management (general methods)	QL: the exposures to risk and how they arise
	QL: the objectives, policies and processes for managing the risk and the methods used to measure the risk
	QL: any changes from the previous period.

<p>Description of the characteristics of the value at risk (VaR) model/sensitivity analysis used; If VaR applied: high, mean and low VaR values over the reporting period; If VaR applied: back-testing results on the VaR analysis; Are there specific quantitative disclosures on the interest rate risk in the banking book?</p>	<p>QN: 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</p>
	<p>QN: the methods and assumptions used in preparing the sensitivity analysis</p>
	<p>QN: an explanation of the method used in preparing such a sensitivity analysis, and of the main parameters and assumptions underlying the data provided</p>
	<p>QN: 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</p>
	<p>QN: 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</p>
Liquidity Risk	
	<p>QL: the exposures to risk and how they arise</p>
	<p>QL: the objectives, policies and processes for managing the risk and the methods used to measure the risk</p>
	<p>QL: any changes in the two QL above from the previous period.</p>
<p>Maturity analysis for financial assets and liabilities, funding gap, expected maturities of financial liabilities/assets</p>	<p>QN: maturity analysis for non-derivative financial liabilities (including issued financial guarantee contracts) that shows the remaining contractual maturities</p>
	<p>QN: 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</p>
	<p>QN: description of how the entity manages the liquidity risk inherent in the two QN above</p>

QL = qualitative risk disclosure item; QN = quantitative risk disclosure item

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4 **Appendix B. Bank supervisors and market regulators in each jurisdiction under**
5
6 **investigation**
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10 In France the banking supervisor is the Prudential and Resolution Control Authority (ACPR),
11 operating under the auspices of the French central bank (Banque de France), while the
12 Minister of Economy and the Financial Markets Authority (AMF) have significant regulatory
13 market powers in respect of the Financial Security Law (Loi de sécurité financière).⁶
14

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16 The market regulator in Germany is the Federal Financial Supervisory Authority
17 (Bundesanstalt für Finanzdienstleistungsaufsicht – BaFin) and the banking regulator is the
18 German Central Bank (Deutsche Bundesbank – Bundesbank) which closely cooperate for the
19 supervision of financial institutions.
20

21 In Italy the Bank of Italy is responsible for the banking industry, while the Commissione
22 Nazionale per le Società e la Borsa (CONSOB) operates as market regulator.
23
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25 Similarly, the Spanish bank regulator is the Bank of Spain, while the Comisión Nacional del
26 Mercado de Valores is the market regulator authority.
27

28 Lastly, the Bank of England acts as bank regulator in UK, while other institutions (i.e. the
29 Prudential Regulation Authority, the Financial Conduct Authority, the Panel on Takeovers
30 and Mergers, the Financial Policy Committee, the Financial Reporting Council) act as market
31 supervisors.
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Tables

Table 1

Construction of Heterogeneous Strength (HS) of the Bank Supervisory Authority variable

Countries	Strength of Bank Supervisory Authority (Relative to Market Supervisory Authority)				HS
	Relative Bank Supervisory Staff	Relative power of Bank Supervisor	Involvement in Accounting Standard Setting	Involvement in Financial Statement Reviews	
France	5.21 (1)	0.59 (0)	No (0)	Yes (1)	0.50
Germany	10.18 (1)	0.81 (0)	No (0)	No (0)	0.25
Italy	0.89 (0)	0.54 (0)	Yes (1)	Yes (1)	0.50
Spain	1.37 (1)	0.81 (0)	Yes (1)	Yes (1)	0.75
UK	0.45 (0)	0.74 (0)	No (0)	No (0)	0

For each variable raw values and (in parentheses) the values of binary indicators are reported. Relative Bank Supervisory Staff is number of full-time employees working for the bank regulator divided by the number of staff dedicated to general securities market supervision. These numbers are scaled by the total market capitalization of banks and all listed firms in the economy, respectively (1 if the number of staff dedicated to bank supervision is larger than the number of staff dedicated to general securities market supervision, 0 otherwise). Relative Power of Bank Supervisor compares two indices of monitoring powers and enforcement strength, one specific to bank supervision and one capturing the general enforcement of financial accounting standards (1 if the strength of external bank audits by the bank supervisor is greater than the general enforcement of financial accounting standards, 0 otherwise). Involvement in Accounting Standards Setting is involvement of the banking regulator in the general accounting standard setting process (1 if it is actively involved, 0 otherwise). Involvement in Financial Statement Reviews is involvement of the banking regulator in the review of financial statements (1 if it is actively involved, 0 otherwise). HS is heterogeneous relative strength of bank authorities and is the average of the four aforementioned indicators.

Source: Bischof et al. (2015)

Table 2

Variables used in the value relevance analysis: definition and data source

Variable	Definition	Source
Dependent variable		
MVS	Market capitalization over number of outstanding shares	Thomson Reuters
Independent variable		
EPS	Earnings over number of outstanding shares	Thomson Reuters
BVPS	Book value of equity over number of outstanding shares	Thomson Reuters
NPL	Risk profile: Total non-performing loans over total loans	Thomson Reuters
C I	Type of bank activity: 1 for commercial banks, 0 otherwise	Thomson Reuters
CL	Listing status: 1 for cross-listed banks, 0 otherwise	Thomson Reuters
CE	The percentage of credit outstanding to the private sectors to GDP	Bureau van Dijk
FS	Market vs banking-oriented country: 1 for market-oriented system, 0 otherwise	Bureau van Dijk
EE	The percentage change in GDP	Bureau van Dijk
TFDI	Total financial instruments risk disclosure required by IFRS 7	Bank Annual report
QL	Qualitative financial instruments risk disclosure required by IFRS 7	Bank Annual report
QN	Quantitative financial instruments risk disclosure required by IFRS 7	Bank Annual report
HS	Heterogeneous relative strength of bank authorities in the regulatory supervision of banks on their compliance with risk disclosure rules. It is the average of four variables: <i>Relative Bank Supervisory Staff</i> , <i>Relative Power of Bank Supervisor</i> , <i>Involvement in Accounting Standards Setting</i> and <i>Involvement in Financial Statement Reviews</i> . See Table 1 for details.	Bischof et al. (2016)
Y2007- Y2013	Years	

Table 3

Sample selection and composition by country

<i>Panel A: Selection</i>	2007	2008	2009	2010	2011	2012	2013	2014	Total
Initial sample	162	170	170	171	172	174	177	174	1,370
Missing financial data	95	99	99	99	98	99	103	97	789
Non-English financial statement	4	4	4	4	4	4	4	4	32
Negative book value	-	-	-	-	-	1	-	-	1
Total sample	63	67	67	68	70	70	70	73	548
Outliers– Cook’s Distance	5	4	4	4	5	5	5	7	39
Total final sample	58	63	63	64	65	65	65	66	509
<i>Panel B: Composition</i>	2007	2008	2009	2010	2011	2012	2013	2014	Total
France	18	19	18	17	19	19	19	19	148
Spain	4	5	6	6	7	6	7	6	47
Germany	11	11	11	12	12	12	12	12	93
Italy	18	19	19	19	17	17	18	20	147
UK	7	9	9	10	10	11	9	9	74
Total final sample	58	63	63	64	65	65	65	66	509

Table 4

Descriptive statistics of variables used in the value relevance analysis

(euro/000)	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
MVS	0.19	131.69	35.73	49.40
EPS	-167.80	223.21	10.33	33.51
BVPS	0.02	253	130.17	370.70
NPL	0	0.94	0.09	0.16
C_I	0	1	0.82	0.39
CL	0	1	0.38	0.49
CE	0.27	2.12	1.22	0.27
FS	0	1	0.33	0.47
EE	-5.50	3	0.21	1.99
QL	0	1	0.69	0.27
QT	0	0.86	0.67	0.21
TFDI	0	0.92	0.68	0.21
HS	0	0.75	0.45	0.20

MVS is market value per share at the end of the reporting period; EPS is net income per share; BVPS is book value of common Equity per share; NPL is non-performing loans on total loans variable; C_I is bank activity, 1 for commercial banks and 0 otherwise; CL is the multinational status, 1 for cross-listed banks, 0 otherwise; CE is the corporate environment proxied by the percentage of credit outstanding to the private sectors to GDP, FS is the financing system, 1 for market-oriented system, 0 otherwise; EE is the economic environment, captured by the percentage change in GDP; QL is the qualitative financial risk disclosure index; QN is the quantitative financial risk disclosure index; TFDI is the total financial risk disclosure index; HS is the heterogeneous relative strength of bank authorities in the regulatory supervision of banks.

Number of observations is 509.

Table 5

Pearson correlations for the variables used in the value relevance analysis

	MVS	EPS	BVPS	NPL	C_I	CL	CE	FS	EE	QL	QN	TFDI	HS
MVS	1												
EPS	0.14** *	1											
BVPS	0.07	0.77***	1										
NPL	-0.08*	-0.20***	-0.15***	1									
C_I	0.16** *	0.11**	0.13***	-0.19***	1								
CL	-0.03	-0.25***	-0.20***	0.28***	0.46***	1							
CE	-0.09**	-0.10**	-0.10**	0.22***	-0.24***	0.33** *	1						
FS	0.30** *	-0.12***	-0.20***	0.00	-0.08*	-0.01	-0.01	1					
EE	0.11**	0.12***	0.07	-0.04	0.01	-0.08*	-0.08*	0.18** *	1				
QL	0.13** *	0.00	0.05	-0.02	-0.09**	0.24** *	0.21** *	0.03	0.09* *	1			
QN	0.11**	-0.20***	-0.19***	0.01	-0.17***	0.31** *	0.42** *	0.29** *	0.01	0.65** *	1		
TFDI	0.13** *	-0.12***	-0.09**	-0.00	-0.15***	0.30** *	0.36** *	0.20** *	0.05	0.88** *	0.93** *	1	
HS	0.15**	0.12**	0.09**	0.00	0.03	0.05	0.08	0.18	0.19	0.22**	0.21**	0.24**	1

MVS is market value per share at the end of the reporting period; EPS is net income per share; BVPS is book value of common Equity per share; NPL is non-performing loans on total loans variable; C_I is bank activity, 1 for commercial banks and 0 otherwise; CL is the multinational status, 1 for cross-listed banks, 0 otherwise; CE is the corporate environment proxied by the percentage of credit outstanding to the private sectors to GDP, FS is the financing system, 1 for market-oriented system, 0 otherwise; EE is the economic environment, captured by the percentage change in GDP; QL is the qualitative financial risk disclosure index; QN is the quantitative financial risk disclosure index; TFDI is the total financial risk disclosure index; HS is the heterogeneous relative strength of bank authorities in the regulatory supervision of banks.

Table 6

Value relevance including basic variables, controls and interest variables (total, qualitative and quantitative indices)

Panel A: Ordinary Least Square (OLS) regression results

	Mod (1)	VIF	Mod (2)	VIF	Mod (3)	VIF	Mod (4)	VIF	Mod (4)	VIF	Mod (4)	VIF	Mod (5)	VIF	Mod (5)	VIF	Mod (5)	VIF
							TFDI		QL		QN		TFDI		QL		QN	
Constant	1.19 (51.1)***		1.18 (25.68)***		0.96 (6.64)***		0.87 (5.88)***		0.90 (6.00)***		0.88 (5.98)***		0.63 (3.42)***		0.70 (3.66)***		0.64 (3.52)***	
EPS	0.45 (16.08)***	1.48	0.40 (11.86)***	2.00	0.32 (9.88)***	2.26	0.31 (9.64)***	2.37	0.31 (9.27)***	2.37	0.32 (10.01)***	2.26	0.30 (9.22)***	2.91	0.30 (8.80)***	2.91	0.31 (9.63)***	2.91
BVPS	0.01 (5.22)***	1.48	0.04 (2.15)**	1.94	0.07 (2.07)**	2.91	0.07 (2.19)**	2.91	0.07 (2.13)**	2.91	0.07 (2.23)**	2.92	0.10 (2.92)***	1.11	0.10 (2.84)	1.11	0.10 (2.95)***	1.11
NPL	-	-	0.04 (0.24)	1.05	0.25 (1.58)	1.09	0.32 (1.99)**	1.11	0.29 (1.81)*	1.11	0.33 (2.06)**	1.13	0.47 (2.78)***	1.59	0.42 (2.52)	1.59	0.48 (2.84)***	1.59
C_I	-	-	-	-	0.32 (4.44)***	1.59	0.32 (4.42)***	1.59	0.32 (4.48)***	1.59	0.31 (4.35)***	1.59	0.05 (0.31)	1.64	0.31 (4.33)***	1.64	0.30 (4.17)***	1.64
CL	-	-	-	-	0.25 (4.53)***	1.57	0.21 (3.85)***	1.64	0.22 (4.05)***	1.64	0.21 (3.84)***	1.64	0.42 (6.99)***	1.21	0.19 (3.41)***	1.21	0.18 (3.18)***	1.21
CE	-	-	-	-	-0.32 (-3.64)***	1.19	-0.38 (-4.20)***	1.21	-0.35 (-3.87)***	1.21	-0.41 (-4.39)***	1.31	-0.40 (-4.41)***	1.44	-0.36 (-3.99)***	1.44	-0.43 (-4.64)***	1.44
FS	-	-	-	-	0.36 (6.77)***	1.44	0.34 (6.48)***	1.44	0.36 (6.85)***	1.44	0.33 (6.04)***	1.51	0.18 (3.16)***	1.09	0.44 (7.22)***	1.09	0.40 (6.55)***	1.09
EE	-	-	-	-	0.01 (0.43)	1.09	0.01 (0.43)	1.09	0.01 (0.36)	1.09	0.01 (0.53)	1.09	0.30 (4.25)***	1.10	0.08 (-0.48)	1.10	-0.01 (-0.10)	1.10
TFDI	-	-	-	-	-	-	0.26 (2.64)***	1.10	-	-	-	-	0.32 (3.20)***	1.12	-	-	-	-
QL	-	-	-	-	-	-	-	-	0.14 (1.90)**	-	-	-	-	-	0.18 (2.45)***	1.10	-	-
QN	-	-	-	-	-	-	-	-	-	-	0.31 (2.92)***	1.34	-	-	-	-	0.37 (3.42)***	1.10
HS	-	-	-	-	-	-	-	-	-	-	-	-	0.20 (1.96)**	1.09	0.29 (1.80)*	1.09	0.31 (2.43)***	1.09
Y2007	-	-	-	-	-	-	-	-	-	-	-	-	0.20 (2.51)***	1.08	0.20 (2.40)**	1.08	0.20 (2.51)***	1.08
Y2008	-	-	-	-	-	-	-	-	-	-	-	-	0.01 (0.13)	1.06	-0.05 (-0.06)	1.06	0.02 (0.25)	1.06
Y2009	-	-	-	-	-	-	-	-	-	-	-	-	0.05 (0.60)	1.07	0.03 (0.37)	1.07	0.07 (0.77)	1.07
Y2010	-	-	-	-	-	-	-	-	-	-	-	-	0.05 (0.63)	1.11	0.04 (0.53)	1.11	0.05 (0.67)	1.11
Y2011	-	-	-	-	-	-	-	-	-	-	-	-	-0.08 (-0.98)	1.10	-0.09 (-1.06)	1.10	-0.08 (-0.96)	1.10
Y2012	-	-	-	-	-	-	-	-	-	-	-	-	-0.03 (-0.31)	1.09	-0.04 (-0.44)	1.09	-0.02 (-0.21)	1.09

Y2013							0.02 (0.19)	1.08	0.01 (0.13)	1.08	0.02 (0.24)	1.08
F	140.89***	79.18***	50.74***	46.60***	45.82***	46.96***	47.80***		47.07***		47.13***	
Adj R ²	0.41	0.38	0.51	0.52	0.51	0.52	0.53		0.52		0.53	

Observations 509

(t statistic); p-value < 1% ***, p-value < 5% **, p-value < 10% *

EPS is net income per share; BVPS is book value of common Equity per share; NPL is non-performing loans on total loans variable; C_I is bank activity, 1 for commercial banks and 0 otherwise; CL is the multinational status, 1 for cross-listed banks, 0 otherwise; CE is the corporate environment proxied by the percentage of credit outstanding to the private sectors to GDP, FS is the financing system, 1 for market-oriented system, 0 otherwise; EE is the economic environment, captured by the percentage change in GDP; QL is the qualitative financial risk disclosure index; QN is the quantitative financial risk disclosure index; TFDI is the total financial risk disclosure index; HS is the heterogeneous relative strength of bank authorities in the regulatory supervision of banks; Y2007-Y2013 indicates the years.

Panel B: Incremental R² of the Hierarchical Linear Model (HLM) regressions

ΔR ² Model (3) – Model (2)		0.135
F		21.10
ΔR ² Model (4) TFDI – Model (3)		0.01
F		6.96***
ΔR ² Model (4) QL – Model (3)		0.001
F		3.62***
ΔR ² Model (4) QN – Model (3)		0.011
F		7.06***
ΔR ² Model (4) QN – Model (4) QL		0.011
F		8.52***
ΔR ² Model (5) TFDI – Model (4) TFDI		0.01
F		7.53***
ΔR ² Model (5) QL – Model (4) QL		0.01
F		8.65***
ΔR ² Model (5) QN – Model (4) QN		0.01
F		8.48***
ΔR ² Model (5) QN – Model (5) QL		0.01
F		9.08***

Observations 509

(t statistic); p-value < 1% ***, p-value < 5% **, p-value < 10% *

QL is the qualitative financial risk disclosure index; QN is the quantitative financial risk disclosure index; TFDI is the total financial risk disclosure index.

Table 7

Value relevance including basic variables, controls, and interest variables (total, qualitative and quantitative) with HS interaction

	Mod (6) TFDI	VIF	Mod (6) QL	VIF	Mod (6) QN	VIF
Constant	5.19(3.73)***		2.44(4.11)***		3.13(1.42)	
EPS	0.30(9.48)***	1.90	0.30(9.14)***	1.90	0.31(9.51)***	1.90
BVPS	0.10(2.84)***	1.11	0.10(2.67)***	1.11	0.10(2.99)***	1.11
NPL	0.46(2.78)***	1.89	0.42(2.54)***	1.89	0.47(2.77)***	1.89
C_I	0.29(4.17)***	1.14	0.31(4.40)***	1.14	0.28(4.01)***	1.14
CL	0.18(3.17)***	1.21	0.20(3.60)***	1.21	0.17(3.02)***	1.21
CE	-0.32(-3.52)***	1.24	-0.30(-3.40)***	1.24	-0.40(-4.30)***	1.24
FS	0.42(7.16)***	1.09	0.44(7.32)***	1.10	0.40(6.61)	1.09
EE	-0.04(-0.27)	1.10	-0.07(-0.46)	1.09	-0.01(-0.08)	1.10
TFDI	0.14(3.11)***	2.12	-	-	-	-
TFDI×HS	0.94(3.31)***	2.15	-	-	-	-
QL	-	-	0.21(2.84)***	2.10	-	-
QL×HS	-	-	0.44(3.12)***	2.20	-	-
QN	-	-	-	-	0.26(2.99)**	2.10
QN×HS	-	-	-	-	0.58(2.37)**	2.13
HS	0.91(3.19)***	1.09	0.31(2.84)***	1.09	0.47(2.17)**	1.09
Y2007	0.18(2.23)***	1.08	0.18(2.20)***	1.08	0.20(2.42)***	1.08
Y2008	-0.03(-0.04)	1.06	-0.15(-0.18)	1.06	0.02(0.20)	1.06
Y2009	0.03(0.35)	1.07	0.02(0.22)	1.07	0.06(0.68)	1.07
Y2010	0.04(0.46)	1.11	0.03(0.41)	1.11	0.05(0.62)	1.11
Y2011	-0.10(-1.22)	1.10	-0.10(-1.22)	1.10	-0.08(-1.03)	1.10
Y2012	-0.05(-0.60)	1.09	-0.05(-0.65)	1.09	-0.02(-0.29)	1.09
Y2013	-0.05(-0.07)	1.08	-0.05(-0.06)	1.08	0.01(0.17)	1.08
F	47.60***		48.07***		47.63***	
Adj R ²	0.54		0.56		0.53	

EPS is net income per share; BVPS is book value of common Equity per share; NPL is non-performing loans on total loans variable; C_I is bank activity, 1 for commercial banks and 0 otherwise; CL is the multinational status, 1 for cross-listed banks, 0 otherwise; CE is the corporate environment proxied by the percentage of credit outstanding to the private sectors to GDP, FS is the financing system, 1 for market-oriented system, 0 otherwise; EE is the economic environment, captured by the percentage change in GDP; QL is the qualitative financial risk disclosure index; QN is the quantitative financial risk disclosure index; TFDI is the total financial risk disclosure index; HS is the heterogeneous relative strength of bank authorities in the regulatory supervision of banks; Y2007-Y2013 indicates the years

Table 8

Value relevance including basic variables, controls and interest variables (credit risk, liquidity risk and market risk)

	Mod (5) D_CR	VIF	Mod (5) D_LIQ	VIF	Mod (5) D_MKT	VIF
Constant	0.89(4.07)***		0.75(3.41)***		0.82(4.03)***	
EPS	0.31(9.43)***	1.90	0.30(9.01)***	1.90	0.31(9.29)***	1.90
BVPS	0.10(2.74)***	1.11	0.09(2.65)***	1.11	0.09(2.67)***	1.11
NPL	0.35(2.12)**	1.89	0.35(2.08)**	1.89	0.35(2.09)***	1.89
C_I	0.31(4.30)***	1.14	0.31(4.33)***	1.14	0.31(4.30)***	1.14
CL	0.23(4.15)***	1.21	0.22(4.03)***	1.21	0.23(4.11)***	1.21
CE	-0.34(-3.75)***	1.24	-0.32(-3.53)***	1.24	-0.33(-3.70)***	1.24
FS	0.43(6.82)***	1.09	0.42(6.93)***	1.10	0.42(6.91)***	1.09
EE	-0.04(-0.28)	1.10	-0.05(-0.34)	1.09	-0.04(-0.28)	1.10
D_CR	0.10(2.55)**	1.10	-	-	-	-
D_LIQ	-	-	0.09(2.51)***	1.10	-	-
D_MKT	-	-	-	-	0.01(0.98)	-
HS	0.22(2.40)**	1.09	0.21(2.33)**	1.09	0.23(1.35)	1.09
Y2007	0.17(2.13)**	1.08	0.17(2.14)**	1.08	0.17(2.13)**	1.08
Y2008	-0.01(-0.17)	1.06	-0.01(-0.17)	1.06	-0.01(-0.16)	1.06
Y2009	0.03(0.34)	1.07	0.03(0.29)	1.07	0.03(0.33)	1.07
Y2010	0.03(0.40)	1.11	0.03(0.41)	1.11	0.03(0.39)	1.11
Y2011	-0.10(-1.20)	1.10	-0.10(-1.16)	1.10	-0.09(-0.15)	1.10
Y2012	-0.04(-0.49)	1.09	-0.04(-0.49)	1.09	-0.04(-0.46)	1.09
Y2013	0.01(0.15)	1.08	0.01(0.13)	1.08	0.01(0.15)	1.08
F	47.60***		48.07***		47.65***	
Adj R ²	0.52		0.52		0.54	

EPS is net income per share, BVPS is book value of common Equity per share; NPL is non-performing loans on total loans variable, and C_I, bank activity, 1 for commercial banks and 0 otherwise. CL, the listing status, 1 for cross-listed banks, 0 otherwise, CE is the corporate environment proxied by the percentage of credit outstanding to the private sectors to GDP, and FS is the financing system, 1 for market-oriented system, 0 otherwise. EE is the economic environment is captured by the percentage change in GDP, D_CR is the credit risk disclosure index, D_LIQ is the liquidity financial risk disclosure index, D_MKT is market financial risk disclosure index, HS is the heterogeneous relative strength of bank authorities in the regulatory supervision of banks, and Y2007-Y2013 indicates the years.

Table 9

Value relevance including basic variables, controls and interest variables (credit risk, liquidity risk and market risk) with HS interaction

	Mod (6) D_CR	VIF	Mod (6) D_LIQ	VIF	Mod (6) D_MKT	VIF
Constant	0.22(0.29)		0.65(1.84)*		0.28(0.86)	
EPS	0.30(8.99)***	1.90	0.31(8.99)***	1.90	0.29(8.54)***	1.90
BVPS	0.10(2.88)***	1.11	0.09(2.66)***	1.11	0.12(3.14)***	1.11
NPL	0.37(2.23)**	1.89	0.35(2.37)**	1.89	0.42(2.48)**	1.89
C_I	0.30(4.23)***	1.14	0.31(4.37)***	1.14	0.28(3.92)***	1.14
CL	0.23(4.12)***	1.21	0.22(4.01)***	1.21	0.23(4.16)***	1.21
CE	-0.36(-3.85)***	1.24	-0.33(-3.55)***	1.24	-0.33(-3.75)***	1.24
FS	0.44(6.88)***	1.09	0.42(6.93)***	1.10	0.44(7.20)***	1.09
EE	-0.05(-0.36)	1.10	-0.01(-0.39)	1.09	-0.01(-0.41)	1.10
D_CR	0.81(2.83)***	2.22	-	-	-	-
D_CR×HS	1.81(2.93)**	2.25	-	-	-	-
D_LIQ	-	-	0.26(2.51)**	2.10	-	-
D_LIQ×HS	-	-	0.36(2.35)**	2.20	-	-
D_MKT	-	-	-	-	0.78(2.20)**	2.10
D_MKT×HS	-	-	-	-	1.74(2.04)**	2.13
HS	1.62(2.27)**	1.09	0.42(2.68)**	1.09	1.37(2.34)**	1.09
Y2007	0.18(2.19)**	1.08	0.17(2.17)**	1.08	0.19(2.29)**	1.08
Y2008	-0.01(-0.10)	1.06	-0.01(-0.12)	1.06	0.05(0.06)	1.06
Y2009	0.04(0.40)	1.07	0.03(0.29)	1.07	0.04(0.44)	1.07
Y2010	0.04(0.50)	1.11	0.04(0.44)	1.11	0.05(0.65)	1.11
Y2011	-0.10(-1.20)	1.10	-0.10(-1.16)	1.10	-0.09(-1.11)	1.10
Y2012	-0.04(-0.47)	1.09	-0.01(-0.49)	1.09	-0.04(-0.50)	1.09
Y2013	0.01(0.15)	1.08	0.01(0.15)	1.08	0.02(0.19)	1.08
F	51.60***		50.03***		51.47***	
Adj R ²	0.52		0.52		0.52	

EPS is net income per share; BVPS is book value of common Equity per share; NPL is non-performing loans on total loans variable; C_I, bank activity, 1 for commercial banks and 0 otherwise; CL is the listing status, 1 for cross-listed banks, 0 otherwise; CE is the corporate environment proxied by the percentage of credit outstanding to the private sectors to GDP; FS is the financing system, 1 for market-oriented system, 0 otherwise; EE is the economic environment is captured by the percentage change in GDP; D_CR is the credit risk disclosure index; D_LIQ is the liquidity financial risk disclosure index; D_MKT is market financial risk disclosure index; HS is the heterogeneous relative strength of bank authorities in the regulatory supervision of banks; Y2007-Y2013 indicates the year.