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Value Relevance of the Fair Value Hierarchy of IFRS 7 in Europe - How reliable are mark-to-model Fair Values?

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Value Relevance of the Fair Value Hierarchy of IFRS 7 in Europe – How reliable are mark-to-model Fair Values?

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Abstract

According to IFRS 7, banks have to disclose the inputs used in measuring the fair value of financial instruments. For this purpose the standard defines a three-level measurement hierarchy. The reliability of fair values is expected to decrease with decreasing hierarchy level due to the lower quality of the input factors. Using a value relevance research setting, I find that investors perceive the reliability of level 3 fair values as significantly lower than the reliability of level 1 fair values. However, in contrast to expectations, level 2 fair values are not perceived as less reliable. Thus, investors only doubt the reliability of fair values whose inputs are based on discretionary assumptions. Additionally, this paper analyses the impact of the reclassification of financial assets and of the regulatory capital ratio on the reliability of fair values. While I find a weakly significant impact of the regulatory capital ratio, the reclassification has in general no influence on the reliability of reported fair values.

Keywords: Fair Value Hierarchy, Reclassification, Reliability, Value Relevance

JEL Classification: C23, G14, G21, M41

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1 Introduction

Fair value accounting has been one of the most controversial issues in financial reporting over the last 20 years. Proponents argue that full fair value accounting (FFVA) improves market discipline and reveals risks from maturity transformation and changes in credit risks earlier than historic cost accounting. Thus, it can reduce the procyclicality of the financial system. Opponents, on the other hand, argue that FFVA increases earnings and equity volatility, reduces the resilience of financial institutions against financial shocks, and lacks reliability when markets are inactive and valuation models have to be used to measure fair values (e.g. Enria et al. (2004)). Nevertheless, the International Accounting Standards Board (IASB) continually expanded the application of fair values in IFRS.[1]

During the financial crisis, the debate about fair value accounting, especially for financial instruments, gained momentum (see for a broad discussion Laux and Leuz (2009)). Fair value accounting was again criticized for being unreliable. The reliability of fair values has been widely discussed before in the value relevance research (e.g. Barth (1994), Barth et al. (1996), Nelson (1996)). This research can be seen as an instrument to operationalize IASB's most important qualitative characteristics of decision useful accounting information, relevance and reliability (Barth et al. (2001)).[2] While fair values undoubtedly possess relevance for economic decision making, a lack of reliability can diminish the value relevance of fair values significantly. A vast majority of value relevance studies finds evidence that fair values are overall value relevant and have incremental explanatory power in comparison to historic cost measures. Nonetheless, several studies show that fair values of illiquid financial instruments are significantly less value relevant than fair values of liquid financial instruments (e.g. Petroni and Wahlen (1995), Eccher et al. (1996)). Accordingly, illiquid financial instruments are perceived as less reliable by investors. Since market illiquidity was one of the major problems during the subprime crisis, this supports the current criticism of fair value accounting for financial instruments.

[1] Some observes even supposed that the IASB was following a hidden agenda to introduce FFVA. See e.g. Whittington (2008).

[2] In the new Conceptual Framework the IASB replaces reliability by faithful representation. However, Barth (2007) argues that the new term is just a more accurate specification of reliability. Hence, I will use the term reliability instead of faithful representation throughout this paper.

The IASB reacted to the reliability issue and increased the disclosure requirements concerning the fair value measurement of financial instruments by amending IFRS 7 Financial Instruments: Disclosures. Entities applying IFRS now have to disclose financial instruments measured at fair value by using a three-level hierarchy. The levels of this fair value hierarchy are based on the quality of the input factors used in the measurement process. Level 1 inputs are quoted prices in active markets, level 2 inputs include all observable data other than quoted prices, and level 3 inputs comprise all non-observable data. This fair value hierarchy is equivalent to the hierarchy of SFAS 157 (now Topic 820), albeit limited to financial instruments, and anticipates the disclosure requirements established in IFRS 13 Fair Value Measurement. Any measurement based on inputs of the first level of this hierarchy is also labelled as mark-to-market, while fair value measurement based on inputs of lower levels is called mark-to-model, which Warren Buffett famously denounced as mark-to-myth (Buffett (2003)). Even though he said that mark-to-model only in rare cases declines to a mark-to-myth, it can clearly be stated that the reliability of fair values is decreasing with a decreasing measurement level. The reduced reliability of level 2 and level 3 fair values arises from two factors. First, model-based fair values can be biased due to unintentional measurement errors. Second, management can deliberately use discretion in fair value measurement for earnings management. Thus, fair values based on mark-to-model might be noisy measures of the "true" value. Goh et al. (2009), Kolev (2008), and Song et al. (2010) investigate the value relevance of this fair value hierarchy for the U.S. market. They show that fair values of all hierarchy levels are value relevant. However, as expected, fair values based on level 2 or 3 inputs are significantly less value relevant than fair values based on quoted prices.

Another concern about fair value accounting for financial instruments was its procyclical effect on the financial sector. This effect occurs when banks adjust their balance sheet structures following asset price changes (e.g. Plantin et al. (2008)). If prices of assets which are marked to market decrease, leverage ratios increase, and regulatory capital requirements can necessitate banks to sell assets to reduce their leverage. These asset sales might further depress asset prices. Therefore, European politicians pressed the IASB during the financial crisis to relax fair value accounting for financial instruments by allowing banks to reclassify their financial assets measured at fair value to categories which require amortized cost measurement. The IASB conceded and created new reclassification options by amending IAS 39 Financial Instruments:

Recognition and Measurement. Studies of Bischof et al. (2010) and Kholmy and Ernstberger (2010) analyze which intentions banks pursued by reclassifying financial assets. Bischof et al. (2010) find that banks reclassified financial assets to avoid a violation of regulatory capital requirements. Kholmy and Ernstberger (2010) analyze additionally whether profitability might have had an impact on reclassification decisions. The authors conclude that banks use the new reclassification options for general earnings management.

This study focusses on the first concern about fair values, i.e. the lack of reliability. Therefore, the fair value hierarchy for financial instruments is examined in a value relevance research setting similar to Song et al. (2010). However, it extends the existing literature (Goh et al. (2009), Kolev (2008), Song et al. (2010)) by analyzing, for the first time, the value relevance and the reliability of the IFRS 7 fair value hierarchy based on the financial data of European banks. Furthermore, this study covers a longer time period than prior studies. While Goh et al. (2009), Kolev (2008), and Song et al. (2010) focus on data from 2008, I use financial data from 2006 to 2010. The results show that fair values of all measurement levels are value relevant. Further, level 3 fair values are significantly less reliable than level 1 or level 2 fair values. In a next step, the study analyzes the impact of regulatory capital and of reclassification decisions on the reliability of mark-to-model fair values. In contrast to the results of Goh et al. (2009), it can be shown that the regulatory capital ratio has no significant influence on the reliability of level 3 fair values. Additionally, notwithstanding the results of Bischof et al. (2010) and Kholmy and Ernstberger (2010) that banks use the new reclassification option for earnings management and to avoid violating regulatory requirements, capital markets do not perceive mark-to-model fair values of reclassifying banks as less reliable than fair values of non-reclassifying banks.

In the next Section the institutional background, i.e. the relevant accounting standards, is discussed. Section 3 summarizes the related literature and discusses the contribution of this study. Section 4 contains the empirical investigation, including sample selection, hypotheses development, empirical modelling, and results. Section 5 concludes.

2 Institutional Background

I will refer to IAS 39 and IFRS 7 throughout this study without considering IFRS 9 and IFRS 13. IFRS 9 Financial Instruments and IFRS 13 Fair Value Measurement, which were issued in 2009 and 2011 respectively, have amended both IAS 39 and IFRS 7. While IFRS 13 was not applicable during the sample period, the IASB would have allowed an early voluntary application of IFRS 9 starting with November 2009. However, the European Commission has not endorsed the new standard until today. Therefore, the sample banks could not apply the new accounting standards during the sample period.

2.1 IFRS 7 - Fair Value Hierarchy

IAS 39.9 defines fair value as "the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction." From this definition follows that the fair value is a measure which is closely related to the market value. Yet, it cannot be assumed that fair and market values are identical in all cases, because fair values can be based on valuation models. IAS 39 defines a hierarchy for the measurement of fair values of financial instruments. The quoted market price of a financial instrument is always the best estimate for the fair value if an active market exists. However, if there is no active market, entities have to use established valuation approaches to measure the fair value of a financial instrument. In this case, the reliability of the fair value deteriorates because of two reasons. First, the model-based valuation might include an undeliberate measurement error. Second, entities could use the discretion in valuation models to manage earnings. Hence, mark-to-model fair values might be noisy measures of the "true" values. For financial markets it is thus vital to get information about the fair value hierarchy because accounting information has to be both relevant and reliable to be useful for decision making. While markets usually do not doubt the relevance of fair values for the decision making process, the reliability of fair values became more important at the climax of the last financial crisis. Although IFRS 7 required some disclosures regarding the measurement of fair values prior to 2009, entities did not have to disclose separately which amount of financial instruments measured at fair value was based on valuation models.

Eventually, the IASB reacted to the information needs of capital market participants and amended IFRS 7 in March 2009 (IASB (2009)). This amendment implemented an input-based measurement hierarchy for financial instruments (IFRS 7.27A). There are three levels of inputs:

- Level 1: Quoted market prices of identical financial instruments.
- Level 2: Inputs based on observable market data.
- Level 3: Inputs not based on observable market data.

Entities have to classify their financial instruments measured at fair values according to this input hierarchy. The level of a fair value is determined by the lowest level of significant inputs used in the valuation process. The amendment does not only define this fair value hierarchy but adds several quantitative disclosure requirements regarding the fair value measurement (IFRS 7.27B). For example, entities have to disclose significant transfers between different measurement levels and a reconciliation from the opening balance to the closing balance for level 3 fair values. But most important for this study, entities have to make quantitative disclosures regarding the fair values measured at the different levels of the fair value hierarchy.

When it adopted this fair value hierarchy for financial instruments, the IASB clearly followed SFAS 157 (now Topic 820) and anticipated the results of the Fair Value Measurement Project (IFRS 13). However, this "new" measurement hierarchy can rather be seen as a further specification of the hierarchy defined in IAS 39 and, accordingly, fair values based on level 2 and 3 inputs should suffer from a reduced reliability.

2.2 IAS 39 - Reclassification of Financial Instruments

The second major issue regarding fair value accounting during the financial crisis was the reclassification of financial instruments. Generally, in IFRS, similar to US-GAAP, the measurement of financial instruments is determined by a classification of these instruments at initial recognition in one of five categories. While the categories "at fair value through profit or loss" (AFV) and "available for sale" (AFS) require a measurement at fair value, the categories "held to maturity" (HTM), "loans and receivables" (LAR), and "other liabilities" (OL) demand a measurement at amortized costs. Prior to the amendment to IAS 39 and IFRS 7 from October 2008 (IASB

(2008)), the reclassification options were very limited. An entity could only reclassify financial instruments, without facing sanctions, from the category AFS to the category HTM. In addition, entities could reclassify financial instruments from the category HTM to the category AFS, but would face sanctions if reclassifying more than an insignificant amount. The IASB's intention behind these very limited reclassification options was to restrain earnings management. Politicians however, concerned about the procyclical effect of fair value accounting, at the climax of the financial crisis pressed the IASB to relax reclassification rules. The EU Commission even threatened the IASB with another carve-out from IAS 39 that would allow European firms to reclassify financial instruments (McCreevy (2008)). Eventually, the IASB conceded to the political pressure and amended IAS 39 and IFRS 7, primarily to avoid new reclassification options without accompanying disclosure requirements (Bischof et al. (2010)). The amendment did not follow the IASB's due process for standard-setting, went effective retroactively in July 2008 and had no impact on the existing reclassification options. Thus, it can clearly be identified as an emergency measure.

The new reclassification rules allow entities to reclassify financial assets from the trading to the banking book, i.e. from categories which require measurement at fair value to categories which require measurement at amortized costs (IAS 39.50-50F). More precisely, entities can now reclassify financial assets held for trading into the categories AFS, HTM and LAR and financial assets available for sale into the category LAR. However, entities are not allowed to reclassify financial derivatives and financial instruments which were designated at initial recognition as AFV. Furthermore, financial assets can only be reclassified from AFV into AFS or HTM in rare circumstances. The definition of a rare circumstance is, however, somewhat imprecise. The IASB assumes that it is due to a "single event that is unusual and highly unlikely to recur in the near term" (IAS 39.BC104D). Therefore, the identification of such a market condition might be open for dispute.

As mentioned before, the IASB conceded to the political pressure because it wanted to avoid new reclassification options without accompanying disclosures. Therefore, the IASB did not only amend IAS 39 in October 2008 but also IFRS 7. According to this amendment, entities are obliged to follow extensive disclosure requirements regarding reclassified financial assets

(IFRS 7.12A). For example, entities have to disclose reclassified amounts, involved categories, carrying amounts, and fair values of financial assets which were reclassified in current or previous reporting periods. Furthermore, entities have to disclose the facts that might indicate that a rare circumstance is existent.

Overall, the new reclassification rules draw criticism. First, the standard-setting process was the result of a severe interference in the independence of the standard-setting body. Second and most important, the relaxed reclassification rules open up new possibilities for earnings management. Hence, the amendment from October 2008 had most likely a negative effect on the overall accounting quality of IFRS.

3 Related Literature

This study is based on the vast body of value relevance literature on fair value accounting for financial instruments. These studies generally find, beginning with Barth (1994), that disclosed (e.g. Ahmed and Takeda (1995), Eccher et al. (1996), Simko (1999)) as well as recognized (e.g. Park et al. (1999), Carroll et al. (2003), Ahmed et al. (2006)) fair values are value relevant and provide investors with incremental information in comparison to historic cost measures. Several studies, however, cast doubt to the value relevance of illiquid financial instruments (Petroni and Wahlen (1995), Eccher et al. (1996)). The results of these studies indicate that market participants perceive the reliability of illiquid financial instruments as substantially deteriorated. This might be due to the fact that entities have to use valuation models to estimate the fair values of these instruments. Hence, the fair values might be only, as argued before, noisy measures of the "true" values. Nevertheless, Carroll et al. (2003) find for their sample of closed-end investment funds that investors do not value fair values of liquid and illiquid financial assets differently. This striking result could be explained by private information an entity can provide by using valuation models. Some evidence for such an effect of private information is provided by Beaver and Venkatachalam (2003). They split loan fair values into discretionary, non-discretionary, and noise components and show that the discretionary component is priced higher by investors than its balance sheet value indicates. The positive effect of discretion on the relevance of accounting

information might thus outweigh its negative effect on reliability. Summing up the evidence, it is not obvious whether the value relevance of model-based fair values is significantly reduced.

More recent studies have focused on the reliability of fair values of financial instruments during the last financial crisis. While Kolev (2008), Goh et al. (2009), and Song et al. (2010) analyze the value relevance of the SFAS 157 fair value hierarchy in 2008, Fiechter and Novotny-Farkas (2011) lay their focus on the value relevance of financial instruments of IFRS-adopting banks for the period from 2006 to 2008. Kolev (2008), Goh et al. (2009), and Song et al. (2010) find that fair values of all measurement levels are value relevant. However, they also show consistently that level 3 fair values have significantly reduced valuation coefficients. Goh et al. (2009) even find evidence that investors perceive level 2 fair values as significantly less value relevant than level 1 fair values. Overall, these findings indicate that the reduced reliability of mark-to-model fair values outweighs any positive effect of private information on the relevance of fair values. The results of Fiechter and Novotny-Farkas (2011) support this notion. They analyze fair values of IFRS-adopting banks, but do not use fair value hierarchy disclosures because they were not obligatory in IFRS until 2009. Instead, they use fair values of financial instruments held for trading and of financial instruments which were designated at initial recognition at fair value through profit or loss. They assume that designated financial instruments are less reliable because it is a discretionary decision to measure them at fair value and banks can use this discretion for earnings management. The authors show that investors, indeed, perceive these fair values as less value relevant than the fair values of financial instruments held for trading. Yet the theoretical foundation of this study is disputable because the discretion in designating financial instruments at fair value is very limited (IAS 39.9b, IAS 39.12A) and the designation is an irrevocable decision.

Additionally, the studies show that the value relevance of mark-to-model fair values is less reduced for banks with better corporate governance (Song et al. (2010)), big-4 auditors, and high regulatory capital (Goh et al. (2009)). Thus, capital markets discount mark-to-model fair values of banks with lower incentives for earnings management less.

Overall, the recent evidence supports the hypothesis that mark-to-model fair values are less reliable than mark-to-market fair values. Nevertheless, there are several limitations to this

conclusion. First, the studies focus on the subprime crisis in 2008 and do not cover the post-crisis period. Hence, the perception of the reliability of mark-to-model fair values could have changed in 2009 or 2010. Second, Kolev (2008), Goh et al. (2009), and Song et al. (2010) analyze the fair value hierarchy only for U.S. banks. Third, the study of Fiechter and Novotny-Farkas (2011), which indeed focuses on fair value accounting in European banks, does not analyze the fair value hierarchy and lacks a convincing theoretical foundation. Accordingly, there is currently no study analyzing the value relevance of the IFRS 7 fair value hierarchy. This study is aimed to mitigate these limitations by analyzing the IFRS 7 fair value hierarchy for European banks from 2006 to 2010.

Another string of research this study picks up, is the accounting choice literature. This literature provides essential inputs for the question which intentions banks pursued by using the new reclassification options. The studies show that banks used the relaxed rules to avoid violating regulatory capital requirements (Bischof et al. (2010)) and, in very general terms, for earnings management (Kholmy and Ernstberger (2010)). Therefore, one would expect an overall deteriorated accounting quality for reclassifying banks. This study will investigate whether this is also reflected in the value relevance of mark-to-model fair values. In this context, I also examine whether capital markets price the difference between the fair value and the book value of reclassified financial assets.

4 Empirical Analysis

4.1 Sample Selection and Descriptive Statistics

Although both IAS 39 and IFRS 7 are not industry-specific standards, this paper focuses on the banking sector. This is due to the fact that the largest part of banks' balance sheets consists of financial instruments, while they usually only represent marginal positions in other industries.[3] I limit the sample to European banks, i.e. banks from EU 27 and EFTA states, for a sample period from 2006 to 2010. As mentioned before, quantitative fair value disclosures only became

[3] With the notable exception of Simko (1999), all value relevance studies on fair value accounting for financial instruments focus on the financial sector.

obligatory in 2009. However, there were banks which already started to disclosure fair value hierarchy information in 2006. While one can easily argue that banks which made fair value hierarchy disclosures in 2008 were early adopters of the IFRS 7 amendment, the case of banks disclosing fair value hierarchy information in 2006 and 2007 is more difficult because there was not even an IASB discussion paper. The early quantitative disclosures could have been caused by a US-GAAP orientation of the disclosing banks, where SFAS 157 was issued in October 2006. An example supporting this hypothesis is *Deutsche Bank*. *Deutsche Bank* adopted US-GAAP in 2001, but had to apply IFRS in accordance with EU law (European Union (2002)) since 2007. In its annual report from 2007 *Deutsche Bank* makes quantitative disclosures, but states that it is following the IFRS fair value hierarchy (Deutsche Bank (2007), pp. 158-159). Thus, the bank might have used SFAS 157 to interpret the disclosure requirements of IFRS 7.

I include all publicly traded European banks which are either listed in *Bureau von Dijk Bankscope* or *Thomson Reuters Datastream*. From these I exclude all non-IFRS banks and banks without readily available reports. The latter step is necessary because both databases do not include any information regarding the fair value hierarchy or the reclassification of financial assets. Thus, my sample is essentially hand-collected. In a further step, all banks with fiscal-year end other than 31st December are excluded from the sample to avoid confounding economic effects in the empirical analysis. Subsequently, bank-years without quantitative hierarchy disclosures are excluded. Most of these excluded bank-years are obviously in 2006, 2007, and 2008 (see Table 1). Quite remarkably, even in 2009 and 2010 some banks did not make the required fair value hierarchy disclosures. For example, *OTP Banka Slovensko* does not make such disclosures in 2009 (OTP Banka Slovensko (2009)). Other previous studies found similar or even more appalling evidence regarding the non-compliance with obligatory disclosure requirements (e.g. Bischof et al. (2010)). Finally, I exclude all banks without sufficient data on the market capitalization and outliers. Because the sample size is rather limited, I do not use quantitative methods to exclude or to correct for outliers but I select them manually. Three banks with overall six bank-years are excluded from the final sample, *Crédit Industriel et Commercial*, *Dexia Banka Slovensko*, and *Tatra Banka Slovensko*. Both *Dexia Banka Slovensko* and *Tatra Banka Slovensko* have several tranches of stocks of which some are highly illiquid. Therefore, it is impossible to calculate an accurate firm value. *Crédit Industriel et Commercial*, on the other hand, has a per stock book

value of assets that deviates substantially from the median value of the total sample[4] which could bias the empirical results. The remaining sample consists of 408 bank-years, 85.8% of them in 2009 and 2010.

[Insert Table 1 about here]

Table 2 displays descriptive statistics of this bank sample. Panel A provides absolute values, Panel B relative values, i.e. values compared to total assets, and Panel C values per share. Panel B reveals that fair value positions, in contrast to their prominence in the public debate during the financial crisis, only comprise a relatively small part of the balance sheet. On average, fair value assets account for 26.1% of total assets, while fair value liabilities account only for 11.2%. The median values are even lower. While the median value of fair value assets is 14.9%, it is just 1.5% for fair value liabilities. The largest part of financial assets (liabilities) measured at fair value are based on level 1 (level 2) inputs. Though, the lower relevance of fair value accounting for financial liabilities does not come unexpected with regard to the restrictive fair value option of IAS 39. The low amount of financial liabilities measured at fair value and the significant number of banks which do not recognize any liabilities at fair values might, however, impair the significance of the results of further statistical analysis.

[Insert Table 2 about here]

Another important observation is that for Panel A as well as for Panel C the mean values are substantially higher than the median values. Hence, the absolute values and the values per share have a highly right skewed distribution. While one expects a substantial impact of large observations in Panel A, the skewed distribution in Panel C is more critical. The number of outstanding shares is often used in market-based accounting research as a deflator to mitigate scale effects, i.e. the undue influence of large observations on regression results. However, the descriptives indicate that the number of outstanding shares might only replace one scaling factor

[4] The deviation is higher than ten times the standard deviation.

(market value of equity) by another (price per share). This problem will be discussed in more detail in the robustness checks.

4.2 Hypotheses Development

The value relevance research design is a means to operationalize the trade-off between relevance and reliability which is inherent in every accounting information (Barth (2000), pp. 16-17). Therefore, if an accounting information is value relevant, i.e. the regression coefficient is significantly different from zero, its relevance at least outweighs any lack of reliability. One can also state that accounting information is more relevant for equity investors if it is forward-looking. However, any forward-looking accounting information can be biased by measurement error or deliberate manipulation and thus lacks reliability. An example for forward-looking information are fair values because they generally represent present values of expected future cash flows. Accordingly, they are highly relevant for investors, but might lack reliability. However, it seems to be unlikely that investors do not price fair values at all and therefore I expect the relevance of fair values of financial instruments to outweigh any lack of reliability, even for mark-to-model fair values.

- H1a: Fair value assets and liabilities of all hierarchy levels are value relevant.

It is reasonable to expect the value relevance of fair value assets to decrease with decreasing hierarchy level, because the reliability declines with decreasing level. The effect is more difficult to predict for financial liabilities. Basically, the coefficients on fair value liabilities should increase with decreasing hierarchy level because banks might use their discretion to recognize lower values and thus show higher profits. On the other hand, measurement errors and the overall very low relative amounts of fair value liabilities might add a significant noise component to the estimated coefficients. Hence, I do not include fair value liabilities in H1b.

- H1b: The value relevance of fair value assets decreases with decreasing hierarchy level.

As mentioned before, the accounting choice literature on the relaxed reclassification option finds evidence that banks use the option to manage earnings and to avoid violating regulatory capital requirements (Bischof et al. (2010), Kholmy and Ernstberger (2010)). Hence, reclassifying

banks are likely to being perceived by capital market participants as less committed to a high accounting quality because these banks have shown their willingness to actively manage earnings and balance sheet relations, i.e. the decision to reclassify will be interpreted as a signal of low accounting quality. This negative signal also casts doubt on the reliability of mark-to-model fair values because banks which have used the reclassification option for earnings management are more likely to use their discretion in measuring fair values for the same purpose. Therefore, I expect the value relevance of mark-to-model fair values to be significantly lower for reclassifying banks than for non-reclassifying banks.

- H2a: The value relevance of level 2 and 3 fair value assets is lower for reclassifying banks than for non-reclassifying banks.

The early literature on the value relevance of fair values of financial instruments essentially investigates whether disclosed fair values can provide incremental information to recognized historic costs. Most of these studies find supporting evidence (e.g. Barth et al. (1996), Eccher et al. (1996)). I expand the basic idea of this research to the reclassification of financial assets. While banks recognize their reclassified assets at amortized costs, they still have to disclose the fair values of these assets. If one assumes that banks use the reclassification option to manage earnings and not to faithfully report their financial position, investors should price the fair value information disclosed in the notes. Therefore, the difference between disclosed fair values and recognized amortized costs should be value relevant and explain cross-sectional variations of share prices.

- H2b: The difference between fair values and book values of reclassified financial assets can explain cross-sectional and time-series variations of share prices.

The third and last hypothesis regards the financial position of the sample banks. As a proxy for the financial position I use the Tier 1 capital ratio. I assume that banks with lower Tier 1 capital, i.e. banks in a poor financial position, have higher incentives to use discretion to manage earnings and balance sheet relations. Consequently, similar to H2a, mark-to-model fair values of banks with low Tier 1 capital ratios should have a reduced value relevance.

- H3: The value relevance of level 2 and 3 fair value assets is lower for banks with low Tier 1 capital ratio than for banks with high Tier 1 capital ratios.

It must be stated that the Tier 1 capital ratio might be a noisy proxy for the financial position of a bank. Solvent and profitable banks could intentionally hold less equity capital in order to increase their return on equity, while banks which have suffered a severe deterioration of the credit quality of their loan portfolios might still show a high Tier 1 capital ratio because the Tier 1 capital does not reflect this deterioration immediately due to the incurred loss model for financial assets recognized at amortized costs. Furthermore, H2a and H3 are likely to overlap at least to some extent because banks with low Tier 1 capital ratios are more likely to reclassify financial assets.

4.3 Empirical Model

Market-based accounting research is based on different valuation models. The most common models are the balance sheet approach and the residual income approach. The balance sheet approach was introduced to the value relevance literature by Landsman (1986). This approach uses the balance sheet identity, i.e.

$$BVE \equiv \sum_{i=1}^{m} BVA_i - \sum_{j=1}^{n} BVL_j, \tag{1}$$

where BVE, BVA, and BVL are the book values of equity, assets, and liabilities. The corresponding valuation model assumes that the market value of equity (MVE) is solely determined by the market value of balance sheet assets (MVA) and liabilities (MVL):

$$MVE = \sum_{i=1}^{m} MVA_i - \sum_{j=1}^{n} MVL_j. \tag{2}$$

Although this valuation approach seems to be very appealing because of its simplicity, the empirical implementation reveals several weaknesses. First, not all assets and liabilities are measured at fair value. Hence, the book value is, in general, a very noisy proxy for the market value. Second, not all items satisfy the recognition criteria of the IASB Framework. Any empirical implementation of this valuation model will thus rely on accounting information, which

does neither represent all assets and liabilities of a company nor in any case market values. Thus, in the absence of perfect markets, a valuation model that is solely based on balance sheet data might not be descriptive. Therefore, when implementing this approach, it is common practice to include a proxy for non-recognized assets, which is typically net income (*NI*) (Barth and Landsman (1995), Aboody et al. (1999)).

An alternative valuation approach is the Ohlson (1995) residual income valuation model. It explicitly models information dynamics, i.e. the time-series behavior of residual income:

$$MVE_t = BVE_t + \alpha_1 RI_t + \alpha_2 \upsilon_t, \tag{3}$$

where RI is residual income, υ captures other (non-accounting) information, and α_1 and α_2 are valuation coefficients dependent on interest rates and information dynamics. The main advantages of this valuation model in comparison to the balance sheet approach are the strong theoretical foundation and the allowance for other information. However, there does not yet seem to be a conclusive empirical measure for other information. While some studies explicitly assume that other information is represented in the error term (e.g. Barth and Clinch (1998)), other studies make the same assumption implicitly (e.g. Song et al. (2010)), even though this limits the Ohlson (1995) model substantially (Liu and Ohlson (2000)). In the end, the empirical implementation of both valuation approaches does not differ significantly. Some studies even state explicitly that their empirical model can be seen as based either on the balance sheet approach or on the Ohlson (1995) model (e.g. Aboody et al. (1999), Barth et al. (1998)).

Following Song et al. (2010), I use a regression model which can be regarded as based on either a modified Ohlson (1995) model or the balance sheet approach:[5]

$$\begin{aligned} P_{it} = {} & \beta_0 + \beta_1 NFVA_{it} + \beta_2 NFVL_{it} + \beta_3 FVA1_{it} + \beta_4 FVA2_{it} + \beta_5 FVA3_{it} \\ & + \beta_6 FVL1_{it} + \beta_7 FVL2_{it} + \beta_8 FVL3_{it} + \beta_9 NI_{it} + \varepsilon_{it} \end{aligned} \tag{4}$$

where P is the price per share three months after fiscal-year end, *NFVA* (*NFVL*) are non-fair value assets (liabilities), and *FVA1* (*FVL1*), *FVA2* (*FVL2*), and *FVA3* (*FVL3*) are fair

[5] Song et al. (2010), however, argue that their regressions are based on a modified Ohlson (1995) model.

value assets (liabilities) of the three IFRS 7 measurement levels. The study uses the number of outstanding shares as a deflator to mitigate scale effects (Barth and Clinch (2009)). Hence, all variables are on a per share basis. Another factor that has to be considered are possible cross-sectional (time fixed effects) and time-series dependencies (firm fixed effects) of the regression residuals. Following Petersen (2009), I use clustered standard errors to control for fixed effects.

In order to test H2a, the variable *ReclassAssets* is included in the regression model. *ReclassAssets* is a dummy variable that takes the value of one if a bank has reclassified financial assets on its balance sheet and zero otherwise. The variable is interacted with fair value assets of all measurement levels. I do not interact it with fair value liabilities because these in general account for only a very low percentage of total assets, and a substantial number of banks does not report any liabilities at fair value.

$$\begin{aligned} P_{it} = {} & \beta_0 + \beta_1 NFVA + \beta_2 NFVL_{it} + \beta_3 FVA1_{it} + \beta_4 FVA1_{it} \cdot ReclassAssets_{it} \\ & + \beta_5 FVA2_{it} + \beta_6 FVA2_{it} \cdot ReclassAssets_{it} + \beta_7 FVA3_{it} + \beta_8 FVA3_{it} \\ & \cdot ReclassAssets_{it} + \beta_9 FVL1_{it} + \beta_{10} FVL2_{it} + \beta_{11} FVL3_{it} + \beta_{12} NI_{it} \\ & + \beta_{13} ReclassAssets_{it} + \varepsilon_{it} \end{aligned} \tag{5}$$

In addition, I expand Equation 5 by including the variable $ReclassAssetsFVBV$ which is the difference between disclosed fair values and recognized amortized costs of assets which were reclassified in accordance with the relaxed reclassification option.

$$\begin{aligned} P_{it} = {} & \beta_0 + \beta_1 NFVA + \beta_2 NFVL_{it} + \beta_3 FVA1_{it} + \beta_4 FVA1_{it} \cdot ReclassAssets_{it} \\ & + \beta_5 FVA2_{it} + \beta_6 FVA2_{it} \cdot ReclassAssets_{it} + \beta_7 FVA3_{it} + \beta_8 FVA3_{it} \\ & \cdot ReclassAssets_{it} + \beta_9 FVL1_{it} + \beta_{10} FVL2_{it} + \beta_{11} FVL3_{it} + \beta_{12} NI_{it} \\ & + \beta_{13} ReclassAssetsFVBV_{it} + \beta_{14} ReclassAssets_{it} + \varepsilon_{it} \end{aligned} \tag{6}$$

For the third hypothesis, the variable *ReclassAssets* is replaced by the variable *LowTier1Ratio*. This variable is another dummy which is one for all banks with a Tier 1 capital ratio below the

median Tier 1 capital ratio and zero otherwise. Again, the dummy is interacted with fair value assets but not with fair value liabilities.

$$\begin{aligned} P_{it} = {} & \beta_0 + \beta_1 NFVA + \beta_2 NFVL_{it} + \beta_3 FVA1_{it} + \beta_4 FVA1_{it} \cdot LowTier1Ratio_{it} \\ & + \beta_5 FVA2_{it} + \beta_6 FVA2_{it} \cdot LowTier1Ratio_{it} + \beta_7 FVA3_{it} + \beta_8 FVA3_{it} \\ & \cdot LowTier1Ratio_{it} + \beta_9 FVL1_{it} + \beta_{10} FVL2_{it} + \beta_{11} FVL3_{it} + \beta_{12} NI_{it} \\ & + \beta_{13} LowTier1Ratio_{it} + \varepsilon_{it} \end{aligned} \tag{7}$$

In the final model, I combine Equations 5 and 7, i.e. I include both dummy variables in order to control for confounding effects. Confounding effects might occur in Equations 5 and 7 because banks use, as Bischof et al. (2010) show, new reclassification options to avoid violating regulatory capital requirements. Accordingly, these banks most likely have less regulatory capital than the median bank. Significant results in Equation 5 might therefore be solely driven by the effect of low capital ratios and not by the effects of a reclassification decision on the perceived accounting quality.

$$\begin{aligned} P_{it} = {} & \beta_0 + \beta_1 NFVA + \beta_2 NFVL_{it} + \beta_3 FVA1_{it} + \beta_4 FVA1_{it} \cdot ReclassAssets_{it} \\ & + \beta_5 FVA1_{it} \cdot LowTier1Ratio_{it} + \beta_6 FVA1_{it} \cdot ReclassAssets_{it} \cdot LowTier1Ratio_{it} \\ & + \beta_7 FVA2_{it} + \beta_8 FVA2_{it} \cdot ReclassAssets_{it} + \beta_9 FVA2_{it} \cdot LowTier1Ratio_{it} \\ & + \beta_{10} FVA2_{it} \cdot ReclassAssets_{it} \cdot LowTier1Ratio_{it} + \beta_{11} FVA3_{it} + \beta_{12} FVA3_{it} \\ & \cdot ReclassAssets_{it} + \beta_{13} FVA3_{it} \cdot LowTier1Ratio_{it} + \beta_{14} FVA3_{it} \cdot ReclassAssets_{it} \\ & \cdot LowTier1Ratio_{it} + \beta_{15} FVL1_{it} + \beta_{16} FVL2_{it} + \beta_{17} FVL3_{it} + \beta_{18} NI_{it} \\ & + \beta_{19} ReclassAssets_{it} + \beta_{20} LowTier1Ratio_{it} + \beta_{21} ReclassAssets_{it} \\ & \cdot LowTier1Ratio_{it} + \varepsilon_{it} \end{aligned} \tag{8}$$

4.4 Results

Table 3 shows the results of the basic OLS regression model (Equation 4). These results show that all fair value assets and liabilities, even level 3 fair values, are value relevant, i.e. their coefficients are significantly different from zero. Hence, the evidence supports H1a. Furthermore, when comparing the coefficients of the different fair value levels, it can be seen that only the coefficients of level 3 fair values are significantly different from the coefficients of other levels. This is true both for assets and liabilities. Accordingly, only level 3 fair values are perceived by capital markets as less reliable than level 1 fair values. One can thus not assert that every mark-to-model is some kind of mark-to-myth because investors distinguish between level 2 and level 3 fair values and even price the least reliable fair values. The fact that the coefficients of fair value liabilities decrease with decreasing hierarchy level is somewhat striking. Following the consideration that banks use their discretion in fair value measurement for earnings management, increasing coefficients would be expected. However, as argued before, most banks have very low or even zero amounts of fair value liabilities. Thus, the coefficients on fair value liabilities might not be representative or even biased. Summing up, the evidence only weakly supports H1b.

[Insert Table 3 about here]

Based on the balance sheet model one would expect coefficients of 1 for assets and -1 for liabilities. A deviation from these expected coefficients could be explained by a lack of reliability. The results show, indeed, that all fair value assets and liabilities have coefficients which are significantly different from the theoretically expected coefficients. But the results also seem to suggest that the investors even discount fair value assets and liabilities of the first hierarchy level, i.e. fair values based on quoted market prices. Hence, the observed discounts cannot be explained only by a lack of reliability of single accounting positions. They might, though, reflect institutional characteristics of the reporting banks or country fixed effects which are not considered in the valuation approach. To test for these effects I split the sample first by country groups (Table 4) and then by bank size (Table 5). For the first split I define two country groups, i.e. EU 15 and Other European. The latter includes all new EU member states and

the EFTA states. As the results of Fiechter and Novotny-Farkas (2011) indicate, investors place higher discounts on fair values of banks from non-EU 15 countries. These discounts might be explained by lower regulatory quality and less sophisticated capital markets in those countries. The results in Table 4 show indeed that for EU 15 banks, only the coefficients on level 3 fair values deviate significantly from expected values, while for banks from other European countries, all coefficients on fair value assets and liabilities deviate from expected values. Panel B even reveals that level 3 fair values totally lose value relevance for banks from other European countries. Therefore, the deviation from expected values in the complete sample seems to be driven by banks from other European countries. Another factor influencing the results could be institutional characteristics of the sample banks. These characteristics might be reflected in bank size (e.g. Song et al. (2010)). Therefore, I split the sample in large banks (above median total assets) and small banks (below median total assets). The results of this partitioning are reported in Table 5. While all fair value assets and liabilities are value relevant and coefficients do not significantly differ from expected values for small banks (Panel B), they do differ for large banks, and level 3 fair values even lose value relevance (Panel A). At first glance these results are striking. For large banks one would expect higher scrutiny by capital market participants and an intense analyst coverage. Therefore, the reliability of recognized fair values should be higher for large banks than for small banks. On the other hand, one could also argue that investors can use other sources of information than financial statements when valuing large banks, while for small banks they have to rely on this one source of information. Accordingly, the value of large banks could be driven by other information. This, however, should have no impact in value relevance research as long as this information is reflected in financial statement positions. The low coefficients of large banks could therefore indicate that the additional information is a correlated omitted variable in the regression model which casts some doubts on the valuation approach. As discussed before, there is no convincing empirical measure for other information and therefore a change to the Ohlson (1995) or Feltham and Ohlson (1995) model is not a feasible solution to this problem. Another possible explanation for the low coefficients for large banks could be confounding effects, i.e. the majority of large banks could be situated in other European countries. However, the data show that EU 15 banks have on average assets worth EUR 276.94bn, while banks from other European countries only have EUR 36.92bn. Hence, the

low coefficients of large banks cannot be explained by less sophisticated markets or a weaker regulatory environment. Overall, the low coefficient on level 1 fair value assets (*FVA1*) in the full sample and the low coefficients on fair value assets of all measurement levels in the subsamples for banks from other European countries and large banks might indicate that the valuation model is not descriptive for all banks. Therefore, the empirical results must be interpreted with caution.

[Insert Table 4 about here]

[Insert Table 5 about here]

The results of the expanded empirical models (Equations 5-8) are shown in Table 6. The first model analyzes the effect of the reclassification of financial assets. For this purpose, the sample period is reduced to the years 2008 to 2010 because the relaxed reclassification rules went effective retroactively in July 2008. The results on the interaction terms between *ReclassAssets* and the different levels of fair value assets are rather weak. The coefficients on the interaction terms do neither have the expected signs nor are they significant. The decision to reclassify financial assets does not seem to be interpreted by capital market participants as a signal of a lower accounting quality. One could argue that these results are driven by a self-selection bias because for the year 2008, the sample includes only those banks which voluntarily disclose fair value hierarchy data. Voluntary disclosing might indicate that these banks are committed to a higher accounting quality. However, when the observations from 2008 are excluded from the sample, the coefficients on the interaction terms remain far from significant at conventional levels (untabulated). Another potential problem might be caused by the variable *ReclassAssets*. This variable has a value of one as long as a bank has reclassified financial assets on its balance sheet. Yet, the actual reclassification of the financial assets might have occurred in the previous fiscal years. If investors only interpret the decision to reclassify as a signal of a lower accounting quality, the regression results might be flawed. Therefore, I replace *ReclassAssets* by the variable *ReclassDecision* which is one if the bank has reclassified financial assets in the current reporting period and zero otherwise. Again, the relevant coefficients are insignificant (untabulated). Accordingly, the evidence suggests that investors do not perceive the fair value

disclosures of reclassifying banks as less value relevant. In a further step, the variable *ReclassAssetsFVBV* is included in the regression model. As mentioned above, this variable covers the difference between the fair value and the book value of reclassified financial assets. Again, the coefficients of this variable and of the interaction terms remain insignificant. Summing up, the results do not support H2a and H2b.

In the third expanded empirical model, I test for the effects of regulatory capital on the perceived reliability of fair values. Again, the sample period includes all sample years, i.e. 2006 to 2010, but without bank-years where information about Tier 1 ratios is missing. As stated in H3, I expect mark-to-model fair values to be less value relevant for banks with low regulatory capital than for banks with high regulatory capital. In contrast to results for the reclassification, two of three coefficients on the interaction terms are significant at conventional levels. The effect of regulatory capital is significant for level 1 and level 2 fair values. While I do not make any assumption about the impact on level 1 fair values, the results show, contrary to my predictions, a significantly positive effect of low regulatory capital on the value relevance of level 2 fair values. The coefficient on the interaction between low regulatory capital and level 3 fair values has the expected sign but is not significant.[6]

[Insert Table 6 about here]

In a final step, I test for both the effects of reclassification and of low regulatory capital in a combined model to control for possible confounding effects. The sample for this combined model differs from the samples of the separate models because it reflects the constraints of both models. The sample period spans from 2008 to 2010 and all bank-years without regulatory capital information are excluded. The findings are again very weak. Coefficients on the interaction terms only get significant for level 2 fair values. Here, one can observe a positive significant effect of low regulatory capital and of the decision to reclassify financial assets. Even if a bank has reclassified financial assets and low regulatory capital, markets value its level 2 fair values

[6] Goh et al. (2009) find a significantly negative impact of low regulatory capital on the reliability of level 3 fair values in their study for U.S. banks.

at a premium (11 cents for each Euro of level 2 assets) in comparison to non-reclassifying banks with high regulatory capital.

Overall, the results of the expanded models do not seem to support hypotheses H2 and H3. Nevertheless, one can ascertain that generalizations about mark-to-model fair values are not feasible because market participants value level 2 and 3 fair values differently. The insignificant impact of low regulatory capital on the perceived reliability of mark-to-model fair values remains noticeable. This result might be explained by the fact that most banks with low Tier 1 ratios are situated in the EU 15. This means that the indicator variable *LowTier1Ratio* might also cover differences in value relevance between EU 15 and other European countries.

4.5 Robustness Checks

My descriptive statistics cast some doubt on the ability of the number of outstanding shares to mitigate scale effects. Therefore, I test the basic regression model with alternative deflators. Since the number of outstanding shares is rather unrelated to the economics of the sample firms, I use two more strongly related deflators, book value and market value of equity, to test for the robustness of the regression results. Book value of equity is a very common deflator in the value relevance literature (e.g. Eccher et al. (1996), Nelson (1996)). Market value of equity, on the other hand, is less common. This deflator was proposed by Easton and Sommers (2003). They argue that market capitalization as of fiscal-year end represents the scale in a sample. Therefore, they suggest to use market capitalization as a deflator. This would result in the following regression model:

$$\begin{aligned}\frac{MVE_{it}}{MVE_{it}} = \beta_0 \frac{1}{MVE_{it}} + \beta_1 \frac{NFVA_{it}}{MVE_{it}} + \beta_2 \frac{NFVL_{it}}{MVE_{it}} + \beta_3 \frac{FVA1_{it}}{MVE_{it}} + \beta_4 \frac{FVA2_{it}}{MVE_{it}} \\ + \beta_5 \frac{FVA3_{it}}{MVE_{it}} + \beta_6 \frac{FVL1_{it}}{MVE_{it}} + \beta_7 \frac{FVL2_{it}}{MVE_{it}} + \beta_8 \frac{FVL3_{it}}{MVE_{it}} + \beta_9 \frac{NI_{it}}{MVE_{it}} + \varepsilon_{it}. \qquad (9)\end{aligned}$$

The obvious problem is that the dependent variable will take a value of one for every observation. So an OLS estimation is no longer feasible. The authors recommend to use a WLS regression with the inverted square of the market capitalization as a weight, which is consistent with the regression above.

[Insert Table 7 about here]

The results of the regressions based on these alternative deflators are reported in Table 7 (BVE in Panel A, MVE in Panel B). They reveal that the fair values of all levels remain significant for both alternative deflators, with the notable exception of level 3 assets in the regression deflated by the book value of equity. Overall, the results still support H1a. However, the absolute values of the coefficients are substantially lower for the regression models based on the alternative deflators. Furthermore, the coefficient of level 2 fair value assets is now significantly smaller than the coefficient of level 1 fair value assets and - when using the market value of equity as a deflator - level 2 assets are no longer more value relevant than level 3 assets. This strongly supports H1b. Rather striking is the very low adjusted R^2 of the regression deflated by the book value of equity. This means that accounting measures can only explain a small part of the cross-sectional and time-series variation of market-to-book ratios, as is well known from previous literature (e.g. Eccher et al. (1996), Nelson (1996)).

Summing up, the results based on the alternative deflators substantially deviate from the results of the share-deflated regression model. Though the basic hypotheses hold when testing the regressions for robustness, the decreased value of the coefficients in models based on book value and market value of equity indicates that there are scale effects which cannot be effectively mitigated by the number of shares.

5 Conclusion

This study is the first which analyses the value relevance of the IFRS 7 fair value hierarchy. The main result is that fair values of financial instruments are value relevant, but level 3 fair values are perceived as less reliable than other fair values. In addition, Investors price fair values of EU 15 banks substantially higher than fair values of banks from other European countries, which can be explained by differences in regulatory quality and financial market sophistication. I also find that capital markets price fair values of small banks higher than fair values of large banks.

This might indicate that market prices of large banks are more strongly driven by information not reflected in financial statements.

The study also analyses the effects of a reclassification of financial assets and of regulatory capital on the reliability of fair value assets. While it finds no significant effects for the reclassification, there is a weakly significant impact of the regulatory capital on the reliability of mark-to-model fair values.

A limitation this study shares with all value relevance studies is that it is based on the assumption of efficient markets. This assumption might be, however, particularly questionable during the financial crisis. The low coefficients could be explained by these extraordinary circumstances. Overall, the results show that fair values of all measurement levels remain value relevant even during the financial crisis. Finally, the significant variation of the coefficients of the different fair value levels proves that the new disclosure requirements provide decision-useful information for investors.

References

Aboody, D., Barth, M. E. and Kasznik, R. (1999). Revaluations of fixed assets and future firm performance: Evidence from the UK, *Journal of Accounting and Economics* **26**(1-3): 149–178.

Ahmed, A. S., Kilic, E. and Lobo, G. J. (2006). Does Recognition versus Disclosure Matter? Evidence from Value-Relevance of Banks' Recognized and Disclosed Derivative Financial Instruments, *The Accounting Review* **81**(3): 567–588.

Ahmed, A. S. and Takeda, C. (1995). Stock market valuation of gains and losses on commercial banks' investment securities - An empirical analysis, *Journal of Accounting and Economics* **20**(2): 207–225.

Barth, M. E. (1994). Fair Value Accounting: Evidence from Investment Securities and the Market Valuation of Banks, *The Accounting Review* **69**(1): 1–25.

Barth, M. E. (2000). Valuation-based accounting research: Implications for financial reporting and opportunities for future research, *Accounting and Finance* **40**(1): 7–31.

Barth, M. E. (2007). Standard-setting measurement issues and the relevance of research, *Accounting and Business Research* **37**(3): 7–15.

Barth, M. E., Beaver, W. H. and Landsman, W. R. (1996). Value-Relevance of Banks' Fair Value Disclosures under SFAS No. 107, *The Accounting Review* **71**(4): 513–537.

Barth, M. E., Beaver, W. H. and Landsman, W. R. (2001). The relevance of the value-relevance literature for financial accounting standard setting: another view., *Journal of Accounting and Economics* **31**(1-3): 77 – 104.

Barth, M. E., Clement, M. B., Foster, G. and Kasznik, R. (1998). Brand Values and Capital Market Valuation, *Review of Accounting Studies* **3**(1-2): 41–68.

Barth, M. E. and Clinch, G. (1998). Revalued Financial, Tangible, and Intangible Assets: Associations with Share Prices and Non-Market-Based Value Estimates, *Journal of Accounting Research* **36**(Supplement): 199–233.

Barth, M. E. and Clinch, G. (2009). Scale Effects in Capital Market-Based Accounting Research, *Journal of Business Finance and Accounting* **36**(3-4): 253–288.

Barth, M. E. and Landsman, W. R. (1995). Fundamental Issues Related to Using Fair Value Accounting for Financial Reporting, *Accounting Horizons* **9**(4): 97–107.

Beaver, W. H. and Venkatachalam, M. (2003). Differential Pricing of Components of Bank Loan Fair Values, *Journal of Accounting, Auditing and Finance* **18**(1): 41–67.

Bischof, J., Brüggemann, U. and Daske, H. (2010). Relaxation of Fair Value Rules in Times of Crisis: An Analysis of Economic Benefits and Costs of the Amendment to IAS 39, *Working paper*.

Buffett, W. E. (2003). Chairman's letter, *Annual Report 2002*, Berkshire Hathaway, pp. 3–23.

Carroll, T. J., Linsmeier, T. J. and Petroni, K. R. (2003). The Reliability of Fair Value versus Historical Cost Information: Evidence from Closed-End Mutual Funds, *Journal of Accounting, Auditing and Finance* **18**(1): 1–23.

Deutsche Bank (2007). Annual review 2007, *Report*.

Easton, P. D. and Sommers, G. A. (2003). Scale and the Scale Effect im Market-based Accounting Research, *Journal of Business Finance and Accounting* **30**(1-2): 25–55.

Eccher, E. A., Ramesh, K. and Thiagarajan, S. R. (1996). Fair value disclosure by bank holding companies, *Journal of Accounting and Economics* **22**(1-3): 79–117.

Enria, A., Cappiello, L., Dierick, F., Grittini, S., Haralambous, A., Maddaloni, A., Molitor, P., Pires, F. and Poloni, P. (2004). Fair Value Accounting and Financial Stability, *Occasional Paper Series 13*, European Central Bank.

European Union (2002). REGULATION (EC) No 1606/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 July 2002 on the application of international accounting standards, *Regulation*.

Feltham, J. A. and Ohlson, J. A. (1995). Valuation and Clean Surplus Accounting for Operating and Financial Activities, *Contemporary Accounting Research* **11**(2): 689–731.

Fiechter, P. and Novotny-Farkas, Z. (2011). Pricing of Fair Values during the Financial Crisis: International Evidence, *Working paper*.

Goh, B. W., Ng, J. and Yong, K. O. (2009). Market Pricing of Banks' Fair Value Assets Reported under SFAS 157 during the 2008 Economic Crisis, *Working paper*.

IASB (2008). Reclassification of Financial Assets - Amendments to IAS 39 Financial Instruments: Recognition and Measurement and IFRS 7 Financial Instruments: Disclosures, *Amendment*.

IASB (2009). Improving Disclosures about Financial Instruments - Amendments to IFRS 7 Financial Instruments: Disclosures, *Amendment*.

Kholmy, K. and Ernstberger, J. (2010). Reclassification of Financial Instruments in the Financial Crisis - Empirical Evidence from the European Banking Sector, *Working paper*.

Kolev, K. (2008). Do Investors Perceive Marking-to-Model as Marking-to-Myth? Early Evidence from FAS 157 Disclosure, *Working paper*, NYU Stern School of Business.

Landsman, W. (1986). An Empirical Investigation of Pension Fund Property Rights, *The Accounting Review* **61**(4): 662–691.

Laux, C. and Leuz, C. (2009). The crisis of fair-value accounting: Making sense of the recent debate, *Accounting, Organizations and Society* **34**(6-7): 826–834.

Liu, J. and Ohlson, J. A. (2000). The Feltham-Ohlson (1995) Model: Empirical Implications, *Journal of Accounting, Auditing and Finance* **15**(3): 321–331.

McCreevy, C. (2008). Lamfalussy follow up: future structure of supervision, European Parliament Plenary Session, 8 October 2008, URL: `http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/513&format=HTML&aged=0&language=EN&guiLanguage=en`.

Nelson, K. K. (1996). Fair Value Accounting for Commercial Banks: An Empirical Analysis of SFAS No. 107, *The Accounting Review* **71**(2): 161–182.

Ohlson, J. A. (1995). Eamings, Book Values, and Dividends in Equity Valuation, *Contemporary Accounting Research* **11**(2): 661–687.

OTP Banka Slovensko (2009). Annual report 2009, *Report*.

Park, M. S., T., P. and Park, B. T. (1999). Fair Value Disclosures for Investment Securities and Bank Equity: Evidence from SFAS No. 115, *Journal of Accounting, Auditing and Finance* **14**(3): 347–370.

Petersen, M. A. (2009). Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches, *Review of Financial Studies* **22**(1): 435–480.

Petroni, K. R. and Wahlen, J. M. (1995). Fair Values of Equity and Debt Securities and Share Prices of Property-Liability Insurers, *Journal of Risk and Insurance* **62**(4): 719–737.

Plantin, G., Sapra, H. and Shin, H. S. (2008). Fair value accounting and financial stability, *Research Paper 08-15*, The University of Chicago Graduate School of Business.

Simko, P. J. (1999). Financial Instrument Fair Values and Nonfinancial Firms, *Journal of Accounting, Auditing and Finance* **14**(3): 247–274.

Song, C. J., Thomas, W. B. and Yi, H. (2010). Value Relevance of FAS No. 157 FairValue Hierarchy Information and the Impact of Corporate Governance Mechanisms, *The Accounting Review* **85**(4): 1375–1410.

Whittington, G. (2008). Fair Value and the IASB/FASB Conceptual Framework Project: An Alternative View, *Abacus* **44**(2): 139–168.

Table 1: Sample Selection

	2006	2007	2008	2009	2010	Total
Include all publicly traded European banks from Bankscope and Datastream:	273	273	273	273	273	1365
Exclude banks without available reports	-40	-29	-25	-26	-41	-161
Exclude Non-IFRS banks	-47	-46	-47	-44	-41	-225
Exclude banks not reporting on 31st December	-6	-7	-7	-6	-4	-30
Exclude banks not disclosing fair value levels	-175	-178	-153	-5	-2	-513
Exclude banks with missing data on market capitalization				-7	-15	-22
Exclude outliers			-1	-3	-2	-6
Final Sample	5	13	40	182	168	408

This table depicts the sample selection process. First, both BvD Bankscope and Thomson Reuters Datastream were used to identify all publicly traded European (EU 27 + EFTA) banks. Then, all firm-years without readily available reports were excluded. Based on the reports all banks not reporting on 31st December and firm-years without fair value level disclosures were eliminated. In a final step, I excluded firm-years with missing data on market capitalization and outliers.

Table 2: Descripitive Statistics

Panel A: Absolute Value (in billions of Euros)

	Mean	Std. Dev.	25th Percentile	50th Percentile	75th Percentile	Obs. (firm-years)
MVE	7.910	17.577	0.247	1.286	5.327	408
Total Assets	195.168	440.226	2.937	14.488	120.682	408
BVE	8.997	18.831	0.224	1.179	6.910	408
NFVA	113.181	229.941	1.988	9.655	92.090	408
NFVL	131.723	272.802	2.256	11.260	99.512	408
FVA1	27.557	75.259	0.196	1.606	10.142	408
FVA2	51.361	167.343	0.045	0.721	10.449	408
FVA3	3.069	10.004	0.002	0.044	0.453	408
FVL1	8.167	39.076	0.000	0.001	0.759	408
FVL2	44.485	144.779	0.005	0.339	5.442	408
FVL3	1.796	6.235	0.000	0.000	0.068	408
NI	0.533	2.858	0.008	0.062	0.362	408

Panel B: Relative Value

	Mean	Std. Dev.	25th Percentile	50th Percentile	75th Percentile	Obs. (firm-years)
BVE / Total Assets	0.108	0.135	0.053	0.071	0.098	408
NFVA / Total Assets	0.739	0.208	0.613	0.799	0.893	408
NFVL / Total Assets	0.780	0.203	0.715	0.863	0.914	408
FVA1 / Total Assets	0.126	0.126	0.044	0.091	0.161	408
FVA2 / Total Assets	0.111	0.148	0.013	0.054	0.141	408
FVA3 / Total Assets	0.024	0.096	0.000	0.003	0.012	408
FVL1 / Total Assets	0.016	0.052	0.000	0.000	0.011	408
FVL2 / Total Assets	0.081	0.141	0.002	0.015	0.106	408
FVL3 / Total Assets	0.015	0.103	0.000	0.000	0.001	408
NI / Total Assets	0.008	0.108	0.002	0.005	0.009	408

Panel C: Value per Share

	Mean	Std. Dev.	25th Percentile	50th Percentile	75th Percentile	Obs. (firm-years)
Share Price	18.001	26.662	3.341	8.015	21.767	408
NFVA / Number of Shares	218.791	350.402	27.362	99.247	251.042	408
NFVL / Number of Shares	248.773	410.137	29.700	102.286	298.553	408
FVA1 / Number of Shares	39.815	84.077	2.034	13.386	33.115	408
FVA2 / Number of Shares	56.618	199.090	0.766	6.526	31.135	408
FVA3 / Number of Shares	6.821	33.569	0.018	0.357	2.204	408
FVL1 / Number of Shares	7.891	42.601	0.000	0.012	2.123	408
FVL2 / Number of Shares	40.815	157.519	0.097	2.147	18.545	408
FVL3 / Number of Shares	3.253	20.828	0.000	0.000	0.096	408
NI / Number of Shares	2.054	7.622	0.108	0.570	1.733	408

This table presents descriptive statistics for the whole sample of banks from 2006 to 2010. Panel A reports absolute values in billions of Euros, Panel B relative values in per cent of total assets, and Panel C values per share. MVE (Share Price) is the market value of equity (share price) three months after fiscal year end. BVE represents the book value of equity. NFVA (NFVL) is non-fair value assets (liabilites). FVA1 (FVL1), FVA2 (FVL2), and FVA3 (FVL3) represent fair value assets (liabilities) of the three IFRS 7 hierarchy levels. NI is net income.

Table 3: Value Relevance of Fair Value Assets and Liabilities

Dependent Variable: Share Price (fiscal year end + three months)

	Coefficient	Robust Std. Error	t-stat (coeff.=0)	p-value	t-stat (|coeff.|=1)	p-value
Intercept	7.071	1.215	5.818	0.000		
NFVA	0.561	0.146	3.845	0.000		
NFVL	-0.585	0.157	-3.719	0.000		
FVA1	0.687	0.151	4.547	0.000	-2.068	0.039
FVA2	0.690	0.160	4.302	0.000	-1.930	0.054
FVA3	0.321	0.160	2.005	0.046	-4.237	0.000
FVL1	-0.633	0.154	-4.120	0.000	2.393	0.017
FVL2	-0.700	0.160	-4.370	0.000	1.874	0.062
FVL3	-0.390	0.168	-2.327	0.020	3.634	0.000
NI	-0.065	0.076	-0.847	0.397		
Adj. R^2	0.484					
Obs.	408					
Comparison	F-stat	p-value				
FVA1=FVA2	0.013	0.910				
FVA1=FVA3	58.205	0.000				
FVA2=FVA3	49.620	0.000				
FVL1=FVL2	2.334	0.127				
FVL1=FVL3	12.145	0.001				
FVL2=FVL3	18.906	0.000				

The table presents OLS coefficient estimates, standard errors, t-stats, and p-values. The comparison section tests for significant differences between the OLS coefficient estimates of fair value assets (liabilities) of different measurement levels. The sample period spans from 2006 to 2010. NFVA (NFVL) is non-fair value assets (liabilites). FVA1 (FVL1), FVA2 (FVL2), and FVA3 (FVL3) represent fair value assets (liabilities) of the three IFRS 7 hierarchy levels. NI is the net income. All variables are on a per share basis. The standard errors are clustered to control for fixed effects (Petersen (2009)).

Table 4: Value Relevance of Fair Value Assets and Liabilities: EU15 and other European Banks

Dependent Variable: Share Price (fiscal year end + three months)

Panel A: EU 15 Banks

	Coefficient	Robust Std. Error	t-stat (coeff.=0)	p-value	t-stat (|coeff.|=1)	p-value
Intercept	3.315	1.003	3.304	0.001		
NFVA	1.058	0.121	8.733	0.000		
NFVL	-1.097	0.126	-8.703	0.000		
FVA1	1.082	0.112	9.697	0.000	0.737	0.462
FVA2	1.219	0.154	7.933	0.000	1.426	0.155
FVA3	0.544	0.273	1.996	0.047	-1.673	0.095
FVL1	-1.070	0.108	-9.947	0.000	-0.647	0.518
FVL2	-1.205	0.151	-7.994	0.000	-1.359	0.175
FVL3	-0.738	0.171	-4.325	0.000	1.536	0.126
NI	0.274	0.138	1.984	0.048		
Adj. R^2	0.760					
Obs.	269					

Comparison	F-stat	p-value
FVA1=FVA2	34.287	0.000
FVA1=FVA3	32.045	0.000
FVA2=FVA3	41.282	0.000
FVL1=FVL2	18.591	0.000
FVL1=FVL3	11.143	0.001
FVL2=FVL3	17.574	0.000

Panel B: Other European Banks

	Coefficient	Robust Std. Error	t-stat (coeff.=0)	p-value	t-stat (|coeff.|=1)	p-value
Intercept	10.537	1.653	6.373	0.000		
NFVA	0.275	0.079	3.458	0.001		
NFVL	-0.277	0.088	-3.162	0.002		
FVA1	0.448	0.087	5.164	0.000	-6.352	0.000
FVA2	0.342	0.095	3.596	0.000	-6.911	0.000
FVA3	-0.005	0.133	-0.038	0.970	-7.542	0.000
FVL1	1.517	0.237	6.403	0.000	10.624	0.000
FVL2	-0.558	0.088	-6.343	0.000	5.020	0.000
FVL3	-0.048	0.120	-0.402	0.689	7.929	0.000
NI	0.113	0.101	1.118	0.266		
Adj. R^2	0.600					
Obs.	139					

Comparison	F-stat	p-value
FVA1=FVA2	4.327	0.039
FVA1=FVA3	27.430	0.000
FVA2=FVA3	16.062	0.000
FVL1=FVL2	65.953	0.000
FVL1=FVL3	31.985	0.000
FVL2=FVL3	17.640	0.000

This table represents the OLS regression results for two subsamples. Panel A includes all banks in EU 15 states while Panel B comprises all other European banks, i.e. banks from new EU member states and EFTA states. The sample period spans from 2006 to 2010. NFVA (NFVL) is non-fair value assets (liabilites). FVA1 (FVL1), FVA2 (FVL2), and FVA3 (FVL3) represent fair value assets (liabilities) of the three different hierarchy levels. NI is the net income. All variables are on a per share basis. The standard errors are clustered to control for fixed effects (Petersen (2009)).

Table 5: Value Relevance of Fair Value Assets and Liabilities: Large and Small Banks

Dependent Variable: Share Price (fiscal year end + three months)

Panel A: Large Banks

	Coefficient	Robust Std. Error	t-stat (coeff.=0)	p-value	t-stat (|coeff.|=1)	p-value
Intercept	1.214	1.801	0.674	0.501		
NFVA	0.534	0.191	2.804	0.006		
NFVL	-0.511	0.204	-2.511	0.013		
FVA1	0.495	0.191	2.593	0.010	-2.643	0.009
FVA2	0.677	0.194	3.491	0.001	-1.669	0.097
FVA3	0.010	0.453	0.022	0.982	-2.187	0.030
FVL1	-0.488	0.194	-2.512	0.013	2.641	0.009
FVL2	-0.698	0.189	-3.701	0.000	1.602	0.111
FVL3	-0.072	0.382	-0.189	0.851	2.426	0.016
NI	1.609	1.076	1.495	0.136		
Adj. R^2	0.585					
Obs.	204					

Comparison	F-stat	p-value
FVA1=FVA2	12.831	0.000
FVA1=FVA3	5.340	0.022
FVA2=FVA3	7.973	0.005
FVL1=FVL2	10.588	0.001
FVL1=FVL3	3.527	0.062
FVL2=FVL3	6.340	0.013

Panel B: Small Banks

	Coefficient	Robust Std. Error	t-stat (coeff.=0)	p-value	t-stat (|coeff.|=1)	p-value
Intercept	6.448	0.929	6.937	0.000		
NFVA	0.929	0.119	7.807	0.000		
NFVL	-0.979	0.129	-7.574	0.000		
FVA1	0.978	0.120	8.118	0.000	-0.182	0.855
FVA2	0.883	0.122	7.236	0.000	-0.962	0.337
FVA3	0.868	0.140	6.219	0.000	-0.944	0.347
FVL1	-0.673	0.309	-2.179	0.031	1.058	0.291
FVL2	-0.894	0.117	-7.650	0.000	0.903	0.368
FVL3	-0.931	0.145	-6.433	0.000	0.480	0.632
NI	-0.238	0.082	-2.893	0.004		
Adj. R^2	0.648					
Obs.	204					

Comparison	F-stat	p-value
FVA1=FVA2	12.680	0.000
FVA1=FVA3	4.617	0.033
FVA2=FVA3	0.069	0.793
FVL1=FVL2	0.208	0.649
FVL1=FVL3	0.275	0.601
FVL2=FVL3	0.290	0.591

This table represents the OLS regression results for two subsamples partitioned by total assets. Panel A comprises large banks, i.e. banks with total assets above median value. Panel B comprises all banks with total assets below median value. The sample period spans from 2006 to 2010. NFVA (NFVL) is non-fair value assets (liabilites). FVA1 (FVL1), FVA2 (FVL2), and FVA3 (FVL3) represent fair value assets (liabilities) of the three IFRS 7 hierarchy levels. NI is the net income. All variables are on a per share basis. The standard errors are clustered to control for fixed effects (Petersen (2009)).

Table 6: Value Relevance of Fair Value Assets and Liabilities: Effects of Reclassification and Regulatory Capital

Dependent Variable: Share Price (fiscal year end + three months)

	Reclassification				Reclassification and Difference of Fair Values and Book Values				Regulatory Capital				Reclassification and Regulatory Capital			
	Coeff.	Robust Std. Error	t-stat (coeff.=0)	p-value	Coeff.	Robust Std. Error	t-stat (coeff.=0)	p-value	Coeff.	Robust Std. Error	t-stat (coeff.=0)	p-value	Coeff.	Robust Std. Error	t-stat (coeff.=0)	p-value
Intercept	8.014	1.643	4.878	0.000	8.069	1.501	5.375	0.000	7.033	1.595	4.410	0.000	7.935	1.402	5.660	0.000
NFVA	0.549	0.142	3.866	0.000	0.550	0.143	3.838	0.000	0.807	0.153	5.261	0.000	0.883	0.129	6.849	0.000
NFVL	-0.573	0.152	-3.760	0.000	-0.574	0.154	-3.730	0.000	-0.856	0.164	-5.227	0.000	-0.927	0.135	-6.864	0.000
FVA1	0.645	0.154	4.195	0.000	0.648	0.158	4.105	0.000	1.017	0.155	6.563	0.000	0.992	0.132	7.515	0.000
FVA1 * ReclassAssets	0.080	0.091	0.873	0.383	0.083	0.086	0.959	0.338					0.093	0.099	0.934	0.351
FVA1 * LowTier1Ratio									-0.141	0.079	-1.784	0.075	-0.048	0.090	-0.536	0.593
FVA1 * ReclassAssets * LowTier1Ratio													-0.140	0.116	-1.211	0.227
FVA2	0.677	0.156	4.343	0.000	0.679	0.157	4.316	0.000	0.944	0.172	5.482	0.000	0.924	0.155	5.955	0.000
FVA2 * ReclassAssets	0.003	0.040	0.084	0.933	-0.007	0.041	-0.179	0.858					0.107	0.038	2.807	0.005
FVA2 * LowTier1Ratio									0.053	0.022	2.391	0.017	0.186	0.055	3.410	0.001
FVA2 * ReclassAssets * LowTier1Ratio													-0.182	0.043	-4.231	0.000
FVA3	0.336	0.161	2.083	0.038	0.342	0.158	2.166	0.031	0.569	0.132	4.298	0.000	0.695	0.099	7.028	0.000
FVA3 * ReclassAssets	0.005	0.135	0.040	0.968	-0.039	0.239	-0.165	0.869					-0.279	0.348	-0.802	0.423
FVA3 * LowTier1Ratio									-0.315	0.226	-1.392	0.165	0.079	0.071	1.106	0.270
FVA3 * ReclassAssets * LowTier1Ratio													0.340	0.461	0.737	0.462
FVL1	-0.670	0.154	-4.361	0.000	-0.669	0.154	-4.337	0.000	-0.809	0.194	-4.181	0.000	-0.837	0.182	-4.603	0.000
FVL2	-0.693	0.149	-4.652	0.000	-0.692	0.151	-4.598	0.000	-0.974	0.170	-5.736	0.000	-1.044	0.158	-6.621	0.000
FVL3	-0.406	0.167	-2.434	0.015	-0.411	0.165	-2.496	0.013	-0.629	0.153	-4.112	0.000	-0.777	0.112	-6.951	0.000
NI	-0.062	0.077	-0.809	0.419	-0.053	0.059	-0.900	0.369	-0.029	0.077	-0.377	0.707	-0.021	0.076	-0.274	0.785
ReclassAssetsFVBV					-2.935	4.737	-0.620	0.536								
ReclassAssets	-3.188	1.581	-2.016	0.044	-3.379	1.267	-2.667	0.008					-1.582	1.334	-1.186	0.237
LowTier1Ratio									-0.250	1.671	-0.150	0.881	-3.693	1.878	-1.967	0.050
ReclassAssets * LowTier1Ratio													-0.130	2.730	-0.048	0.962
Adj. R^2	0.475				0.475				0.578				0.606			
Obs.	390				390				339				322			

This table presents OLS results of four regression models. These models are based on the basic regression model (Equation 3). NFVA (NFVL) is non-fair value assets (liabilites). FVA1 (FVL1), FVA2 (FVL2), and FVA3 (FVL3) represent fair value assets (liabilities) of the three IFRS 7 hierarchy levels. NI is the net income. The standard errors are clustered to control for fixed effects (Petersen (2009)). Model 1 includes the dummy variable ReclassAssets which is one for banks with reclassified financial assets and zero otherwise. Model 2 is based on model 1 and includes a the variable ReclassAssetsFVBV which is the difference between the fair value and the book value of reclassified financial assets. In model 3 the dummy ReclassAssets is replaced by the dummy LowTier1Ratio. LowTier1Ratio is one if a bank has a below median Tier 1 capital ratio and zero otherwise. Model 4 includes both ReclassAssets and LowTier1Ratio. All dummy variables are interacted with the fair value assets of all three levels. The sample period for models 1, 2, and 4 spans from 2008 to 2010 because the additional reclassification options were introduced in 2008. For models 3 and 4 I exclude all bank-years from the sample without data on Tier 1 capital ratio.

Table 7: Value Relevance of Fair Value Assets and Liabilities: Robustness Checks

Dependent Variable: Market Value of Equity (fiscal year end + three months)

Panel A: Deflator Book Value of Equity

	Coefficient	Robust Std. Error	t-stat (coeff.=0)	p-value	t-stat (|coeff.|=1)	p-value
Intercept	0.641	0.119	5.394	0.000		
NFVA	0.347	0.098	3.554	0.000		
NFVL	-0.352	0.098	-3.595	0.000		
FVA1	0.469	0.090	5.214	0.000	-5.911	0.000
FVA2	0.353	0.121	2.918	0.004	-5.348	0.000
FVA3	0.061	0.077	0.789	0.430	-12.145	0.000
FVL1	-0.531	0.165	-3.213	0.001	2.841	0.005
FVL2	-0.297	0.095	-3.114	0.002	7.389	0.000
FVL3	-0.117	0.069	-1.699	0.090	12.795	0.000
NI	-0.011	0.082	-0.133	0.894		
Adj. R^2	0.130					
Obs.	408					
Comparison	F-stat	p-value				
FVA1=FVA2	15.560	0.000				
FVA1=FVA3	8.911	0.003				
FVA2=FVA3	4.250	0.040				
FVL1=FVL2	12.102	0.001				
FVL1=FVL3	7.974	0.005				
FVL2=FVL3	1.981	0.160				

Panel B: Deflator Market Value of Equity (WLS approach of Easton and Sommers (2003))

	Coefficient	Robust Std. Error	t-stat (coeff.=0)	p-value	t-stat (|coeff.|=1)	p-value
Intercept	0.001	0.003	0.317	0.751		
NFVA	0.423	0.101	4.195	0.000		
NFVL	-0.435	0.105	-4.127	0.000		
FVA1	0.473	0.101	4.699	0.000	-5.232	0.000
FVA2	0.394	0.124	3.175	0.002	-4.882	0.000
FVA3	0.340	0.080	4.277	0.000	-8.295	0.000
FVL1	-0.381	0.081	-4.688	0.000	7.631	0.000
FVL2	-0.389	0.128	-3.039	0.003	4.765	0.000
FVL3	-0.340	0.085	-4.010	0.000	7.789	0.000
NI	-0.058	0.060	-0.971	0.332		
Adj. R^2	0.491					
Obs.	408					
Comparison	F-stat	p-value				
FVA1=FVA2	21.040	0.000				
FVA1=FVA3	19.806	0.000				
FVA2=FVA3	2.588	0.108				
FVL1=FVL2	0.071	0.790				
FVL1=FVL3	1.032	0.310				
FVL2=FVL3	2.315	0.129				

This table represents the results of the robustness checks. Following the long standing debate about the appropriate deflator in market-based accounting research I replace the number of shares outstanding by book value of equity (Panel A) and market value of equity (Panel B). As Easton and Sommers (2003) argue, deflating by market value of equity can be done by using a WLS regression. Accordingly, Panel A reports OLS regression results while Panel B reports WLS regression results. The sample period spans from 2006 to 2010. NFVA (NFVL) is non-fair value assets (liabilites). FVA1 (FVL1), FVA2 (FVL2), and FVA3 (FVL3) represent fair value assets (liabilities) of the three IFRS 7 hierarchy levels. NI is the net income. The standard errors are clustered to control for fixed effects (Petersen (2009)).

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Abstract
According to IFRS 7, banks have to disclose the inputs used in measuring the fair value of financial instruments. For this purpose the standard defines a three-level measurement hierarchy. The reliability of fair values is expected to decrease with decreasing hierarchy level due to the lower quality of the input factors. Using a value relevance research setting, I find that investors perceive the reliability of level 3 fair values as significantly lower than the reliability of level 1 fair values. However, in contrast to expectations, level 2 fair values are not perceived as less reliable. Thus, investors only doubt the reliability of fair values whose inputs are based on discretionary assumptions. Additionally, this paper analyses the impact of the reclassification of financial assets and of the regulatory capital ratio on the reliability of fair values. While I find a weakly significant impact of the regulatory capital ratio, the reclassification has in general no influence on the reliability of reported fair values.

Keywords
Fair Value Hierarchy, Reclassification, Reliability, Value Relevance

JEL Classification
C23, G14, G21, M41

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