



SONDERFORSCHUNGSBEREICH 504

Rationalitätskonzepte,
Entscheidungsverhalten und
ökonomische Modellierung

No. 07-75

How Does Fair Value Measurement under IAS 39 Affect Disclosure Choices of European Banks?

Jannis Bischof*
and Jens Wüstemann**

August 2007

Financial support from the Deutsche Forschungsgemeinschaft, SFB 504, at the University of Mannheim, is gratefully acknowledged.

*Sonderforschungsbereich 504, email: jannis.bischof@bwl.uni-mannheim.de

**Lehrstuhl für ABWL und Wirtschaftsprüfung/Sonderforschungsbereich 504, email: wuestemann@bwl.uni-mannheim.de



Universität Mannheim
L 13,15
68131 Mannheim

How Does Fair Value Measurement under IAS 39 Affect Disclosure Choices of European Banks?

Jannis Bischof*

Jens Wüstemann[†]

Preliminary Discussion Paper

First Version: August 2007

This Version: April 7, 2008

Abstract

There is a considerable degree of heterogeneity in the way how European banks present their financial instruments in IFRS financial statements. In a sample of 109 European banks, we identify three major presentation formats that are currently applied: a presentation by measurement category, by product, and by purpose. We find the use of the measurement categories, which were originally designed by IAS 39 for measurement purposes, as line items to be the prevalent choice across countries. We analyze the factors that could explain this disclosure choice. We find that a corresponding regulatory recommendation has a strong effect on the choice. We further find that the disclosure of measurement categories is negatively associated with the relative book value of financial assets measured at fair value. This finding suggests discretionary disclosure management by banks. We conclude, based on behavioral theory, that banks expect investors to have a negative bias in the risk perception of assets measured at fair value.

JEL-Classification: G11, G21, K22, M41

Keywords: Availability Effects, Bank Disclosure, Bank Regulation, Fair Value, Financial Instruments, IAS 39, Presentation

Data Availability: BvD BankScope, own data from public financial statements

* University of Mannheim, jannis.bischof@bwl.uni-mannheim.de.

[†] University of Mannheim, wuestemann@bwl.uni-mannheim.de.

1 Introduction

The banking industry was once on the forefront of European IFRS adoption. One of the industry's major intentions was the accomplishment of greater comparability of financial statements across Europe (Cairns (1996)). The decision to adopt IFRS was then a courageous one since there was no comprehensive standard on accounting for financial instruments, by far the largest class of any bank's assets. Today, the guidance on how to account for financial instruments under IFRS is published in a booklet of some 500 pages. Yet it remains doubtful whether the once aspired comparability has indeed been accomplished. A major obstacle to comparability, and thereby to decision-usefulness, is the non-uniform way in which banks present their financial instruments in their financial statements. The aim of our paper is both to give a detailed description of today's heterogeneous practice and to explain the factors that might drive the disclosure management that accounts for this heterogeneity.

Fair value measurement is involved in nearly any discussion on accounting for financial instruments. Some European countries, such as Denmark, have a long tradition of measuring banks' financial assets at fair value (Bernard et al. (1995)). In other countries, the implementation of fair value accounting in the course of the adoption of IAS 39 was highly controversial and it was the French government who finally arrived in the carve-out of some passages of the extant IAS 39 (Walton (2004)). It will thus not be surprising that our hypotheses on disclosure choices by European banks are considering the effects of the current regime of fair value measurement. We can do so because not only is the presentation of financial instruments left to a bank's discretion but so is the measurement of a remarkable portion of its financial assets and as a result, there will likely be some interaction between a bank's disclosure choice and its choice of a measurement base. We strive to measure this interaction empirically.

In the due course of this analysis, we will approach a classical problem of accounting (or disclosure) choice by a bank's management that is motivated by several factors such as the risk perception of its investors (and thus indirectly the pricing of its assets) or as third party relations, e.g. with regulators (Fields et al. (2001)). We primarily focus on disclosure choices that are directly re-

lated to the presentation of financial instruments on the face of the balance sheet. This focus is justified by experimental evidence suggesting that easily accessible information from the balance sheet corresponds more strongly with market prices than less easily accessible information from the footnotes does and is therefore of greater importance in the strive for comparability (Dietrich et al. (2001) and Bloomfield and Libby (1996)).

We try to capture the disclosure choice by means of a data set that is (for the most part) directly collected from the financial statements of 109 European banks and that is unique in that it encodes the presentation format of financial instruments based on the general and overall appearance of the financial statement which is by its nature not recorded in standard data bases. We contribute to the literature as we diligently develop a theoretical explanation for disclosure choice that is based on extant behavioral theory and on prior experimental evidence suggesting that investors tend to associate a higher risk with assets known to be measured at fair value than with other assets of the same economic characteristics.

Our main result quite reliably confirms that management takes this bias into account when presenting its financial assets. In particular, we find that the extent of a bank's fair value measurement is negatively associated with the probability of disclosing the measurement basis. This effect is only partially offset by regulatory (non-binding) action taking place in some European countries. We also analyze the disclosure of financial derivatives that are also subject of ample behavioral research. We observe that disclosure of financial derivatives is not a strategic choice but rather driven by the materiality of a bank's derivative usage and thus (unlike the disclosure of measurement bases) not limiting the comparability of financial statements.

The remainder of the paper is organized as follows: In section 2, we present our research questions and we derive our hypotheses from prior research. In section 3, we present our descriptive findings on the disclosure practice of banks across Europe. In section 4, we present and discuss the results of a univariate analysis and a binary multivariate regression explaining the factors that are associated with a certain pattern of disclosure choice identified in section 3. Conclusions and implications of our study are discussed in section 5.

2 Research Questions and Development of Hypotheses

Industry Practice in the Presentation of Financial Instruments

In general, there are three possibilities for banks to present their financial instruments on a financial statement. The first possibility is a presentation by investment purpose that distinguishes, for example, between a hedging and a trading instrument. The second possibility is a presentation by type. This presentation format was advocated by the Joint Working Group (JWG) of Standard Setters which particularly aimed at a distinction between derivative and non-derivative instruments and later recommended in its draft standard on accounting for financial instruments (Joint Working Group of Standard Setters, 1997, BC 5.1-5.5). Indeed, the detail of information about derivatives usage provided by banks seems to have improved in the 1990's at least in the US (Edwards and Eller (1995) and Edwards and Eller (1996)). The third format is a presentation by measurement category. IFRS 7 allows a bank to use those measurement categories that were introduced by IAS 39 for measurement purposes as line items on the financial statement so that the choice of an instrument's measurement base might not only affect the company's income but also presentation and disclosure (Gornik-Tomaszewski (2006)).

There is still some theoretical controversy on whether the latter format is compatible with the general presentation principles under IAS 1. The main point in this controversy is that IAS 1 demands a separate presentation of financial assets held for investment purposes and of receivables from goods and services which may however be classified into several different measurement categories. A presentation by measurement categories would thus fail to provide some information required by IAS 1 (L6w (2006)) in that some line items will consist of both financial assets held for investment purposes and receivables thereby not enabling investors to distinguish between these two kinds of instruments. Our first research question is thus a simple positive question: *Can we infer from the disclosure practice of European banks which presentation formats of financial instruments are actually in conformity with extant IFRS?* The actual practice of European banks is of importance in this case as in the absence of a specific disclosure policy management has to base its disclosure choice on professional judgment which is in the end tantamount to an interpretation

of accounting standards in terms of industry practice (IAS 8.12). A widely applied disclosure policy that is accepted by auditors would under this rationale be in conformity with extant IFRS just by itself. Insights into accepted industry practice are therefore indispensable to the application of IFRS 7. We will refer to industry practice by testing two hypotheses:

H1a: There is a variety of formats applied by the European banking industry in the presentation of financial statements.

H1b: A presentation by measurement categories is an accepted disclosure practice in the European banking industry.

The test of these hypotheses calls for a descriptive analysis of presentation formats used in the European banking industry. We will reject (H1a) if we cannot identify more than one presentation format applied by more than one bank, i.e. we believe an accepted industry practice to be an implicit disclosure option that is exercised by more than one individual bank. We will however not restrict our analysis to a description of the set of accepted procedures but also, as it is the nature of positive accounting theory, focus on explanations of banks' choice among those accepted procedures (Watts and Zimmerman, 1986, p. 246) so that our second research question is: *What drives this disclosure choice?* There are at least two general choices that differ by its nature. The first choice is about the overall presentation format, i.e. a choice between the three presentation formats identified above. The second choice is about the partition of global line items into subcategories, e.g. a distinction between trading assets and designated assets among the financial assets in the fair value category or a distinction between trading and hedging instruments among the financial derivatives.

Choice of the Presentation Format

The way in which to present the financial statement is a particularly important disclosure choice to be made by bank management since balance sheet information is of greater relevance for investors than any additional information in the footnotes. Dietrich et al. (2001) and Bloomfield and Libby (1996) provide experimental evidence that the association between balance sheet information and market prices is stronger than the association between footnote information and market

prices. Corresponding empirical evidence for accounting information about financial derivatives is given by Ahmed et al. (2006) and by McAnally (1996). With respect to short-term liabilities, Gramlich et al. (2006) find that even debt ratings are affected by the balance sheet classification of the instruments. Generally spoken, an identical underlying economic situation will be perceived to be of different risk if the balance sheet does not appear in an identical format. It is thus reasonable to assume that management's choice of a presentation format for its financial statement is a strategic one that can be explained by different factors.

A first explanation seems apparent. Banking institutions are like almost no other industry affected by regulatory activity. Regulatory activity usually focuses on the enforcement of capital restrictions and on additional risk disclosures besides the financial statement (Linsley and Shrivess (2005), Basel Committee on Banking Supervision (2003)). There are however some national regulating institutions that prescribe how to present the balance sheets in regulatory filings. An explicit recommendation is given in several countries to present financial instruments by measurement category (in the case of France see for example Commission Bancaire de la Banque de France (2006)). Such a recommendation is in conformity with a guideline issued by the Committee of European Banking Supervisors (CEBS (2007)) as an attempt to harmonize regulatory activity in Europe. It is nevertheless non-binding since it is neither the responsibility nor the competence of bank regulators to interpret financial reporting standards. A regulatory recommendation can thus never override a presentation principle underlying the IFRS which is endorsed by the European legislative. It can yet be hypothesized that there is a *de facto* effect of such a regulatory action that is mainly due to costs arising from a non-conformity of regulatory filings and financial accounting. The costs may be modeled as \widetilde{C}_H if disclosure deviates from the regulatory filing and as \widetilde{C}_L otherwise where $E(C_L) < E(C_H)$ so that there is a direct effect of a regulatory recommendation on the costs of disclosure: If a bank had to present its financial assets by measurement categories in its reports to a regulatory institution, the use of another presentation format in external reports to the capital markets would result in a net cost of $\widetilde{C} = \widetilde{C}_H - \widetilde{C}_L$ the expected value of which would be positive. The net cost of disclosing the measurement categories would in this case however be 0 as no transition of the accounting data is necessary.

A second explanation is less apparent and it needs behavioral theory to establish the hypothesis that also the extent to which fair value is implemented by a bank as a measurement base for its financial instruments might affect disclosure choice. Behavioral theory has it that the individual perception of information by investors and the use of this information in decision-making strongly relies on the format in which the information is presented (i.e. on its framing, see Tversky and Kahneman (1986)). One behavioral heuristic that is applied by decision-makers is representativeness (Tversky and Kahneman (1974)). The concept refers to the observation that investors base their judgment of new information on its representativeness for certain events (Shleifer, 2000, p. 112). Another heuristic classified as association-based error are labeling or availability effects (see Folkes (1988) and Levin et al. (1985) for examples). These effects describe how easily examples of certain events come to the mind of decision-makers and thereby affect the probability attached to these events. As a result, decision-makers will judge events which are easier to recall or imagine to be more common (Hirshleifer (2001)).

There is by now some convincing evidence how the distinction of a certain type of financial instrument, i.e. the ease by which decision-makers can recall it, will result in a biased risk perception by investors. The ease is particularly high for financial derivatives due to investor's cognitive availability of losses from derivatives usage broadly covered in the media (Koonce et al. (2005a), Koonce et al. (2005b), and Koonce et al. (2006)). This is a serious case against the JWG approach to present financial instruments by type. Furthermore, the same argument might hold as regards the presentation of financial instruments by measurement base. Reasonable investors with a basic knowledge of IFRS accounting could readily be aware of the IASB's repeatedly and publicly stated objective to measure at least those instruments at fair value that are exposed to short-term market risk and that in particular unexceptionally all financial derivatives are regarded to be exposed to that kind of risk. The more financial assets a bank presents under the label of fair value measurement, the more likely will investors then be to associate short-term market risk with the bank - even though the same instruments might just as well be involved in a well-hedged trading strategy. This negative association could easily have been established by media coverage as fair value measurement was at the core of the political controversies surrounding the adoption of IAS 39

(see Walton (2004) or Hague (2004)). Besides the French government, it was especially the ECB which stressed the volatility of that measurement base and its potential risks for the whole banking industry (European Central Bank (2004), see Armstrong et al. (2007) for a timeline of IAS 39 implementation in Europe).

A potential net cost of not disclosing measurement categories resulting from regulatory action could thus be offset by the negative effects of investor's biases in the risk perception of the fair value category. The negative effect can be theoretically motivated if management's utility function was in some way directly linked to firm value and accordingly to the cost of capital. A management compensation function establishes such a link (for the ease of discussion we neglect potential agency problems in the due course). Lambert et al. (2007) have shown that cost of capital generally depends on investors' assessment of the covariance between the cash flows of a firm with the cash flows of all market participants. The assessment of the variance of a firm's own cash flows forms part of this evaluation. This is where we can combine classical capital market theory and the insights from behavioral theory discussed above: It is the variance of the cash flows of two economically alike banks that is perceived to differ if investors learn that fair value measurement is applied by one bank but not by the other bank. There is ample evidence that volatile earnings are thought to be riskier than smooth earnings (Graham et al. (2005)) and that fair value measurement in the mixed accounting model under extant IAS 39 results in more volatile earnings (for financial instruments in the banking industry: Conclusions from a simulation model (2004)). This is an economic explanation why a bank exposed to interest rate risk and disclosing a fair value label on the face of the balance sheet is judged to be of higher risk than an identically exposed bank disclosing fair value results solely in the notes (see Hirst et al. (2004) for experimental evidence).¹ In terms of a pricing model, a higher risk is tantamount to a higher variance of cash flows.

It is now straight forward to compare the advantages and the disadvantages of a presentation by measurement categories. Let \tilde{X} denote a fictitious present value of a bank's total assets if the risk

¹ In another chapter of my dissertation, I use experimental methods to verify that effect. According to my results, risk perception of banks varies with the measurement category a financial instrument is classified into ($p < .01$). The risk of a bank presenting the fair value category is judged to be higher than the risk of banks presenting trading instruments or available for sale instruments ($p < .01$). See Bischof and Ebert (2007) for a detailed discussion.

premium is unbiased and let $R(\theta) \leq 1$ denote the discount factor on the (fictitious) present value of those assets that are presented under a fair value label where $\frac{\partial R}{\partial \theta} < 0$ since the estimated variance of the bank's cash flows increases with the extent of fair value measurement denoted by θ . The resulting loss from fair value disclosure is thus $\tilde{L} = (1 - R(\theta))\theta\tilde{X}$ where $\frac{\partial \tilde{L}}{\partial \theta} > 0$. Management can avoid \tilde{L} either by foregoing the fair value option and thereby minimizing the extent of fair value measurement or by opting for another presentation format than the measurement categories. Forgoing the fair value option would however be contrary to evidence that, if the company's trading portfolio is sufficiently well hedged, income measurement on fair value basis positively affects a company's perception by analysts (Hirst et al. (2004)) and that fair value measurement of financial assets provides higher value relevance compared to amortized costs (Barth (1994), Eccher et al. (1996) or Venkatachalam (1996)). Hence, by opting for another presentation format as a mean of disclosure management, banks could still gain from the positive effects of income measurement on basis of fair values and at the same time avoid the negative effects from the use of fair value as a label on the financial statement. We are now able to derive a probability of management disclosing its measurement categories on the face of the balance sheet. It is identical with the probability P of \tilde{L} being smaller than \tilde{C} . $P(\tilde{L} < \tilde{C})$ is decreasing with θ increasing and it is increasing the more explicitly national bank regulation demands filings in which measurement categories are used as line items. In the latter case, the cost of disclosure would be particularly high. From this, we can derive two hypotheses that we are going to test empirically:

H2a: The probability of a bank disclosing its measurement bases on the face of its balance sheet is negatively associated with the extent of fair value measurement.

H2b: The probability of a bank disclosing its measurement bases on the face of its balance sheet is positively associated with the existence of a (non-binding) recommendation by a national regulation authority concerning the presentation format.

Choice of the Presentation Depth

Since (H2a) and (H2b) are derived from behavioral theory, we shall focus more specifically on two line items that are subject of bias research in that field: financial assets measured at fair value

and financial derivatives. Both items are heterogeneous in nature and could thus be partitioned into subcategories. The fair value category on the one hand contains both assets held for trading and assets voluntarily designated for fair value measurement. Financial derivatives on the other hand can be either hedging instruments or trading instruments held for speculative purposes. An unbiased disclosure choice of the depth of presentation would only consider the materiality of the respective item for the individual bank. The extent of fair value measurement and the extent of derivatives usage would in this case be positively associated with the probability of a bank partitioning each category in its financial statement. An offsetting effect could again be triggered by a biased risk perception of investors. With respect to the fair value category, the association with volatility, i.e. a higher assessment of the cash flow variance, could keep management from placing more emphasis on the line item by partitioning it into trading instruments and (voluntarily) designated instruments so that we had to reject the following null:

H3a: The separate disclosure of financial assets held for trading and financial assets voluntarily designated for fair value measurement is positively associated with the materiality (i.e. the relative value) of a bank's fair value category.

Evidence on the risk perception of financial derivatives is more ambiguous. On the one hand, management is aware of the findings on the availability of negative media coverage discussed above. Bodnar and Gebhardt (1999) and Vietze (1997) found in survey studies that a substantial number of managers anticipated a lack of knowledge about derivatives usage and the resulting negative associations in their disclosure choices. Besides there is a tendency to hide speculative involvement with financial derivatives (Benston and Mian (1995)). On the other hand, more recent findings suggest that the risk associated with derivatives usage significantly decreases if the hedging purpose is made explicit, i.e. if hedging instruments are presented separately (Koonce et al. (2005a)). This finding can be explained by evidence that certain classes of financial derivatives indeed reduce the risk exposure of banks (Guay (1999), McAnally (1996)). The null will thus only be rejected if the first effect is dominant:

H3b: The separate disclosure of financial derivatives held for trading and those held for hedging is positively associated with the materiality (i.e. the relative value) of a bank's derivatives usage.

3 Disclosure Practice of European Banks

3.1 Sample

Our sample consists of 109 banks from 28 different European countries. All banks included in the sample present their audited group accounts in accordance with IFRS. Banks were selected on a random basis with the only restriction that at least two banks from each country were to be included. The sample can thus be regarded to be representative for European banks that apply IFRS. The restriction was introduced as the study also aims to analyze possible cross-country differences in the presentation of financial instruments. Data on equity listings and on selected capital as well as financial ratios is taken from the BvD BankScope database. Most of the data however is collected directly from the 2006 financial statements of the banks. The statement of each bank was carefully analyzed in two respects. On the one hand, we were interested in the exact labels of the line items under which financial instruments were presented. On the other hand, we used information provided in the footnotes about the measurement categories that those financial assets were classified into under IAS 39. The data contained in our sample is thus unique.

Descriptive statistics on bank size (total assets) and on the number of line items on the face of the balance sheet that are used to present financial instruments are summarized and differentiated by countries in table 1. The summary shows that banks are extremely heterogeneous in size with total assets within a range from 77m. to 1,491,388m. EUR. The heterogeneity is due to our objective to consider a large number of European countries in the sample. This makes it though necessary to control for size in our later analysis of disclosure choice. The data is not as heterogeneous in the number of line items analyzed. 91 out of the 109 banks use between 4 and 6 different line items to present their financial instruments. Only one bank (from Estonia) uses the minimum of 2 and only one bank (from the Czech Republic) uses the maximum of 8 items. Thereby, we do

not consider items representing cash or cash equivalents because we found their presentation to be sufficiently uniform across Europe. Neither did we consider investments in associates that were measured at equity since those assets are explicitly exempt from the scope of IAS 32, IAS 39 and IFRS 7 (IAS 32.4(a) and IAS 39.2(a)). As our main objective is to analyze the presentation format as well as some selected line items but not the overall presentation depth of bank statements, we further regarded in a few cases different line items that were very similar in nature to be identical.

3.2 Findings on Industry Practice

Three different presentation formats can be identified that are applied by more than 10 European banks in our sample. More than half of the banks (51.4%) present their financial instruments along those categories that were originally introduced by IAS 39 for measurement purposes. There are still 17 banks (15.6%), most of them from Northern Europe, that follow the JWG approach to present the instruments by product type. This is a substantial decrease over the last decade since Vietze (1997) has found that 63% of survey respondents regarded a classification by the types of financial instruments (particularly financial derivatives) as desirable. As outlined in section 2 of this paper, both these formats are challenged not to be in accordance with the general presentation principles underlying IAS 1. Only 13 banks (11.9%), however, acknowledge this lack of consistency between IAS 1 and IFRS 7 and present their financial instruments by purpose - a format that is compatible with both IAS 1 and IFRS 7. Only in Germany and in Austria, those banks are in the majority. A detailed summary of the presentation formats used in each country is given in table 2.

Given the evidence presented in table 2, we are already able to conclude that we definitely fail to reject our hypothesis (H1b). The data rather suggests that the measurement categories introduced by IAS 39 are widely used in the presentation of financial instruments and that this establishes an accepted accounting practice in the European banking industry. In conformity with IAS 8.12, such a prevalent industry practice shall be a guidance in management's interpretation of IFRS 7. Thus, even if professional judgment is, due to the lack of guidance on disclosure policy, required in that decision, the choice of a presentation format will not be impeded by the potential inconsistency between IFRS 7 and IAS 1 which is argued to inhibit a presentation by

measurement categories (see above, section 2). We even find that there are some further banks not consistently applying a presentation by measurement categories but presenting at least some selected measurement categories along with other line items. This finding is true especially for the fair value category and for assets classified as loans & receivables. Whereas only 56 banks present all measurement categories being used, 67 banks (61.5%) present the total amount of assets measured at fair value through profit & loss and 72 banks (66.1%) present their loans & receivables on the face of their financial statement.

Banks differ however quite substantially in the way these two categories are presented (see table 3 for the details). This is particularly due to the fact that a wide variety of different financial assets can be classified in either category. Derivatives and trading assets are generally classified into the fair value category and approximately half of the banks, independent of the presentation format used, present separate information on these two asset classes. Assets that are optionally measured at fair value are on the other hand only separately presented, again by half of the banks, if a bank does also present the overall category separately. Loans & receivables mainly differ in the counterparty. It is common to subdivide the presentation of the category into receivables from customers and into those from other credit institutions. It is much less common also to present receivables from public institutions separately. Overall, it is interesting to see that the general presentation format is, except for the use of the fair value option, without immediate effect on the presentation of subclasses of assets contained in these categories.

We further conclude that we also fail to reject hypothesis (H1a) stating that there is more than one acceptable presentation policy for financial statements in the banking industry. The positive findings on disclosure choices by European banks indicate that there is a *de facto* choice between at least three general presentation formats. Notwithstanding a *de jure* answer to the normative problem whether all those formats are consistent with IAS 1, we do observe a non-uniform presentation of financial instruments across Europe. Since theory predicts managerial flexibility in recognition and disclosure as one effect of inconsistent accounting rules (Wüstemann and Kierzek (2007)), it is at least possible that the inconsistency between the general presentation principles under IAS 1 and the more specific rules under IFRS 7 has actually driven the variety of disclosure

choices. If we accept that a consequence of a non-uniform application of accounting rules is a lack of comparability and thereby a severe violation of the theoretical concept of decision-usefulness that is very strongly articulated by the IFRS Conceptual Framework, this finding calls for activity of either the standard setter itself or of the European enforcement institutions.

4 Fair Value Measurement and Disclosure Choice

From our results in section 3, we can derive that there is, under IFRS 7, a general disclosure choice for banks how to present their financial instruments to investors. The findings suggest that there is a particular choice whether to present the measurement categories on the face of the financial statement. A disclosure of the measurement categories will generally come along with a disclosure of the use of fair value as a measurement base. The literature summarized in section 2 gives theoretical arguments for incentives both to disclose fair value measurement and to conceal it. An answer can thus only be given on an empirical basis. Our comprehensive data on line items used in the financial statements of European banks proves to be useful for that purpose.

We model the disclosure behavior of a bank as a binary choice. Our dependent variable, MEAS-DISCL, takes a value of 1 if a bank discloses its measurement categories in its financial statement and a value of 0 otherwise. The three test variables, FVREL, TRADREL and BANKREG, are inferred from our hypotheses (H2) and (H3). FVREL represents the relative book value of a bank's financial assets that are measured at fair value through profit & loss (as a fraction of the book value of total assets). We use it as a proxy for the extent to which a bank applies fair value as a measurement base. In accordance with (H2a) and (H3a) we expect FVREL to be negatively associated with the choice to disclose the measurement categories and to be positively associated with the separate disclosure of trading assets and designated assets in the fair value category. TRADREL is the ratio of the book value of a bank's trading assets to the book value of its total assets. We use it as a proxy for the extent of derivatives usage since we assume a larger trading activity to be tantamount to a more extensive use of financial derivatives. In accordance with (H3b) we expect TRADREL to be positively associated with the separate disclosure of financial derivatives. BANKREG is a

dummy variable that refers to the regulatory environment of a bank and is thus used in our tests of (H2b). It takes a value of 1 if a national regulatory institution explicitly recommends a presentation by measurement categories. In accordance with (H2b), we expect the variable to be positively associated with MEASDSCL.

Univariate Analysis

In a univariate analysis of (H2a) and (H2b), we first test for differences in the means of FVREL and in the proportions of BANKREG between the two groups of banks that are separated by MEASDSCL. The statistical results are summarized in table 5. Banks that disclose its measurement categories have, on average, a relative book value of assets measured at fair value through profit & loss of .1191. We find an average book value of .1815 for banks that conceal its measurement categories, at least on their financial statements. The difference is significant (two-sided p-value = .026). The results are also significant for our findings on the effect of regulatory recommendations. Only 2% of the banks concealing its categories do so in opposition to a regulatory recommendation, whereas 40% of the disclosing banks do so in conformity with an existing regulatory recommendation (two-sided p-value < .01).

A univariate test of (H3a) does not yield a significant result. The extent of fair value measurement is smaller in banks separately disclosing trading assets and designated assets (.1201) than in banks not doing so (.1563). Bank regulation on the other hand also affects the disclosure of the fair value category significantly. Concerning the disclosure of derivatives (H3b), we can observe that materiality is the determining factor of presentation depth. The total book value of derivatives is significantly higher (two sided p-value =.045) in banks separately disclosing derivatives usage than in other banks.

Empirical Model

The findings suggest that FVREL and BANKREG do affect the choice of MEASDSCL in opposite directions just as we hypothesized based on our theoretical model in section 2. We now assume normality in the distribution of the error terms (Maddala (1991)) so that we are able to transform our theoretical model in a joint model that can be tested empirically by means of a

probit regression. The probability of a bank disclosing its measurement categories can then be described as

$$Pr(Y_i = 1|X_i) = \Phi(X_i'\beta)$$

for banks $i = 1, 2, \dots, n$, where Y_i denotes the dependent variable, i.e. either MEASDSCL, FVD-SCL or DERDSCL, and X_i denotes a vector of explanatory individual-level variables that varies in scope and content between models I, II, and III. Such an ordinary probit regression is a common method in the analysis of accounting choice in general (see, e.g., Leuz (2003) for the choice between IFRS and U.S. GAAP, or Beatty and Weber (2006) for the decision on a goodwill write-off) so that it seems reasonable to apply it in our specific model of disclosure choice. We will use the same general model to test the probability of management's choice of FVDSCL and of DERDSCL dependent on FVREL and TRADREL, respectively.

In a probit regression, we are able to use further control variables that are omitted in the univariate analysis but that were identified in other studies as being explanatory for disclosure or accounting choice and the omission of their potentially confounding effects could thus bias our results. Wasley and Wu (2006) for example find analyst following to be explanatory for the decision to voluntarily disclose cash flow forecast. We use the public listing of a bank's equity instrument as a proxy for analyst following. LISTING is used as a binary control variable taking a value of 1 if at least one equity instrument of a bank is publicly listed. It can explain disclosure choice if public investors have different informational needs than private investors. Size is regarded to be another explanatory variable in various settings (see Kerstein and Rai (2007) or Baginski et al. (2004) for recent examples). We use the natural logarithm of the book value of a bank's total assets as a proxy for size (LN BV). Other factors that might explain disclosure choice are a bank's leverage and its profitability (Gramlich et al. (2001)). Therefore, we introduce EQUITY (a bank's ratio of the total book value of equity to the book value of its total assets) and RETURN (a bank's ratio of net income to its book value of equity) into the matrix of control variables. In order to control for differences in corporate governance that might explain different disclosure choices, we use BOARD (the number of board managers as reported by BankScope) as a proxy for the quality of corporate governance. Descriptive statistics on all variables can be found in table 4. For the

analysis of FVDSCL, we include BANKREG as a further control variable because a regulatory recommendation for a presentation by measurement categories also affects the way in which the fair value category is presented.

In model I, we test for the exclusive effects of the test variables on the disclosure choice. In model III, we introduce the complete matrix of control variables to reduce a potential endogeneity bias in the coefficients on the test variables. In model II, we omit BANKREG in order to observe a potential interaction with the test variable FVREL. (Model II is of course redundant in the analysis of DERDSCL.) Since we identified several country patterns in section 3 of this paper, we use robust standard errors where countries serve as clusters. All statistics are summarized in tables 6-8.

Results

The results seem to underline our findings in the univariate analysis. In individual tests of the effect on MEASDSCL, the coefficients on both explanatory variables are significantly different from zero in all three models. This result holds at a 5% level in a simultaneous test on both coefficients using Scheffé's S-method. The coefficient on BANKREG is fairly robust in models I and III. The results suggest that a regulatory recommendation to present the measurement categories increases the probability of a corresponding disclosure, on average, by an absolute amount of approximately .54. This is the hypothesized direction. The introduction of control variables particularly affects the coefficient on FVREL which is however still significant in the hypothesized direction (negative). A 1% increase in assets measured at fair value will result, on average, in a decrease of the probability to disclose the category of approximately 1.3%. Obviously, there are indeed some confounding effects on this particular setting that are caused by variables that have shown to be explanatory for disclosure choice in other non-industry specific settings. Those variables do however not seem to explain the disclosure behavior of banks. As can be seen from the FVREL coefficient in model II, there is almost no confounding effect of BANKREG on FVREL. We can thus use either model II or model III in the interpretation of our results on FVREL. In total, the results are strong evidence not to reject (H2a) and (H2b).

The findings are similar for tests of the effects on FVDSCL (summarized in table 7) suggesting

that the choices how to disclose the fair value category and whether to disclose the measurement categories at all are indeed related. In contrast to the univariate analysis, the probit regression yields significant coefficients for FVREL at a 5% level. The coefficient is negative so that we reject (H3a). The disclosure of the fair value category is obviously not driven by its materiality but by strategic considerations of the management that we explain in section 2 with behavioral theory. In addition, BANKREG and LNBV are control variables of their own significant explanatory power. We find the opposite result for the disclosure of financial derivatives (table 8). The coefficient for TRADREL, i.e. our proxy for the extent of a bank's derivatives usage, is significantly positive at a 5% level both in model I and when considering the control variables in model III. This finding suggests that this choice is not a strategic one but determined by materiality so that we cannot reject (H3b). The overall statistical significance of the model as well as its predictive power are however substantially lower than in the analysis of MEASDSCL and of FVDSCL.

5 Implications and Conclusions

We analyze the disclosure choice of banks in two ways. In a first part, we describe certain disclosure patterns across Europe that result in a non-uniform presentation of financial instruments in IFRS financial statements of banks. In a second part, we explain the observed disclosure choices with the use of fair value as a measurement base for financial assets and with regulatory action.

We are able to identify three different general formats in the presentation of financial instruments. The prevalent format across Europe is the use of the categories introduced by IAS 39 for measurement purposes as line items on the financial statement. The second format is a presentation by products. This is the approach once strongly advocated by the JWG of Standard Setters. Today, it is applied by less than 20% of European banks. Even less important from a practical point of view is the third format, i.e. a presentation of financial instruments by purpose. If we accept that the high degree of heterogeneity in the presentation of financial instruments across banks results in a lack of comparability and thereby negatively affects the decision-usefulness of IFRS financial statements, this finding calls for a more distinct interpretation of the presentation principles under

IFRS 7. This may be achieved by standard setting itself but it may also be achieved by action of European enforcement institutions.

One apparent factor influencing the disclosure choice is the regulatory environment of a bank. Some national regulating institutions explicitly recommend a presentation of financial instruments by measurement categories. There is significant evidence in our sample that such a regulatory action indeed strongly affects a bank's disclosure choice. As the CEBS guideline proposing this approach will be adopted by more and more national regulatory authorities, this tendency will be accelerated.

However, there is also evidence for discretionary action of banks, i.e. for self-serving disclosure management of banks. We argue with respect to prior behavioral findings that particularly the use of fair value as a measurement base causes a bias in investors' risk perception and we hypothesize that banks are aware of that bias and thus try to exploit it by corresponding reporting behavior. We find that the relative amount of assets that is measured at fair value through profit & loss is indeed, together with regulatory action, a significant explanatory factor in a bank's disclosure choice. The association is thereby negative, i.e. the higher the extent to which a bank has implemented a fair value measurement, the less likely it is to disclose the use of the category in its financial statement. This is empirical evidence supporting the results of experimental studies suggesting a negative perception of fair value measurement by investors.

Our evidence further suggests that there is no disclosure management in the reporting of financial derivatives which is rather driven by the materiality of a bank's derivatives usage. Since previous findings on the contribution of financial derivatives to a bank's risk exposure are ambiguous, bank management does obviously not fear negative market reaction to the disclosure of the involvement with derivatives. This seems to be a change in disclosure practice since there is some evidence from the 1990's documenting a reservation towards derivatives disclosure (Bodnar and Gebhardt (1999), Vietze (1997)). The discussion about the potential danger of financial derivatives has obviously somewhat been calmed since then. This might indicate that the biases in the public perception of fair value measurement will vanish just as well with time passing by.

We do not attempt to give an answer to the normative question concerning the social value of a certain degree of bank disclosure and the potentially negative effect of disclosure management on this value (see Anagnostopoulos and Buckland (2005), Baumann and Nier (2004), or Berlin (2004) on related questions). Neither did we discuss implications of the observed disclosure management for security pricing at capital markets (see Ahmed et al. (2006), Eccher et al. (1996), or Wang et al. (2005) on related questions). Both a limitation and a uniqueness of this study is that the application of IFRS 7 was still voluntary in 2006 so that we could observe some disclosure practices that are by now restricted. The effect of the mandatory implementation of IFRS 7 is a field for future research for which this study aims to provide a basis as it lines out the reporting behavior of banks in a transition phase.

References

- Anwer S. Ahmed, Emre Kilic, and Gerald J. Lobo. Does recognition versus disclosure matter? Evidence from value-relevance of banks' recognized and disclosed derivative financial instruments. *The Accounting Review*, 81(3):567–588, 2006.
- Yiannis Anagnostopoulos and Roger Buckland. Historical cost versus fair value accounting in banking: Implications for supervision, provisioning, financial reporting and market discipline. *Journal of Banking Regulation*, 6(2):109–127, 2005.
- Chris S. Armstrong, Mary E. Barth, Alan D. Jagolinzer, and Edward J. Riedl. Market reaction to the adoption of IFRS in europe. Wharton School, University of Pennsylvania, 2007.
- Stephen P. Baginski, John M. Hassell, and Michael D. Kimbrough. Why do managers explain their earnings forecast? *Journal of Accounting Research*, 42(1):1–29, 2004.
- Mary E. Barth. Fair value accounting: Evidence from investment securities and the market valuation of banks. *The Accounting Review*, 69(1):1–25, 1994.
- Basel Committee on Banking Supervision. *Public Disclosures by Banks: Results of the 2001 Disclosure Survey*. Bank for International Settlements, 2003.
- Ursel Baumann and Erlend Nier. Disclosure, volatility, and transparency: An empirical investigation into the value of bank disclosure. *FBRNY Economic Policy Review*, 10(2):31–45, 2004.
- Anne Beatty and Joseph Weber. Accounting discretion in fair value estimates: an examination of SFAS 142 Goodwill Impairments. *Journal of Accounting Research*, 44(2):257–288, 2006.
- George J. Benston and Shehzad L. Mian. Financial reporting of derivatives: An analysis of the issues, evaluation of proposals, and a suggested solution. *Journal of Financial Engineering*, 4(3):217–246, 1995.
- Mitchell Berlin. True confessions: Should banks be required to disclose more? *Business Review*, 15(4):7–15, 2004.

- Victor L. Bernard, Robert C. Merton, and Krishna G. Palepu. Mark-to-market accounting for banks and thrifts: Lessons from the Danish experience. *Journal of Accounting Research*, 3(1):1–32, 1995.
- Jannis Bischof and Michael Ebert. IAS 39 and biases in the risk perception of financial instruments. Working Paper, University of Mannheim, 2007.
- Robert Bloomfield and Robert Libby. Market reactions to differentially available information in the laboratory. *Journal of Accounting Research*, 34(2):183–207, 1996.
- Gordon M. Bodnar and Günther Gebhardt. Derivatives usage in risk management by US and German non-financial firms: A comparative survey. *Journal of International Financial Management and Accounting*, 10(3):153–187, 1999.
- David Cairns. Shall we go Deutsche? *Accountancy*, 118(1235):64–65, 1996.
- CEBS. *Guidelines for the Implementation of the Framework for Consolidated Financial Reporting*. Committee of European Banking Supervisors, 2007.
- Commission Bancaire de la Banque de France. Instruction no. 2006-04, Art. 3. www.banque-france.fr/fr/supervi/regle_bafi/textvig/instruc.htm, 2006.
- J. Richard Dietrich, Steven J. Kachelmeier, Don N. Kleinmuntz, and Thomas J. Linsmeier. Market efficiency, bounded rationality, and supplemental business reporting disclosures. *Journal of Accounting Research*, 39(2):243–268, 2001.
- Elizabeth A. Eccher, K. Ramesh, and S. Ramu Thiagarajan. Fair value disclosures by bank holding companies. *Journal of Accounting and Economics*, 22(1-3):79–117, 1996.
- Gerald A. Edwards and Gregory E. Eller. Overview of derivatives disclosure by major U.S. banks. *Federal Reserve Bulletin*, 81(9):817–831, 1995.
- Gerald A. Edwards and Gregory E. Eller. Derivatives disclosure by major U.S. banks. *Federal Reserve Bulletin*, 82(9):792–801, 1996.

- European Central Bank. The impact of fair value accounting on the European banking sector - a financial stability perspective. *Monthly Bulletin*, 2004(2):69–81, 2004.
- Thomas D. Fields, Thomas Z. Lys, and Linda Vincent. Empirical research on accounting choice. *Journal of Accounting and Economics*, 31(1-3):255–307, 2001.
- Valerie S. Folkes. The availability heuristic and perceived risk. *The Journal of Consumer Research*, 15(1):13–23, 1988.
- Accounting for financial instruments in the banking industry: Conclusions from a simulation model. Günther gebhardt and rolf reichardt and carsten wittenbrink. *European Accounting Review*, 13(2):341–371, 2004.
- Sylwia Gornik-Tomaszewski. New international standard for disclosures of financial instruments. *Bank Accounting and Finance*, 19(2):43–44, 2006.
- John R. Graham, Campbell R. Harvey, and Shiva Rajgopal. The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40(1-3):3–73, 2005.
- Jeffrey D. Gramlich, William J. Mayew, and Mary L. McAnally. Balance sheet management: The case of short-term obligations reclassified as long-term debt. *Journal of Accounting Research*, 39(2):283–295, 2001.
- Jeffrey D. Gramlich, William J. Mayew, and Mary Lea McAnally. Debt reclassification and capital market consequences. *Journal of Business Finance & Accounting*, 33(7-8):1189–1212, 2006.
- Wayne R. Guay. The impact of derivatives on firm risk: An empirical examination of new derivative users. *Journal of Accounting and Economics*, 26(1-3):319–351, 1999.
- Ian P. N. Hague. IAS 39: Underlying principles. *Accounting in Europe*, 1:21–26, 2004.
- David Hirshleifer. Investor psychology and asset pricing. *The Journal of Finance*, 56(4):1533–1597, 2001.

- D. Eric Hirst, Patrick E. Hopkins, and James M. Wahlen. Fair values, income measurement, and bank analysts' risk and valuation judgments. *The Accounting Review*, 79(2):453–472, 2004.
- Joint Working Group of Standard Setters. Financial instruments and similar items - draft standard and basis for conclusions, 1997.
- Joseph Kerstein and Atul Rai. Intra-year shifts in the earnings distribution and their implications for earnings management. *Journal of Accounting and Economics*, 44(3):399–419, 2007.
- Lisa Koonce, Marlys Gascho Lipe, and Mary Lea McAnally. Judging the risk of financial instruments: Problems and potential remedies. *The Accounting Review*, 80(3):871–895, 2005a.
- Lisa Koonce, Mary Lea McAnally, and Molly Mercer. How do investors judge the risk of financial items? *The Accounting Review*, 80(1):221–241, 2005b.
- Lisa Koonce, Marlys G. Lipe, and Mary L. McAnally. Investor reactions to derivative use: Experimental evidence. Working paper, 2006.
- Richard Lambert, Christian Leuz, and Robert E. Verrecchia. Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, 45(2):385–420, 2007.
- Christian Leuz. IAS versus U.S. GAAP: Information asymmetry-based evidence from Germany's new market. *Journal of Accounting Research*, 41(3):445–472, 2003.
- Irwin P. Levin, Richard D. Johnson, Craig P. Russo, and Patricia J. Deldin. Framing effects in judgement tasks with varying amounts of information. *Organizational Behaviour and Human Decision Processes*, 36:362–377, 1985.
- Philip M. Linsley and Philip J. Shrides. Transparency and the disclosure of risk information in the banking sector. *Journal of Financial Regulation and Compliance*, 13(3):205–214, 2005.
- Edgar Löw. Ausweisfragen in Bilanz und Gewinn- und Verlustrechnung bei Financial Instruments. *Kapitalmarktorientierte Rechnungslegung*, 6(Supplement 1):1–31, 2006.

- G.S. Maddala. A perspective on the use of limited-dependent and qualitative variables models in accounting research. *The Accounting Review*, 86(4):788–807, 1991.
- Mary L. McAnally. Banks, risk, and FAS105 disclosures. *Journal of Accounting, Auditing and Finance*, 11(3):453–490, 1996.
- Andrei Shleifer. *Inefficient markets*. Oxford University Press, Oxford, 2000.
- Amos Tversky and Daniel Kahneman. Judgement under uncertainty: Heuristics and biases. *Science*, 185:1124–1131, 1974.
- Amos Tversky and Daniel Kahneman. Rational choice and the framing of decisions. *Journal of Business*, 59(4):5251–5278, 1986.
- Mohan Venkatachalam. Value-relevance of banks' derivatives disclosures. *Journal of Accounting and Economics*, 22(1-3):327–355, 1996.
- Axel Vietze. *Survey on derivatives*. IASC, 1997.
- Peter Walton. IAS 39: Where different accounting models collide. *Accounting in Europe*, 1:5–16, 2004.
- Li Wang, Pervaiz Alam, and Stephen Makar. The value-relevance of derivative disclosures by commercial banks: A comprehensive study of information content under SFAS Nos. 119 and 133. *Review of Quantitative Finance and Accounting*, 25(4):413–427, 2005.
- Charles E. Wasley and Joanna Shuang Wu. Why do managers voluntarily issue cash flow forecast? *Journal of Accounting Research*, 44(2):389–429, 2006.
- Ross L. Watts and Jerold L. Zimmerman. *Positive Accounting Theory*. Prentice-Hall, 1986.
- Jens Wüstemann and Sonja Kierzek. Filling gaps: Why consistency of accounting standards matters - Normative evidence from the U.S. and Germany as related to IFRS. Working Paper, University of Mannheim, 2007.

Appendix

TABLE 1:

Descriptive Statistics: Size and Line Items of European Banks

Country	N	Size (Total assets, m. EUR)					# Line Items Analyzed		
		Mean	Std.Dev.	Median	Min	Max	Sum	Min	Max
Total	109	226,062	393,132	27,040	77	1,491,388	548	2	8
Austria	3	116,046	65,449	115,629	50,806	181,703	17	5	7
Belgium	3	536,463	226,190	508,761	325,400	775,229	17	4	7
Croatia	2	940	840	940	346	1,534	8	4	4
Cyprus	4	12,132	13,618	11,496	348	25,187	21	4	7
Czech Rep.	3	18,340	15,217	26,501	783	27,735	17	4	8
Denmark	3	134,436	201,788	21,547	14,357	367,404	19	5	7
Estonia	3	129	90	78	77	233	8	2	3
Finland	5	16,274	19,866	6,667	698	47,260	21	3	5
France	6	806,197	534,244	748,276	214,313	1,440,343	32	5	6
Germany	3	615,484	434,214	608,339	184,887	1,053,226	13	4	5
Greece	6	18,411	19,416	12,177	2,512	49,800	30	4	6
Hungary	3	12,753	13,680	7,933	2,136	28,190	16	4	6
Iceland	4	22,983	17,420	23,726	933	43,546	21	4	6
Ireland	4	124,191	58,467	117,331	73,290	188,813	22	4	7
Italy	6	268,525	351,998	78,967	7,474	823,284	35	4	7
Latvia	2	2,431	1,568	2,431	1,322	3,540	10	5	5
Lithuania	3	485	408	402	125	927	16	5	6
Malta	2	3,008	3,408	3,008	599	5,418	7	3	4
Netherlands	3	932,287	339,455	987,100	556,455	1,226,307	15	3	7
Norway	4	49,583	74,481	16,460	5,150	160,262	21	4	7
Poland	4	12,885	8,852	9,620	6,445	25,855	20	4	6
Portugal	6	49,245	35,032	47,797	9,151	96,245	31	4	6
Slovakia	4	3,753	3,241	3,678	656	6,998	21	5	6
Slovenia	5	4,839	5,508	2,897	666	14,409	25	4	6
Spain	7	241,314	293,686	91,650	23,782	833,872	34	4	5
Sweden	4	227,132	84,391	205,989	149,660	346,890	19	4	5
Switzerland	2	754,608	1,041,964	754,608	17,828	1,491,388	11	5	6
UK	5	1,117,377	411,613	1,297,739	511,687	1,484,419	21	3	5

TABLE 2:

Primary Presentation Format of IFRS Financial Statements of European Banks (by Country)

Country	Primary Presentation Format			
	Measurement	Product	Purpose	Other
Total	56	17	13	23
Austria	1		2	
Belgium	2	1		
Croatia	2			
Cyprus	2	1		1
Czech Rep.	2			1
Denmark		2	1	
Estonia		1		2
Finland	1	2		2
France	6			
Germany			2	1
Greece	3		2	1
Hungary	1			2
Iceland	2	1		1
Ireland	2	1		1
Italy	6			
Latvia	1	1		
Lithuania	3			
Malta		1		1
Netherlands	2		1	
Norway	1	2	1	
Poland			1	3
Portugal	5			1
Slovakia	3			1
Slovenia	3		1	1
Spain	6			1
Sweden	1	3		
Switzerland			1	1
UK	1	1	1	2

TABLE 3:

Presentation of Individual Measurement Categories

Panel A. Fair Value Category

Separate Disclosure of ...	Absolute Amount of Assets Measured at FV	
	Separate Disclosure	No Separate Disclosure
N	67	42
Trading Assets	37 (55.22%)	19 (45.24%)
Use of FV Option	34 (50.75%)	-
Trading Assets and FV Option	29 (42.28%)	-
Derivatives	33 (49.25%)	24 (57.14%)

Panel B. Loans & Receivables

Separate Disclosure of L&R from ...	Absolute Amount of Loans & Receivables	
	Separate Disclosure	No Separate Disclosure
N	72	37
Customers	51 (70.83%)	19 (51.35%)
Credit Institutions	53 (73.61%)	28 (75.68%)
Public Institutions	2 (2.78%)	5 (13.5%)

TABLE 4:

Analysis of Disclosure Choice: Descriptive statistics^a

Variable	Mean	SD	Median	Minimum	Maximum
MEASDSCL	.5504	.4997	1	0	1
FVDSCL	.2661	.4439	0	0	1
DERDSCL	.5229	.5018	1	0	1
FVREL	.1465	.1442	.11	0	.71
TRADREL	.0641	.0895	.04	0	.59
BANKREG	.2294	.4224	0	0	1
LISTING	.6972	.4616	1	0	1
EQUITY	.0682	.0436	.06	.02	.36
RETURN	.1453	.0881	.15	-.29	.43
LNBV	10.2300	2.5719	10.21	4.34	14.22
LNFV	7.9138	3.3780	8.04	-.66	13.52
BOARD	16.0490	11.4307	13	1	51

^a Definition of the variables:

MEASDSCL 1 if bank discloses measurement categories separately; 0 otherwise

FVDSCL 1 if bank partitions fair value category on the financial statement; 0 otherwise

DERDSCL 1 if bank partitions financial derivatives on the financial statement; 0 otherwise

FVREL ratio of assets measured at FV through P/L to total assets (book value)

TRADREL ratio of assets held for trading to total assets (book value)

BANKREG 1 if national bank regulation recommends disclosure of measurement categories; 0 otherwise

LISTING 1 if at least one class of equity instruments of the bank is publicly traded; 0 otherwise

EQUITY ratio of total equity to total assets (book value)

RETURN ratio of total profit to total equity (book value)

LNBV (natural) log of total assets (book value)

BOARD number of board managers

TABLE 5:

Univariate Analysis of Disclosure Choice

Panel A. Disclosure of Measurement Categories			
	MEASDSCL=0 ^a	MEASDSCL=1 ^b	Test Statistic ^c
N	47	60	
FVREL	.1815 (.0242)	.1191 (.0154)	<i>t</i> ₀ = 2.2649 (.026)
BANKREG	.0204 (.0202)	.4000 (.0632)	<i>z</i> ₀ = 4.6892 ^d (< .01)
Panel B. Disclosure of Fair Value Category			
	FVDSCL=0 ^a	FVDSCL=1 ^b	Test Statistic ^c
N	78	29	
FVREL	.1563 (.0181)	.1201 (.0164)	<i>t</i> ₀ = 1.1551 (.2507)
BANKREG	.1500 (.0399)	.4483 (.0923)	<i>z</i> ₀ = 3.2731 ^d (< .01)
Panel C. Disclosure of Derivatives			
	DERDSCL=0 ^a	DERDSCL=1 ^b	Test Statistic ^c
N	51	57	
TRADREL	.0459 (.0086)	.0804 (.0141)	<i>t</i> ₀ = 2.0247 (.045)

^a Sample mean with standard error in parentheses.

^b Sample mean with standard error in parentheses.

^c Two-sided p-value in parentheses.

^d Fisher's exact test also gives p-values < .01.

TABLE 6:

Models of Disclosure Choice (1): Coefficients and Average Derivatives (Probit)

Dependent variable	MEASDSCL					
	I		II		III	
Model						
Independent variable	(#)	(+)	(#)	(+)	(#)	(+)
N	107		100		100	
CONST	.1794 (.2201)		.3722 (.8074)		.9768 (.7581)	
<i>Test Variables</i>						
FVREL	-2.4297 (.9670)	- .9324	-3.5598 (1.388)	-1.4046	-3.5255 (1.3714)	-1.3578
BANKREG*	1.9485 (.5306)	.5319	-	-	2.0287 (.5832)	.5459
<i>Control Variables</i>						
LISTING*	-	-	-.2389 (.2781)	-.0932	-.2496 (.3149)	-.0944
EQUITY	-	-	-.0284 (.0283)	-.0112	-.0395 (.0246)	.0015
RETURN	-	-	-1.1900 (1.3728)	-.4695	-.2326 (1.2782)	-.0896
LNBV	-	-	.0794 (.0892)	.0313	.0060 (.0881)	.0023
BOARD	-	-	.0007 (.0145)	.0003	-.0155 (.0136)	.0060
ln L	-57.35		-62.68		-51.53	
% correctly predicted	71.96		65.00		72.00	
χ^2 (p-value)	16.13 (< .001)		15.59 (.016)		23.85 (.001)	

(#) The coefficient is reported with the robust standard error in parentheses (clusters by country).

(+) dy/dx is evaluated at the mean of the independent variables.

For binary variables marked with an asterisk (*), dy/dx is equal to the difference in the probability of MEASDSCL for a discrete change in the value from 0 to 1.

TABLE 7:

Models of Disclosure Choice (2): Coefficients and Average Derivatives (Probit)

Dependent variable	FVDSCL					
Model	I		II		III	
Independent variable	(#)	(+)	(#)	(+)	(#)	(+)
N	107		100		100	
CONST	-.6771 (.2501)		-2.7023 (1.0066)		-2.6708 (1.0624)	
<i>Test Variable</i>						
FVREL	-1.3390 (1.1942)	-.4305	-4.1076 (2.0113)	-1.3087	-3.9545 (1.7761)	-1.2117
<i>Control Variables</i>						
BANKREG*	.9267 (.3985)	.3300	-	-	.9790 (.4373)	.3403
LISTING*	-	-	-.3319 (.3965)	-.1104	-.3054 (.4361)	-.0978
EQUITY	-	-	-.0043 (.0302)	-.0014	-.0059 (.0304)	-.0018
RETURN	-	-	2.4213 (2.0708)	.7714	3.6775 (2.2136)	1.1268
LN BV	-	-	.2638 (.1135)	.0840	.2270 (.1048)	.0696
BOARD	-	-	-.0104 (.0155)	-.0033	-.0196 (.0122)	-.0060
ln L	-56.94		-52.80		-48.83	
% correctly predicted	75.70		75.00		73.00	
χ^2 (p-value)	9.91 (.007)		14.75 (.022)		29.28 (< .001)	

(#) The coefficient is reported with the robust standard error in parentheses (clusters by country).

(+) dy/dx is evaluated at the mean of the independent variables.

For binary variables marked with an asterisk (*), dy/dx is equal to the difference in the probability of FVDSCL=1 for a discrete change in the value from 0 to 1.

TABLE 8:

Models of Disclosure Choice (3): Coefficients and Average Derivatives (Probit)

Dependent variable	DERDSCL			
Model	I		III	
Independent variable	(#)	(+)	(#)	(+)
N	108		102	
CONST	-.1325 (.1534)		.2761 (.8980)	
<i>Test Variable</i>				
TRADREL	3.3392 (1.6334)	1.3277	5.5166 (2.4505)	2.1936
<i>Control Variables</i>				
LISTING*	-	-	.4063 (.3236)	.1610
EQUITY	-	-	-.0221 (.0379)	-.0088
RETURN	-	-	1.2164 (1.3962)	.4837
LNBV	-	-	-.1348 (.0838)	-.0536
BOARD	-	-	.0336 (.0130)	.0134
ln L	-72.41		-64.49	
% correctly predicted	60.19		58.82	
χ^2 (p-value)	4.19 (.041)		11.77 (.067)	

(#) The coefficient is reported with the robust standard error in parentheses (clusters by country).

(+) dy/dx is evaluated at the mean of the independent variables.

For binary variables marked with an asterisk (*), dy/dx is equal to the difference in the probability of DERDSCL=1 for a discrete change in the value from 0 to 1.

SONDERFORSCHUNGSBereich 504 WORKING PAPER SERIES

Nr.	Author	Title
08-02	Siegfried K. Berninghaus Karl-Martin Ehrhart Marion Ott	Myopically Forward-Looking Agents in a Network Formation Game: Theory and Experimental Evidence
08-01	Sascha Huber Thomas Gschwend Michael F. Meffert Franz Urban Pappi	Erwartungsbildung über den Wahlausgang und ihr Einfluss auf die Wahlentscheidung
07-76	Michael Bremert Dennis Voeller Nicole Zein	Interdependencies between Elements of Governance and Auditing: Evidence from Germany
07-75	Jannis Bischof Jens Wüstemann	How Does Fair Value Measurement under IAS 39 Affect Disclosure Choices of European Banks?
07-74	Markus Glaser Philipp Schäfers Martin Weber	Managerial Optimism and Corporate Investment: Is the CEO Alone Responsible for the Relation?
07-73	Jannis Bischof Michael Ebert	IAS 39 and Biases in the Risk Perception of Financial Instruments
07-72	Susanne Abele Garold Stasser	Continuous and Step-level Pay-off Functions in Public Good Games: A Conceptual Analysis
07-71	Julian Rode Marc Le Menestrel	The role of power for distributive fairness
07-70	Markus Glaser Martin Weber	Why inexperienced investors do not learn: They do not know their past portfolio performance
07-69	Jose Apestegua Steffen Huck Jörg Oechssler Simon Weidenholzer	Imitation and the Evolution of Walrasian Behavior: Theoretically Fragile but Behaviorally Robust
07-68	Damian S. Damianov Jörg Oechssler Johannes Gerd Becker	Uniform vs. Discriminatory Auctions with Variable Supply - Experimental Evidence

SONDERFORSCHUNGSBereich 504 WORKING PAPER SERIES

Nr.	Author	Title
07-67	Dirk Simons Barbara E. Weißenberger	Die Konvergenz von externem und internem Rechnungswesen – Kritische Faktoren für die Entwicklung einer partiell integrierten Rechnungslegung aus theoretischer Sicht
07-66	Alexander Ludwig Alexander Zimmer	Attitude polarization
07-65	Alexander Ludwig Alexander Zimmer	A Parsimonious Model of Subjective Life Expectancy
07-64	Michael F. Meffert Thomas Gschwend	Voting for Coalitions? The Role of Coalition Preferences and Expectations in Voting Behavior
07-63	Michael F. Meffert Thomas Gschwend	Polls, Coalition Signals, and Strategic Voting: An Experimental Investigation of Perceptions and Effects
07-62	Peter Dürsch Maros Servátka	Risky Punishment and Reward in the Prisoner
07-61	Wendelin Schnedler Radovan Vadovic	Legitimacy of Control
07-60	Volker Stocké	Strength, Sources, and Temporal Development of Primary Effects of Families' Social Status on Secondary School Choice
07-59	Christopher Koch Martin Weber Jens Wüstemann	Can Auditors Be Independent? - Experimental Evidence
07-58	Sylvain Béal	PERCEPTRON VERSUS AUTOMATON
07-57	Sylvain Béal Jacques Durieu Philippe Solal	Farsighted Coalitional Stability in TU-games
07-56	Alen Nusic Martin Weber	Determinants of Risk Taking Behavior: The role of Risk Attitudes, Risk Perceptions and Beliefs

SONDERFORSCHUNGSBereich 504 WORKING PAPER SERIES

Nr.	Author	Title
07-55	Michael F. Meffert Thomas Gschwend	Strategic Voting under Proportional Representation and Coalition Governments: A Simulation and Laboratory Experiment
07-54	Klaus Fiedler	Pseudocontingencies - A key paradigm for understanding adaptive cognition
07-53	Florian Kutzner Peter Freytag Tobias Vogel Klaus Fiedler	Base-rate neglect based on base-rates in experience-based contingency learning
07-52	Klaus Fiedler Yaakov Kareev	Implications and Ramifications of a Sample-Size Approach to Intuition
07-51	Klaus Fiedler	The Ultimate Sampling Dilemma in Experience-Based Decision Making
07-50	Jürgen Eichberger David Kelsey	Ambiguity
07-49	Tri Vi Dang	Information Acquisition in Double Auctions
07-48	Clemens Kroneberg	Wertrationalität und das Modell der Frame-Selektion
07-47	Dirk Simons Nicole Zein	Audit market segmentation and audit quality
07-46	Sina Borgsen Martin Weber	False Consensus and the Role of Ambiguity in Predictions of Others' Risky Preferences
07-45	Martin Weber Frank Welfens	An Individual Level Analysis of the Disposition Effect: Empirical and Experimental Evidence
07-44	Martin Weber Frank Welfens	The Repurchase Behavior of Individual Investors: An Experimental Investigation
07-43	Manel Baucells Martin Weber Frank Welfens	Reference Point Formation Over Time: A Weighting Function Approach

SONDERFORSCHUNGSBereich 504 WORKING PAPER SERIES

Nr.	Author	Title
07-42	Martin Weber Frank Welfens	How do Markets React to Fundamental Shocks? An Experimental Analysis on Underreaction and Momentum
07-41	Ernst Maug Ingolf Dittmann	Lower Salaries and No Options: The Optimal Structure of Executive Pay
07-40	Ernst Maug Ingolf Dittmann Christoph Schneider	Bankers and the Performance of German Firms
07-39	Michael Ebert Nicole Zein	Wertorientierte Vergütung des Aufsichtsrats - Auswirkungen auf den Unternehmenswert
07-38	Ingolf Dittmann Ernst Maug Christoph Schneider	How Preussag became TUI: Kissing too Many Toads Can Make You a Toad
07-37	Ingolf Dittmann Ernst Maug	Valuation Biases, Error Measures, and the Conglomerate Discount
07-36	Ingolf Dittmann Ernst Maug Oliver Spalt	Executive Stock Options when Managers are Loss-Averse
07-35	Ernst Maug Kristian Rydqvist	Do Shareholders Vote Strategically? Voting Behavior, Proposal Screening, and Majority Rules
07-34	Ernst Maug Abraham Ackerman	Insider Trading Legislation and Acquisition Announcements: Do Laws Matter?
07-33	Dirk Simons	Independence, low balling and learning effects
07-32	Rainer Greifeneder Herbert Bless	Relying on accessible content versus accessibility experiences: The case of processing capacity
07-31	Rainer Greifeneder Herbert Bless	Depression and reliance on ease-of-retrieval experiences
07-30	Florian Heiss Axel Börsch-Supan Michael Hurd David Wise	Pathways to Disability: Predicting Health Trajectories