



SONDERFORSCHUNGSBEREICH 504

Rationalitätskonzepte,
Entscheidungsverhalten und
ökonomische Modellierung

No. 07-02

**Inconsistent measurement and disclosure of
non-contingent financial derivatives under IFRS:
A behavioral perspective**

Jannis Bischof*
and Michael Ebert**

April 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

**Universität Mannheim, email: ebertm@bwl.uni-mannheim.de



Universität Mannheim
L 13,15
68131 Mannheim

Inconsistent measurement and disclosure
of non-contingent financial derivatives under IFRS:
A behavioral perspective ¹

Jannis Bischof, Harvard University / University of Mannheim ²

Michael Ebert, University of Mannheim ³

This version: September 2007

First version: October 2006

¹ The authors wish to thank seminar participants at the EAA Annual Congress 2007, at the ESSEC Business School (Paris) and at the University of Mannheim for helpful comments on earlier versions of this paper. Financial support from the Deutsche Forschungsgemeinschaft, SFB 504 at the University of Mannheim, is gratefully acknowledged.

² jannis.bischof@bwl.uni-mannheim.de

³ ebertm@bwl.uni-mannheim.de

Abstract

The accounting principle of decomposing hybrid financial instruments into their derivative and non-derivative components is widely accepted as it results in a consistent treatment of hybrid instruments and economically equivalent combinations of contracts. Non-contingent derivatives and their economic equivalents, on the other hand, are not treated accordingly under the mixed accounting model underlying IAS 39. The conventional criticism regarding unequal treatment of economic equivalents refers to the creation of opportunities for earnings management. The aim of this paper is to add another perspective by also discussing the effects of the related disclosure rules on risk perception by capital market participants. For this purpose we consider both the presentation on the balance sheet and the additional disclosure in the notes according to IFRS 7. From extant literature, we diligently develop the hypothesis that, due to availability effects, entities using non-contingent derivatives are perceived to be riskier than entities using economic equivalents, although in fact the latter are riskier due to their exposure to additional counterparty risk. This bias in the perception of disclosures might thereby alter an entity's costs of capital in a way not intended by IAS 39. In particular, we expect individuals to value entities using non-contingent derivatives lower than identical entities using economically equivalent contracts instead. We expect this difference in valuation to result from a higher cognitive availability of negative associations with derivatives than with non-derivatives. The underlying assumptions are outlined as they build a framework of hypotheses that could be tested in future research, particularly in experimental studies.

1 Introduction

According to the IFRS Conceptual Framework, the fundamental objective of reporting under IFRS is to provide economic agents with information to support their ability to make economic decisions. Consistency therefore should be the reference when assessing accounting rules under IFRS (see Wüstemann and Kierzek, 2007). Consistency means that like economic situations are shown in the same manner: The economic characteristics of an accounting issue are of greater importance than the purely legal or contractual form (Moxter, 2003, p. 335). A good example for consistent accounting rules is provided by the accounting for embedded derivatives under IAS 39. The decomposition of a hybrid financial instrument consisting of an embedded contingent derivative and a non-derivative instrument into its individual components is mandatory. As a result, a certain hybrid instrument and an exact replication of its economic structure by separate individual contracts are measured and disclosed following the same principles (see Ernst & Young, 2006, p. 1085, and IAS 39.BC37). While it is also possible to replicate non-contingent derivatives, such as swap agreements or forwards, by means of non-derivative financial instruments, the accounting rules for those cases are less consistent. Non-contingent derivatives, according to IAS 39.9, have to be accounted for at fair value through profit and loss, whereas their replications by non-derivatives can be measured at cost, at fair value through profit and loss or at fair value through equity. This inconsistency is generally described as mixed accounting model and prominently assessed in the international literature (see Bradbury, 2003; Bromwich, 2004; Gebhardt et al., 2004; Walton, 2004).

The persistence of the mixed accounting model in accounting for financial instruments has historical and political reasons. A fair value approach cannot be derived as such from the extant IFRS Conceptual Framework. Neither is fair value defined as a measurement base nor is the market valuation of an entity's individual components defined as an accounting objective. Nevertheless, the IASC has proposed a full fair value measurement of financial instruments already in the early 1990s¹. The draft standard on accounting for financial

¹ A full fair value option was proposed in the Exposure Drafts E40 and E48 both dealing with accounting for financial instruments, see Cairns, 2006, p. 15. A mandatory full fair value approach was proposed in the Discussion Paper "Accounting for Financial Assets and Financial Liabilities" issued by the IASC in March 1997.

instruments announced by the Joint Working Group of Standard Setters (JWG) in 2000 adopted this proposal. This agreement was particularly justified by the criterion of relevance (Joint Working Group of Standard Setters, 2000, BC1.8) which is one of financial statements' qualitative characteristics as defined by, e.g., the IFRS Conceptual Framework (para. 26). However, the only theoretical concept of relevance the JWG refers to is the concept of value relevance (Joint Working Group of Standard Setters, 2000, BC1.12). A measurement base is of higher value relevance than another one if the resulting accounting figure is more highly associated with an entity's stock price or its equity market value (Barth et al., 2001, p. 79, Holthausen and Watts, 2001, p. 5). Beginning with Barth (1994), this association was empirically tested for fair values and amortized costs of almost all kinds of financial instruments. The studies suggest a higher value relevance of fair value measurement for all instruments except for certain off-balance sheet transactions such as loan commitments, the market price of which can be hardly estimated. A thorough review of those studies is presented by Linsmeier et al. (1998). The result cannot be surprising since an entity's market price will naturally reflect changes in market prices of securities held by the entity, all other factors held constant and given efficient capital markets on which both the entity's equity shares and the securities held by it are traded. Unlike for intangible assets (see Cazavan-Jeny and Jeanjean, 2006), the latter precondition will be at least partly fulfilled for many financial instruments.

The standard setters' reference to these results implies a dominant accounting objective of equity valuation (see Holthausen and Watts, 2001, p. 22 et seq.) which is (for good reasons) not stated as such either by the JWG or by the IASB. The existence of alternative accounting objectives has driven dissent with the full fair value approach. The dissent was mainly due to two economic consequences of the approach that were neglected by the standard setters. First, banking institutions feared high implementation costs as the internal measurement of financial instruments not held for trading was regularly not based on fair value estimations and fair values were thus not readily available in the absence of quotations on active markets (Joint Working Group of Standard Setters, 2000, BC1.10, see also Gebhardt et al., 2004, p. 365). Second, regulating institutions feared an increase in earnings volatility resulting in an instability of capital markets (ECB, 2004, p. 69,

see also Walton, 2004, p. 6). The dissent suggests that equity valuation is, if at all, only one among other accounting objectives a standard setter needs to focus on. It is therefore questionable whether the theoretical basis the JWG's draft standard refers to is sufficiently broad. In the political process following the proposals of the JWG and the preliminary introduction of a fair value option into IAS 39 in 2003, the full fair value approach was indeed restricted. Instead, the extant IAS 39 can be described as a mixed accounting model simultaneously based on amortized cost and fair value measurement. From a normative perspective, the standard can neither be classified as a consistent asset and liability approach nor as a consistent revenue and expense approach.

The measurement of non-contingent derivatives makes up only one inconsistency. In accordance with the accounting policy chosen, the non-contingent derivative and its replication are further disclosed under different labels, i.e. prescribed categories, on the balance sheet and in the notes. This inconsistent treatment might contradict the call for decision usefulness of accounting information as proclaimed by the IFRS framework. To support this notion, we will establish two lines of argumentation. First, we outline what we call the conventional argument, namely that discretion in the choice of accounting method provides management with leeway for opportunistic earnings management. We call it conventional because extant literature proposing accounting principles for financial derivatives regularly refers to management's possibilities to mislead investors (see for example Benston and Mian, 1995, p. 239, Woods and Marginson, 2004, p. 388). Second, we develop the behavioral argument, i.e. that the different disclosure, resulting from the choice of accounting method, might induce a biased risk perception of individual investors. This perspective as such is not a new one. It has been taken in an early discussion of the impact of accounting information on individual perceptions by Hopwood, 1974, p. 151 et seq., in a general discussion of biases in risk perceptions of investors by Hodder et al. (2001) and it is confirmed by evidence from experimental studies on how investors perceive the risk of financial instruments depending on the way those instruments are presented (see Koonce et al., 2005a,b, 2006; Weber et al., 2005). New to our approach is the diligent application of this evidence on existing accounting rules, in particular on the specific disclosure categories for financial instruments prescribed by the IFRS. Our

findings have implications for both standard setting and future research. On the one hand, we suggest how the mixed accounting model under the extant IAS 39 and IFRS 7 evokes biases in investors' and analysts' risk perception. This provides clues for a revision of the accounting standards for financial instruments. On the other hand, we clearly outline the assumptions our suggestion is based on. Therefrom, we derive a framework of hypotheses that could be used as the basis for future research.

The remainder is organized as follows. In Section 2, we show how non-contingent financial derivatives are measured and disclosed under the mixed accounting model. This allows us to explicitly outline our research questions. In Sections 3 and 4, we discuss those questions first from the conventional and then from the behavioral perspective. Section 5 gives a summary.

2 The inconsistency in accounting for non-contingent derivatives: Research questions

A swap agreement as an example of a non-contingent derivative

The IAS 39 accounting rules hold for all financial derivatives regardless of their economic characteristics. In general financial derivatives can be characterized as contingent or non-contingent, depending on whether future cash flows are contingent on the exercise of an optional right by one contractual party. Connoting examples for non-contingent financial derivatives are interest rate swap agreements or forward contracts to purchase some financial asset such as an equity share. By means of an interest rate swap agreement, an entity seeks to achieve an exchange of payments if it has the intention to transfer a fixed interest payment (either to be received or payable) into a variable one. Under the conditions of a swap agreement one party has the periodical obligation to pay a fixed amount, tantamount to a fixed rate on a notional nominal value, and the right to receive in return a payment that varies with a market interest rate on the identical notional value. The nominal amounts are notional in nature because they are, for reasons of simplification, neither exchanged at contract inception nor at maturity. There will only be an upfront payment at contract inception if the present value of the variable cash flows does not exactly outweigh the

present value of the fixed cash flows.

When analyzing the cash flow structure of a swap agreement, an interest rate swap can be viewed as a compound instrument of two separate contracts of the same maturity. The net cash flows of this swap agreement can be replicated by entering into one contract of the same characteristics as a classic fixed-rate debt instrument with a fixed interest payment that is equal to the fixed leg of the swap agreement and into another contract of the same characteristics as a classic variable-rate debt instrument. The net cash flows are exactly alike to those of an interest rate swap if the entity is borrower in the one contract and creditor in the other contract. Both contracts are non-derivative in nature. The economic characteristics of the swap agreement and its separate non-derivative components only differ in the counterparty risk. The counterparty risk arising from an interest rate swap is lower than the risk from a receivable under a debt contract. The difference in counterparty risk is due to the structure of the swap market where brokers guarantee payments (Hull, 2006, p. 153) and to the fact that nominal amounts are not exchanged between the two parties of the swap agreement. A separate debt contract, on the other hand, is regularly not institutionalized and in addition, a risk of a default on the repayment of a contract's nominal amount exists. Minton (1997) shows that this difference is not negligible.

Accounting for the swap agreement under IAS 39's mixed accounting model

Both a non-contingent derivative contract and a non-derivative contract are within the scope of IAS 39 (as regards recognition and measurement) and of IFRS 7 (as regards disclosure) if they qualify as financial instruments, i.e. if the terms of contract are in accordance with IAS 32.11. A non-contingent derivative meets these specific criteria if it results in the exchange of financial assets and so does a debt contract that consists of a right to receive financial assets, on the one hand, and of an obligation to deliver those assets, on the other hand². A non-contingent derivative further meets the (legal) definition criteria of derivatives according to IAS 39.9. The definition as a derivative irrefutably results in a

² A commodity forward can be replicated by a credit-financed commodity purchase. But as a commodity is not a financial instrument, a commodity forward is an example of a non-contingent derivative non-replicable by financial instruments according to IAS 39.

classification as held for trading with accounting consequences being definite. The instrument has to be measured at fair value through profit or loss (IAS 39.46 and 39.55 (a)) and the classification as held for trading is to be separately disclosed either on the face of the balance sheet or in the notes (see IFRS 7.8)³. This balance sheet presentation according to measurement categories is an explicit delineation from the JWG proposal to present financial instruments according to their type. Under the latter approach, a swap agreement would be presented as such on the balance sheet (Joint Working Group of Standard Setters, 2000, para. 135)⁴.

In the case that cash flows of a non-contingent derivative are replicated by two or more individual contracts, accounting for those equivalent contracts is only identical to any derivative if all contracts have the same counterparty with whom a netting agreement holds (IAS 39.IG B.6). In all other cases and in spite of the cash flow equivalency, accounting is different from derivatives. A classification as held for trading is not mandatory unless there is evidence of recent actual trading. Measurement at fair value (through profit or loss) is thus only one possible accounting choice that can be applied when an entity finds some accounting mismatch that can be reduced by fair value measurement. Non-objectifiable proof of such an accounting mismatch that any entity will easily find is the only prerequisite for the use of this fair value option (Wüstemann and Bischof (2007)). If an entity does not opt for fair value measurement affecting the income, there are two more accounting choices. First, any financial contract that is an asset can be classified as available for sale and thus be measured at fair value with gains and losses not recognized in profit or loss but directly in equity (see IAS 39.46 and 39.55 (b)). The classification as available for sale is also to be disclosed separately (see IFRS 7.8 (d)). Second, a contract that is not an equity instrument can be classified as loans and receivables if it is an asset not quoted in an active market, as held to maturity if it is an asset with fixed

³ The accounting practice of European banks is in fact very diverse. Some banks, such as the French BNP Paribas or Crédit Agricole, do not split up the category of financial assets at fair value through profit or loss on the face of the balance sheet but in the notes. Other banks, such as the Swiss Julius Baer or the Dutch Rabobank present their non-derivative trading assets and their derivatives in separate line items on the face of the balance sheet.

⁴ The JWG approach is still applied by some European banks such as the Danish Danske Bank or the Swedish Nordea.

maturity and quoted in an active market, or as other liability, and it can in each case be measured at amortized cost using the effective interest method. Accounting for the replicative contracts, therefore, varies with the type of non-contingent derivative. Offsetting debt contracts replicating an interest rate swap, for example, can be either measured at amortized cost (if the contractual rights are classified as held to maturity or loans and receivables, respectively if the contractual obligations are classified as other liabilities⁵.) or at fair value, if the fair value option is used. In addition, the contractual right could also be measured at fair value directly through equity if it was classified as available for sale.

The choice of a measurement base has further implications on the structure of disclosures in the notes. Mandatory disclosure of fair values and credit risk for example needs to be structured by classes of financial instruments (see IFRS 7.26 and 7.36). In turn, the minimum requirement for how these classes shall be distinguished is the measurement base (see IFRS 7.B2). Thus, additional information on financial instruments is, in general, combined with labeling the instrument as part of a class of instruments measured at fair value or as part of a class of instruments measured at amortized cost. The waiver of a mandatory fair value measurement for debt contracts is, in particular, due to the political decision against a full fair value approach when a revised IAS 39 was announced in 2003 (Walton (2004)). Agreement was only on the principle that unexceptionally all derivatives should be measured at fair value for the related risks being completely shown on the face of the balance sheet (see IAS 39.BC177 (a)) because derivatives were regarded as one of the most important factors causing recent bankruptcies. The critical point, therefore, is the legal definition of a derivative that refers to the initial net investment (see Hague, 2004, p. 24). A low initial net investment, that is common to financial derivatives, indeed allows entities the use of derivatives in purely speculative investments by exploiting a leverage effect. On the other hand, as it was demonstrated above, the same motivation may underlie the investment in separate individual contracts which trigger an identical future cash flow scheme, but only require a low net investment in their economic combination and not when acquired individually. Except for the very restrictive conditions of IAS 39.IG

⁵ A floating interest rate loan does explicitly not contain an embedded derivative that has to be accounted for separately under IAS 39 (see IAS 39.AG33(a)).

B.6, entities are not obliged to account for those economic units in the same way as for derivatives.

For the ease of discussion, imagine two entities. Both entities have long-term financial assets of CU 300 and long-term financial liabilities of CU 400 which are both at fixed interest rates and which they intend to hold until maturity. The difference of CU 100 be invested in some short-term financial instrument at the money market. In order to cover the risk of decreasing interest rates on the money market, Entity A has at $t=0$ entered into a fixed-for-variable interest rate swap whereby it agrees to pay the variable interest rate and receive a fixed rate on the nominal amount of CU 100. Entity B does not face this risk because it has acquired an additional long-term fixed interest rate financial asset and issued a variable interest rate liability both at CU 100. We call this combination henceforth a swap-equivalent. The balance sheets of both entities at $t=0$ are shown in figure 1. They differ only because, at a market price of CU 0, the swap is an off-balance-sheet item whereas the fixed-rate asset and the variable-rate liability are not.

Figure 1: Balance sheets of Entity A and Entity B as of $t = 0$

Assets	Entity A		Liabilities
Current financial assets	100	Non-current liabilities	400
Held-to-maturity financial assets	300		
	400		400

Assets	Entity B		Liabilities
Current financial assets	100	Non-current liabilities	500
Other long-term financial assets	100		
Held-to-maturity financial assets	300		
	500		500

The differences in the accounting results of Entity A and Entity B that are due to the mixed accounting model will appear at $t=1$ when the interest rate changes and the swap now has a market value that is not zero. If we assume a positive market value of CU 10, entity A reports a profit of CU 10 given that hedge accounting rules are not applied. But the balance sheets as of $t=1$ which are shown in figure 2 do not only differ in the profit figure but also in the line items presented. Entity A now has to present the derivative as a separate line item (labeled either as derivative or as trading asset measured at fair value through profit or loss).

Figure 2: Balance sheets of Entity A and Entity B as of $t = 1$

Assets	Entity A		Liabilities
Trading assets (at fair value)	10	Non-current liabilities	400
Current financial assets	100	Equity	10
Held-to-maturity financial assets	300		
	<u>410</u>		<u>410</u>

Assets	Entity B		Liabilities
Current financial assets	100	Non-current liabilities	500
Other long-term financial assets	100		
Held-to-maturity financial assets	300		
	<u>500</u>		<u>500</u>

At this point, it is important to keep in mind that future cash flows of Entity A and Entity B only differ in the counterparty risk. In figure 1 and figure 2 however, we are able to find two differences in the balance sheets of both entities that might have significant impact on the perception of the entities' risk. The first difference results from the different measurement bases of derivative and non-derivative instruments, that is Entity A will report a profit or loss at $t=1$ whereas Entity B will not. The second difference results from the

presentation requirements under IFRS 7, that is Entity A will report, either on face of the balance sheet or in the notes, the use of a financial derivative that is held for trading and that is measured at fair value whereas Entity B will not. We can derive our research questions from these two differences:

Research question 1:

If an entity can choose between the risk management strategy of Entity A and the risk management strategy of Entity B, how is this choice influenced by the consequences that are implied by the different measurement bases associated with each strategy under the mixed accounting model, i.e. does the mixed accounting model provide management with leeway for earnings management in this situation?

Research question 2:

If investors are confined to certain boundedly rational behavior and are therefore not able to identify the similarity of economic risks when the underlying financial instruments are communicated in different ways, how will the risks Entity A and Entity B are exposed to be perceived?

3 The conventional argument: Impact of accounting inconsistencies on earnings management

There is a vast amount of empirical evidence concerning earnings management (Healy and Wahlen (1999); Nelson et al. (2003); Graham et al. (2005); Roychowdhury (2006)). While most of the studies concentrate on earnings management by means of financial reporting choices, others report earnings management through real activities manipulation. Which method is chosen for earnings management is largely determined by the dominant incentive for earnings management in a given situation, whereas the incentives themselves are not created by the available methods⁶ but by external factors, such as management

⁶ A notable exemption is that accounting-based manipulations seem to be regarded as morally and professionally inferior to real activities manipulations, so there might be an incentive to avoid accounting-based manipulations if possible (see Graham et al., 2005, p. 35).

compensation contracts and career concerns (see Healy and Wahlen, 1999, p. 375 et seq., and Baber et al., 1998, p. 170). In particular, we talk about management contracts that contain payment components contingent on performance measures, such as accounting income, or on some measure of company value, such as the stock price. Well documented incentives are related to exceeding certain earnings thresholds (Barth et al. (1999); Bhojraj and Libby (2005); Burgstahler and Eames (2006); Dechow and Skinner (2000)), earnings smoothing (Graham et al. (2005); Dechow and Skinner (2000); Degeorge et al. (1999)) or either the maximization or minimization of accounting income (Healy, 1985, p. 376 et seq.).

To illustrate this point with respect to the example described above, i.e. the choice between a non-contingent derivative such as the interest rate swap and a non-derivative financial instrument with equivalent timing, structure and uncertainty of cash flows such as the swap-equivalent, imagine a manager with a compensation contract determining that his remuneration consists of a fixed component and a bonus payment that is contingent on the profit of the firm. Under this contract, management participates in the firm's profits but is shielded against its losses. The widespread application of those contracts is empirically supported for example by Gaver and Gaver (1998). In accordance with agency theory, we assume the management to be self-interested such that it seeks to maximize the net present value (NPV) of its expected compensation. The firm's shareholders on the other hand are interested in maximizing the firm's value, i.e. the net present value of its cash flows, where the gross cash flow before management compensation is, according to our example, unaffected by the hedging instrument employed if the counterparty risk of the swap-equivalent is negligible. At the bottom line, any increase in the NPV of the management's compensation causes a corresponding decrease in the shareholders' wealth.

If we change the example to a situation where a bonus is paid only if the positive accounting income exceeds a certain benchmark, the decision becomes less predictable. According to Healy (1985), the manager now seeks to maximize accounting income only if that will carry him at least above the threshold. Otherwise he might prefer to minimize accounting income in order to save earnings for future periods where the threshold is

within reach. In the first situation, management has a strict incentive to choose the swap or, in case of the swap-equivalent, to employ the fair value option which IAS 39 offers for such contract combinations. The reason is that management is shielded against fair value losses but profits from fair value gains. In our example that means that the NPV of the management compensation is unaffected by increasing interest rates resulting in fair value losses of the hedging instrument (be it the swap or the swap-equivalent), whereas it increases in the case of decreasing interest rates as the resulting fair value gain increases accounting profit in the first period. In figure 2, only Entity A's management can report a gain while Entity B's management cannot, since it has not applied the fair value option. The subsequent fair value impairment of the swap in later periods less than reverses the initial positive effect in terms of NPV since the management of Entity A will not participate in accounting losses.

Thus, abstracting from all other factors, IAS 39's mixed accounting model in combination with management compensation contingent on earnings might lead management to choose among economically equivalent hedging instruments those that increase their income at the shareholders' expense, the swap. One might argue that a swap in fact is economically superior to the swap-equivalent due to its lower transaction cost and lower counterparty risk, so shareholders should be in favor of its use anyway. With respect to the costs this is a valid objection, although it might be softened somewhat by the observation that management would bear at least part of the higher contracting costs resulting from using the swap-equivalent, while the shareholders alone bear the higher management compensation costs.

An opposite effect might however be observed if income smoothing was the dominant objective of management. In this case, the relatively high income variability induced by fair value measurement will give an incentive for the use of non-derivative cash flow equivalents measured at amortized cost or at fair value directly through equity. Whichever objective dominates management's behavior, with regard to research question 1 we find that the inconsistencies in accounting for non-contingent derivatives always allow an accounting policy in accordance with the management's strategy of maximizing its compen-

sation. Thus, following an argumentation based on already existing evidence of earnings management, the inconsistencies are disadvantageous to an entity's owners. From the discussion in this section it can at least be concluded that a profit figure determined by the mixed accounting model according to IAS 39 does not qualify as a useful basis for a performance-based management compensation.

4 The behavioral argument: Impact of accounting inconsistencies on risk perception by investors

Review of prior research

The impact of IAS 39 on earnings management stems from the diversity of measurement bases. The standard's mixed accounting model, however, does not only affect measurement but also presentation and disclosure of financial instruments. As presentation and disclosure have a particular impact on the perception of an entity's risks by individual investors a critical assessment of the identified accounting inconsistencies from a behavioral perspective suggests itself.

In accordance with capital market theory, the market price of an asset represents the aggregate expectations of all market participants as regards its value. Risk enters into that assessment in the form of probability-weights attributed to all possible payoffs of the asset by every market participant. Under the assumption that value expresses utility, economic decisions should then be made in accordance with expected utility maximization. Experimental research in psychology, finance, and accounting has shown that decision making or the forming of expectations on the individual level, however, often deviates from the expected-utility-rule. Hirshleifer (2001) reviews the literature about the influence of investor psychology on asset pricing and concludes that psychology-based asset-pricing theory has the potential to explain empirically observable deviations from unbiased asset pricing⁷. He explicitly points out misperception of risk as one reason for these deviations. Arkes (1991) gives an extensive discussion and categorization of such deviations beyond

⁷ Unbiased pricing implies the derivation of expected values as described at the beginning of this paragraph.

capital market considerations. One such category is called association-based errors and contains judgment errors that result from the automatic and often subconscious inclusion of associations from semantic memory in decision processes, such as availability or labeling effects (see Folkes, 1988 and Levin et al. (1985) for examples).

Availability describes how easily examples of certain events come to mind and it therefore affects the probability attached to these events, such that events which are easier to recall or imagine are judged to be more common (see Hirshleifer, 2001, p. 1524). Several studies show how availability can be influenced. Folkes (1988) for example shows that distinctiveness of an item enhances its availability and increases the probability estimate of events connected to this item. Distinctiveness there is related, among other dimensions, to the event or the item being atypical. For example, product failures of typical brand products were more distinct than product successes, the reason being that people encounter far more successes than failures (Folkes, 1988, p. 16). Closely related to the availability heuristic are labeling effects because labels serve as primes for semantic memory, i.e. as means to increase availability (see Arkes, 1991; Koonce et al., 2005a,b).

Experimental research in accounting has used labeling effects to explain different receptions of financial statement information, depending on the presentation of the underlying event. Hopkins (1996) for example provides evidence that the financial statement classification of hybrid financial instruments affects the stock price judgments of financial analysts. Maines and McDaniel (2000) demonstrate in a more general setting that investors' use of comprehensive income information largely depends on the presentation format of income. Koonce et al. (2005a) find that labels, attached to financial instruments with identical underlying net cash flow and risk, influence the risk associated with each instrument. They explain this effect with the media coverage of losses from certain financial derivatives, such as swaps, futures and options. The labels 'swap' and 'hedge', which they use in their study, make these negative associations available to (non-professional) investors and lead to an increased risk perception (Koonce et al., 2005a, p. 875). This result is conform with Weber et al. (2005) who more generally suggest that risk perception is significantly affected by an asset's name. In another study, Koonce et al. (2005b) provide

a more extensive consideration of the labeling effects on risk perception. According to their analysis, risk is perceived not only in terms of probabilities and outcomes but also in cognitive categories, such as catastrophic potential and worry. These additional categories may lead individuals to overestimate the risk of a financial item and hence underestimate its value. This effect would obtain if the label used to describe the financial item, e.g. the balance sheet category, triggers negative rather than positive associations. Also, different balance sheet categories may cause different associations such that a financial item might be perceived different in terms of risk, depending on the category it is sorted into.

The mixed accounting model under IAS 39 in the light of prior behavioral findings

Considering these findings, we expect less risk to be associated with non-derivative financial items than with derivatives, first because the former lack the leverage effect of derivatives, which indeed decreases their catastrophic potential, and second because losses from non-derivative financial items are not associated with speculation but with normal business and thus receive little media attention. Losses from derivatives, on the other hand, as a result of failed speculation often attain high media coverage and therefore are, in contrast to the far more common case of successful hedging strategies, highly available⁸. Bodnar and Gebhardt (1999) find that even managers are aware of investors' and analysts' negative associations when confronted with an entity's use of derivatives. We therefore conclude that the delineation of IFRS 7 from the JWG's approach of a balance sheet presentation according to the type of financial instruments is justified by good reasons. Under the latter approach, a derivative disclosed as such would directly evoke an association with negative outcomes. Our conclusion holds even when taking the results of Koonce et al. (2006) into account who show that investors appreciate the use of derivatives when learning about the results ex post; the presentation on a balance sheet implies that an entity is still engaged in derivatives and a balance sheet thus provides investors and analysts with information on this engagement ex ante.

⁸ See Chalmers and Godfrey (2004) for a similar assumption. Trombley, 2003, pp. 5-9, Bodnar and Gebhardt, 1999, p. 154 and Benston and Mian, 1995, p. 219 provide some prominent examples. A recent example are the loss announcements by Fannie Mae, a US mortgage bank, that were broadly covered in the news. An article in the WSJ for instance was titled "Fannie revises losses on derivative contracts" (March 18, 2005, p. A4, see also March 3, 2005, p. A3).

The presentation of a measurement category (instead of an instrument's type) under IFRS 7 can, however, be regarded as a periphrasis of an instrument's type. The classification actually emphasizes the two purposes of an entity's use of financial instruments that were identified in the first part of this paper. The category labeled as held for trading obviously refers to a short-term speculative purpose. The other categories labeled as available for sale, held to maturity, loans and receivables, or other liabilities refer to a longer-term holding (or hedging) purpose. If it was now cognitively available to investors that short-term trading portfolios regularly consist of financial derivatives exploiting the leverage effect, it could be argued that investors faced with a balance sheet category labeled as held for trading would undergo a reaction similar to investors faced with a balance sheet category labeled as derivatives⁹. The same argument might hold as regards the alternative classification 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 of that ilk.

When we apply our conclusions on the accounting rules for non-contingent financial derivatives according to IFRS, the inconsistencies from a behavioral perspective become evident as they might induce an unintended risk perception. An entity presenting non-contingent financial derivatives that are labeled on the balance sheet or in the notes as being held for trading and as measured at fair value would be perceived to be a riskier investment than another entity presenting non-derivative financial instruments that are not labeled as being held for trading and not as measured at fair value. On the one hand, this result would emphasize that the IASB had met its objective of providing information on the underlying risk of financial instruments by presenting them in separate groups on the balance sheet and in the notes. On the other hand however, the resulting risk perception might be flawed since we could demonstrate in our example that a combination of non-

⁹ In fact, the question about the cognitive association between trading and speculation has already been raised by Young, 1996, p. 507.

derivative financial instruments with equivalent cash flows to a swap and which is not mandatorily measured at fair value might be riskier than a comparable interest rate swap agreement due to the differences in counterparty risk. The presentation and the disclosure of financial instruments by measurement category and by measurement base according to IAS 39 and IFRS 7 would thus result in a bias of investor's risk perception such that investments which are riskier compared to equivalents would actually be perceived as being less risky. This will in turn alter an entity's capital costs.

Getting back to the example described above, Entity B would be perceived as being less risky than Entity A which is presenting trading assets measured at fair value on the face of its balance sheet, even though Entity B faces a counterparty risk in excess of the counterparty risk born by Entity A. With regard to research question 2, our discussion thus suggests that there is a bias in the perception of the risks Entity A and Entity B are exposed to.

Possibilities for future research

There are two assumptions with regard to the behavior of investors and analysts underlying our conclusion that both deserve further attention. The first assumption is that a class of financial instruments presented on the balance sheet or in the notes as being held for trading (respectively as measured at fair value through profit or loss) will be more likely associated with speculative trading strategies based on the use of financial derivatives than classes of financial instruments presented on the balance sheet as being available for sale, held to maturity, loans and receivables, or other liabilities (respectively as measured at amortized cost). This assumption could be justified, analogous to the findings of prior research on the immediate perception of the use of derivatives, by the availability of both news coverage and investors' own experience. The use of derivatives in speculative trading strategies is a regular and prominent topic of magazines covering investment consultancy¹⁰. It has been demonstrated that individual investors split up their total investment

¹⁰ Some anecdotal evidence will underline this point. The FT for example recently published a report on the mastering of risk by investors, part 3 of this report was titled "Diversification and derivatives can both be valuable tools for managing an investment portfolio" (September 23, 2005, p. 2). The Fortune Magazine published an interview with Leo Melamed, a creator of derivative futures, who emphasized

portfolio into different so called mental accounts neglecting interdependencies (Thaler (1980, 1985)) and it can be observed that speculative investments make up one separate mental account (see Shefrin and Statman, 2000, p. 148 et seq.). On this basis, one can conclude that individual investors will have their own experience in the composition of separate trading portfolios and that they are aware of derivatives as a regular component of those portfolios.

The second assumption is that financial instruments presented on the balance sheet or in the notes as being held for trading (respectively as measured at fair value) will be judged as riskier than financial instruments presented on the balance sheet as being available for sale, held to maturity, loans and receivables, or other liabilities (respectively as measured at amortized cost). This assumption follows from the first assumption. If a presentation of financial instruments by measurement category or by measurement base affects the risk perception by investors in the same way as a balance sheet presentation by type as it was observed by Koonce et al. (2005a) and Koonce et al. (2005b), we could expect the same availability effect for instruments labeled as being held for trading or as measured at fair value. As a result, by recognition of those labels and by immediate association with the use of derivatives, individuals will have a bias in their judgment of the risk exposure.

These two assumptions are critical with respect to our conclusion on the behavioral effects of the mixed accounting model for non-contingent financial derivatives according to IFRS. Therefore, they will serve as a basis for experimental studies with non-professional and professional investors.

5 Conclusion

(1) According to IAS 39, non-contingent derivatives such as swaps or forwards are measured at fair value and presented on the balance sheet or in the notes as being held for trading and as measured at fair value. A combination of non-derivative contracts that re-

that retail investors "find their way" on this market (December 25, 2006, p. 124). The Forbes Magazine, when it covered the private banking business, stated that once "a millionaire is hooked, a relationship manager might find him a structured derivative for his finances" (November 28, 2005, p. 147).

sults in an equivalent timing, structure and uncertainty of cash flows, on the other hand, offers several different accounting policies. In contrast to derivatives, fair value measurement is not mandatory for those contracts. Instead, measurement at cost or at fair value through equity is also allowed. The measurement base chosen has further implications on the label under which the instruments are disclosed as this label needs to refer directly to the measurement category.

(2) The different accounting policies available for non-derivatives on the one hand and economically equivalent contracts on the other hand provide management with leeway to act opportunistically by means of earnings management. Empirical and anecdotal evidence shows that management indeed has incentives for earnings management and acts accordingly. We show that the accounting problem discussed here provides leeway for the exercise of both accrual-based earnings management and for earnings management through real activities manipulation.

(3) Existing experimental evidence suggests that the perception of a financial instruments' risk significantly relies on its label. Instruments labeled as derivatives for example are regularly perceived to be riskier than instruments not labeled as derivatives. This insight has implications for the presentation of financial instruments under IFRS 7. We hypothesize that a category labeled as held for trading or as measured at fair value will be judged to contain derivatives in order to earn short-term speculative profit, whereas the other measurement categories will be judged to serve a longer-term holding purpose. As a result, entities involved in non-contingent derivatives will be perceived to be a riskier investment than entities involved in a combination of contracts that are equivalent with regard to the timing, structure and uncertainty of cash flows but even riskier when taking into account the counterparty's default.

(4) This paper aims at providing the theoretical framework for future experimental research which tests for biased risk perception related to the different labels prescribed by IFRS 7. Thereby, one needs to distinguish between the presentation by measurement category on the face of the balance sheet and the presentation by measurement base in the

notes. The results could serve as a justification for a correction of the identified inconsistency in future standard setting.

References

- Hal R. Arkes. Costs and benefits of judgement errors: Implications for debiasing. *Psychological Bulletin*, 110(3):486–498, 1991.
- William R. Baber, Sok-Hyon Kang, and Krishna R. Kumar. Accounting earnings and executive compensation: The role of earnings persistence. *Journal of Accounting and Economics*, 25:169–193, 1998.
- Mary E. Barth. Fair value accounting: Evidence from investment securities and the market valuation of banks. *The Accounting Review*, 69(1):1–25, 1994.
- Mary E. Barth, John A. Elliot, and Mark W. Finn. Market rewards associated with patterns of increasing earnings. *Journal of Accounting Research*, 37(2):387–413, 1999.
- Mary E. Barth, William H. Beaver, and Wayne H. Landsman. The relevance of the value relevance literature: Another view. *Journal of Accounting and Economics*, 31(1-3): 77–104, 2001.
- 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.
- Sanjeev Bhojraj and Robert Libby. Capital market pressure, disclosure frequency-induced earnings/cash flow conflict, and managerial myopia. *The Accounting Review*, 80(1):1–20, 2005.
- 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.
- Michael E. Bradbury. Implications for the conceptual framework arising from accounting for financial instruments. *Abacus*, 39(3):388–397, 2003.
- Michael Bromwich. Aspects of the future in accounting: The use of market prices and "fair value" in financial reports. In Christian Leuz et al., editor, *The Economics and Politics of Accounting*. Oxford University Press, Oxford, 2004.

- David Burgstahler and Michael Eames. Management of earnings and analysts' forecasts to achieve zero and small positive earnings surprises. *Journal of Business Finance & Accounting*, 33(5-6):633–652, 2006.
- David Cairns. The use of fair value in IFRS. *Accounting in Europe*, 3:5–22, 2006.
- Anne Cazavan-Jeny and T. Jeanjean. The negative impact of r&d capitalization: A value relevance approach. *European Accounting Review*, 15(1):37–61, 2006.
- Keryn Chalmers and Jayne M. Godfrey. Reputation costs: The impetus for voluntary derivative financial instruments reporting. *Accounting, Organizations and Society*, 29(2):95–125, 2004.
- Patricia M. Dechow and Douglas J. Skinner. Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, 14(2):235–250, 2000.
- Francois Degeorge, Jayendu Patel, and Richard Zeckhauser. Earnings management to exceed thresholds. *Journal of Business*, 72(1):1–33, 1999.
- Ernst & Young. *International GAAP 2007*. LexisNexis, 2006.
- Valerie S. Folkes. The availability heuristic and perceived risk. *The Journal of Consumer Research*, 15(1):13–23, 1988.
- Jennifer J. Gaver and Kenneth M. Gaver. The relation between nonrecurring accounting transactions and CEO cash compensation. *The Accounting Review*, 73(2):235–253, 1998.
- Günther Gebhardt, Rolf Reichardt, and Carsten Wittenbrink. Accounting for financial instruments in the banking industry: Conclusions from a simulation model. *European Accounting Review*, 13(2):341–371, 2004.
- John R. Graham, Campbell R. Harvey, and Shiva Rajgopal. The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40:3–73, 2005.
- Ian P. N. Hague. IAS 39: Underlying principles. *Accounting in Europe*, 1:21–26, 2004.

- Paul M. Healy. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics*, 7:85–107, 1985.
- Paul M. Healy and James M. Wahlen. A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4):365–383, 1999.
- David Hirshleifer. Investor psychology and asset pricing. *The Journal of Finance*, 56(4): 1533–1597, 2001.
- Leslie Hodder, Lisa Koonce, and Mary L. McAnally. SEC market risk disclosures: Implications for judgment and decision making. *Accounting Horizons*, 15(1):49–70, 2001.
- Robert W. Holthausen and Ross L. Watts. The relevance of the value relevance literature for financial accounting standard setting. *Journal of Accounting and Economics*, 31 (1-3):3–75, 2001.
- Patrick E. Hopkins. The effect of financial statement classification of hybrid financial instruments on financial analysts' stock price judgements. *Journal of Accounting Research*, 34(Supplement):33–50, 1996.
- Anthony Hopwood. *Accounting and Human behavior*. Haymarket Publishing, 1974.
- John C. Hull. *Options, Futures, and other Derivatives*. Prentice Hall, Upper Saddle River, NJ, sixth edition, 2006.
- Joint Working Group of Standard Setters. Financial instruments and similar items - draft standard and basis for conclusions, 2000.
- 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.

- 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.
- Thomas J. Linsmeier, James R. Boatsman, Robert Herz, Gregory J. Jonas, Mark H. Lang, Kathy R. Petroni, D. Shores, and James M. Wahlen. Response to a discussion paper issued by the iasc/cica steering committee on financial instruments, accounting for financial assets and financial liabilities. *Accounting Horizons*, 12(1):90–97, 1998.
- Laureen A. Maines and Linda S. McDaniel. Effects of comprehensive-income characteristics on nonprofessional investors' judgements: The role of financial-statement presentation format. *The Accounting Review*, 75(2):179–207, 2000.
- Bernadette A. Minton. An empirical examination of basic valuation models for plain vanilla u.s. interest rate swaps. *Journal of Financial Economics*, 44(2):251–277, 1997.
- Adolf Moxter. *Grundsätze ordnungsgemäßer Rechnungslegung*. IDW, 2003.
- Mark W. Nelson, John A. Elliott, and Robin L. Tarpley. How are earnings managed? examples from auditors. *Accounting Horizons*, 17(Supplement):17–35, 2003.
- Sugata Roychowdhury. Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42:335–370, 2006.
- Hersh Shefrin and Meir Statman. Behavioral portfolio theory. *Journal of Financial and Quantitative Analysis*, 35(2):127–151, 2000.
- Richard Thaler. Toward a positive theory of consumer choice. *Journal of Economic Behavior and Organization*, 1(1):39–60, 1980.
- Richard Thaler. Mental accounting and consumer choice. *Marketing Science*, 4(3):199–214, 1985.
- Mark A. Trombley. *Accounting for Derivatives and Hedging*. McGraw-Hill Irwin, Boston et al., 2003.

- Peter Walton. IAS 39: Where different accounting models collide. *Accounting in Europe*, 1:5–16, 2004.
- Elke U. Weber, Niklas Siebenmorgen, and Martin Weber. Communicating asset risk: How name recognition and the format of historic volatility information affect risk perception and investment decisions. *Risk Analysis*, 25(3):597–609, 2005.
- Margaret Woods and David E.W. Marginson. Accounting for derivatives: An evaluation of reporting practice by UK banks. *European Accounting Review*, 13(2):373–390, 2004.
- Jens Wüstemann and Jannis Bischof. The fair value principle and its impact on debt and equity - theoretical traditions, conceptual models, and analysis of existing IFRS. In Peter Walton, editor, *The Routledge companion to fair value and financial reporting*, pages 210–230. Routledge, 2007.
- 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.
- Joni J. Young. Institutional thinking: The case of financial instruments. *Accounting, Organizations and Society*, 21(5):487–512, 1996.

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